PRODUCT DATA SHEET

LIFTING COLUMN BL3

Features:

- *24 V DC permanent magnetic motor*
- *Max. thrust 1600 N (push applications only)*
- *Single or parallel drive*
- *Install. dimension 350 mm (+5/-3) + stroke 400 mm (+/-6)*
- *Duty cycle up to 10 % or max. 2/18 min.*
- *Ambient temperatures: +5° to +40°C*
- *BL3 can be combined with CB7, CB08, CB9, CB12 and CB14O*
- *BL3 can only be used in push applications mounted with the bottom downwards and the top upwards*
- *Colour: Grey powder painted bottom (RAL 7035) and galvanised steel sheet and ball guidance.*
- *DIN or Jack plug*
- *Built-in limit switches (not adjustable)*
- *Low noise level*
- *Actuator LA31 is inside the BL3*
- *BL3 combined with CB9 Careline (apart from PM and PN versions) is approved according to UL 2601-1*
- *BL3 combined with all CB9 analog + CB14 versions is approved according to EN 60601*

Options:

- *Reed-switch*

The BL3 lifting column is the ideal choice for vertical lift for hospital - and care beds where design, easy cleaning and ergonomics are important factors.

The BL3 is a 3-part telescopic column with a special slide system especially developed to fulfil the European standard EN 1970 in a care bed that demands an adjustment range from 400 mm up to 800 mm.

The BL3 is an open metal sheet plate construction made of powder painted and galvanised parts, which are partly screwed and riveted together. On two of the sides are ball bands mounted as a guidance. The actuator is mounted between the guidance where the power is transferred via a chain reaction, which gives the double exchange and a stroke of 400 mm.

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Technical specifications:

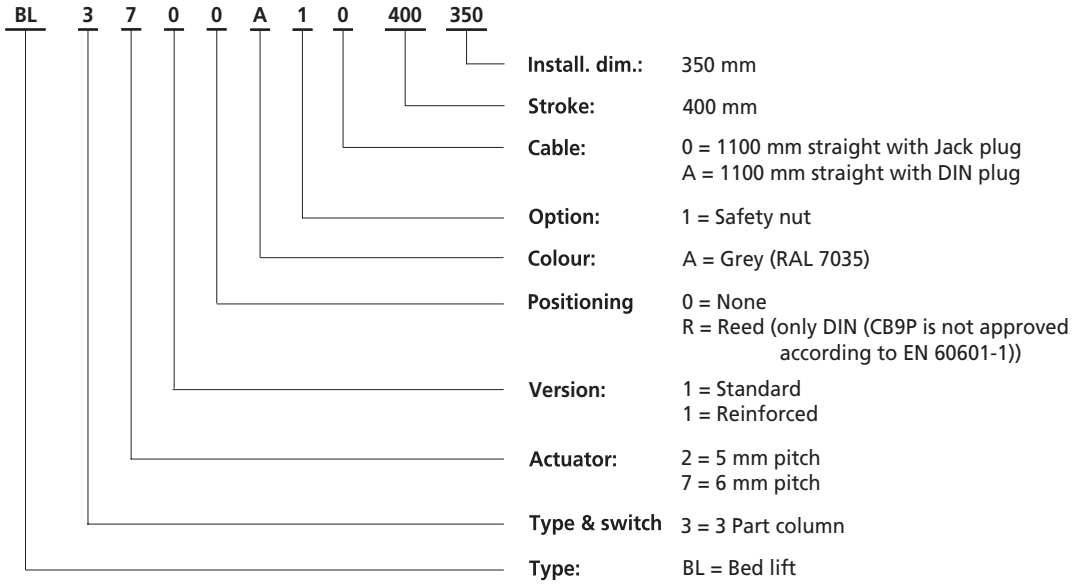
Type	Spindle pitch (mm)	Thrust max. (N)	*Self-lock max. (N)	Typical speed 0/full load (mm/s)		Stroke length (mm)	Typical amp.* At full load (A) 24 V	Max. dynamic bending moment Max. static bending moment in parenthesis ( ). (Nm) Standard + My - My	Reinforced + Mx - Mx	+ Mx - Mx	Max. Static Pull (N)
BL3	5	1600	1600	19	10	400	3.5	100(100)	100(200)	250(400)	1000
BL3	6	1250	1250	22	12	400	3	100(100)	100(200)	250(400)	1000

* LINAK control boxes are designed to short-circuit the motor terminals (poles) of the actuator(s), when the actuator(s) are not running. This solution gives the actuator(s) a higher self-locking ability. If the actuator(s) are not connected to a LINAK control box, the terminals of the motor must be short circuited to achieve the self-locking ability of the actuator.

The values (table and curves) are from two BL3's in connection with a CB9AE at simulatneously drive.

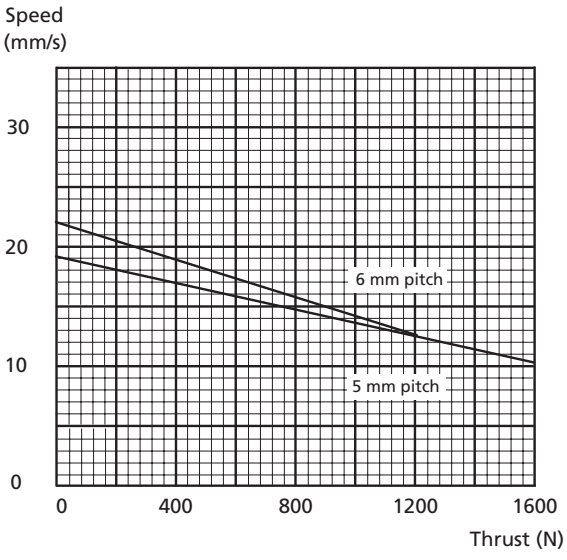
BL3

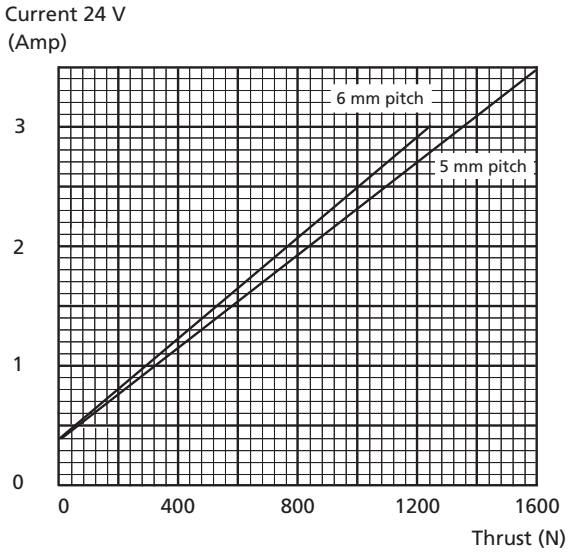
Ordering example:



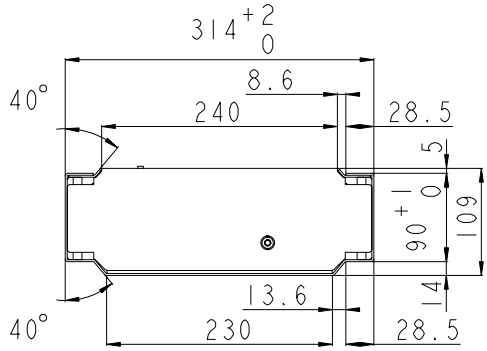
Can only be used in push applications

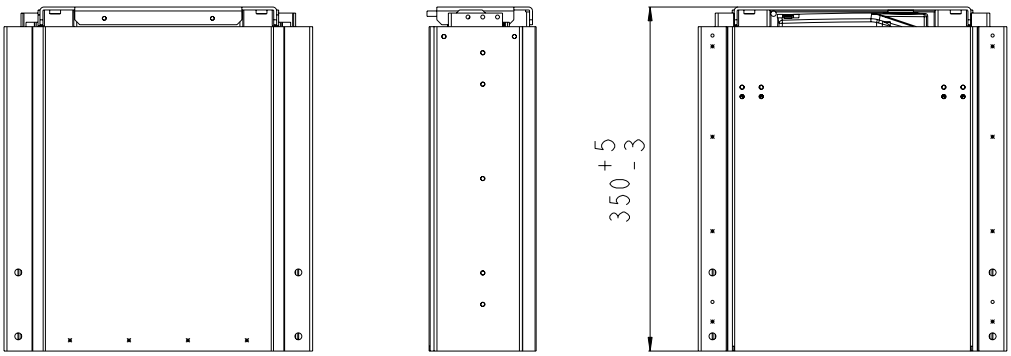
Curves speed and current:

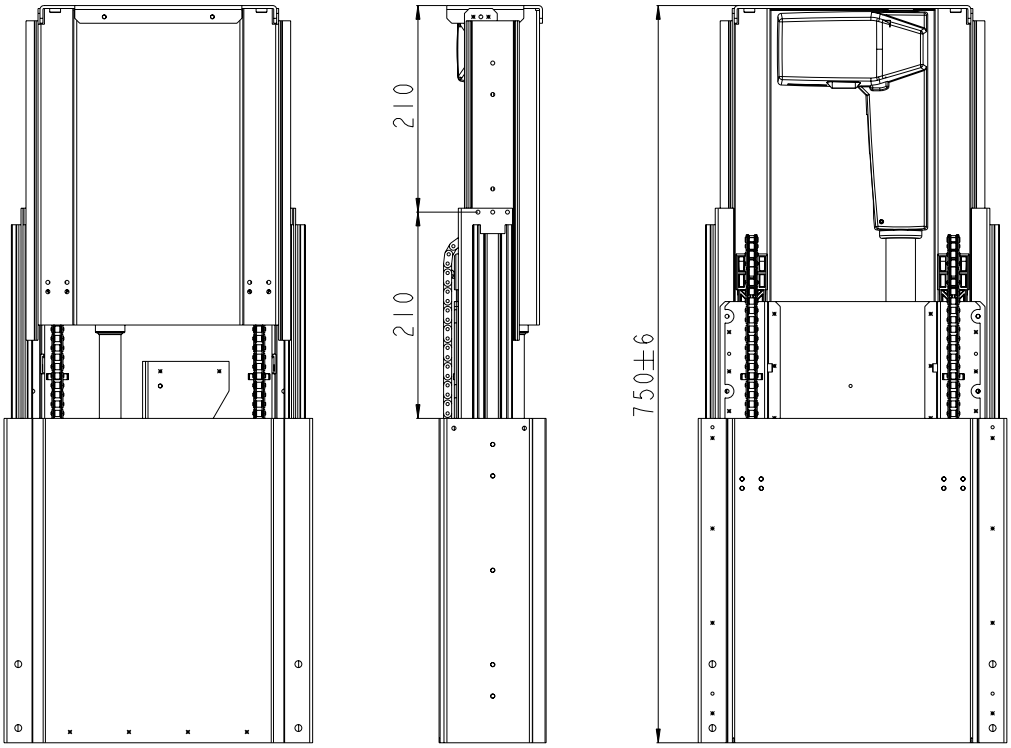




Dimensions:


314 +2 0
8.6
40°
240
28.5
5
90 +1 0
109
13.6
14
40°
230
28.5


350 +5 -3


210
210
750±6

PRODUCT DATA SHEET

LIFTING COLUMN BL4

Features:
- *24V DC permanent magnet motor*
- *Installation dimension 350 mm (+/-3)*
- *Stroke length 400 mm (+/-3)*
- *Dynamic load max. 1,500 N*
- *Safety factor > 2.4*
- *IP protection class IP X4*
- *"V0 plastic" motor housing*
- *Colour: RAL 7035*
- *Built-in limit switches (not adjustable)*
- *Low noise level (49 dB)*
- *BL4 combined with CB9 (AF, AG and AH functionalities), CB12H*, CB14 and CB20 is approved according to EN 60601-1*
- *Safety nut as standard*
- *Weight 8.2 kg*
- *Exchangeable cables: one end fitted with minifit the other end fitted with either Jack, DIN or minifit plugs.*

** = Only CB12H in a special version is compatible with BL4*

Options:
- *Protection class IP X6*
- *Protection class IP X6 Washable*
- *Customised RAL colours (requires order quantity of min. 500 pcs. and only as special articles). Metallic paint not available.*
- *Reed functionality*

Usage:
- *Duty cycle up to 10 % or max. 2/18 min.*
- *Ambient temperatures: +5° to + 40°C*
- *BL4 can be combined with CB9AF, AG, AH, CB12H (special version), CB14 and OPENBUS™ control boxes e.g. CB20*

The BL4 is a 4-part lifting column specially designed for hospital and care beds; the BL4 can of course be used for other applications where a compact lifting column with a long stroke length is needed.

The lifting column is based on the BB3 actuator, which is practically noiseless. The specifications comply with the demands to the lifting functions in beds as to load, speed and stroke length.

When using the 4-part guidance you obtain an effective overlap between the individual profiles, which ensures a high degree of stability.

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Technical specifications:

Type	Spindle pitch (mm)	Thrust max. (N)	*Self-lock max. (N)	Bending moment max. (static) (Nm)	Bending moment max. (dynamic) (Nm)	Stroke length (mm)	Max. Static Pull (N)
BL4	6	1500	2000	500	250	400	600

Type	Typical speed 0/full load 24V (CB12H / CB9Ax) (mm/s)		Typical speed 0/full load 24V (CB14) (mm/s)		Typical Amp. at full load 24V (Amp)
BL4	11	11	15	11	3

* LINAK control boxes are designed to short-circuit the motor terminals (poles) of the actuator(s), when the actuator(s) are not running. This solution gives the actuator(s) a higher self-locking ability. If the actuator(s) are not connected to a LINAK control box, the terminals of the motor must be short-circuited to achieve the self-locking ability of the actuator.

Precautions:

- Max. storage temperatures: +50°C.
- BL4 is for use in push applications only and only mounted with the motor housing uppermost.
- Actuators using "buffer" end-stop principle are not compatible with BL4 and CB9 systems.
- If the column is driven in end-position (end-stop switches in the actuator will be activated) and if the handset is kept activated you will in some cases, depending on the column load, see that the actuator starts and stops as long as the handset is activated.

Precautions with washable versions:

- IPX6 Washable versions must not be dismantled and then be rebuilt again without the motor housing being changed in order to ensure the washability.
- There must be at least 4 hours between each washing cycle to allow the BL4 to resume normal temperature.

BL4

Ordering example:

BL 4 6 4 R A 0 3 400 A

Installation dimension:	A = 350 mm
Stroke:	400 mm
Motor:	3 = 24 V Fast Motor
Reserved:	0
Colour:	A = RAL 7035
Option:	0 = Standard R = Reed 2 = Reed CB20
IP Degree:	4 = IP X4 5 = IP X6 6 = IP X6 washable
Spindel type:	6 = 6 mm pitch
BL-type:	4 = 4-part column
Actuator type:	BL = Bed Lift

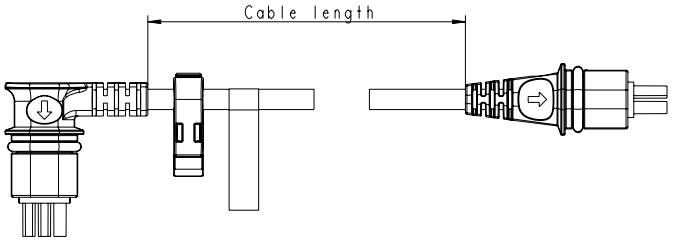
The following cables are available: (Colour RAL 7035)
0277029-700 straight cable with minifit and DIN plug
0277032-700 straight cable with minifit and jack plug

0277029-1250 straight cable with minifit and DIN plug
0277032-1250 straight cable with minifit and jack plug

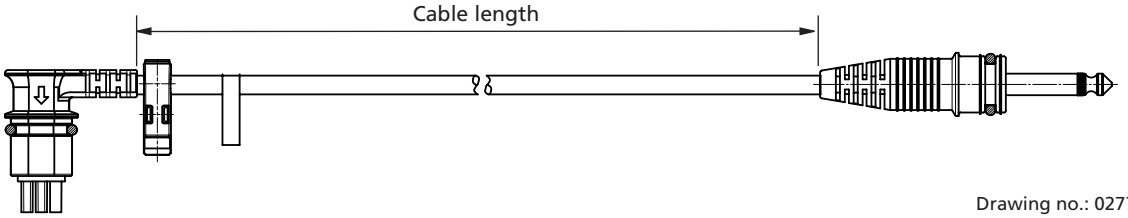
0277029-1700 straight cable with minifit and DIN plug
0277032-1700 straight cable with minifit and jack plug

Cables for reed CB20 functionality:	**Cables for Reed functionality:**
00914657-1250 with 2 minifit plugs	0673022-1250 with mini-fit and jack plug
00914657-2500 with 2 minifit plugs	0673022-1700 with mini-fit and jack plug

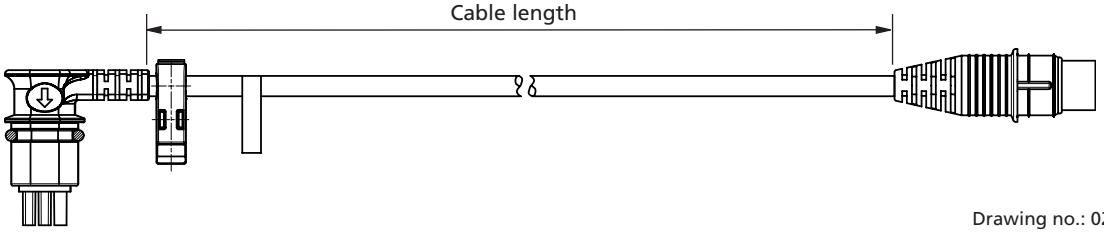
Cables:



Drawing no.: 00914657

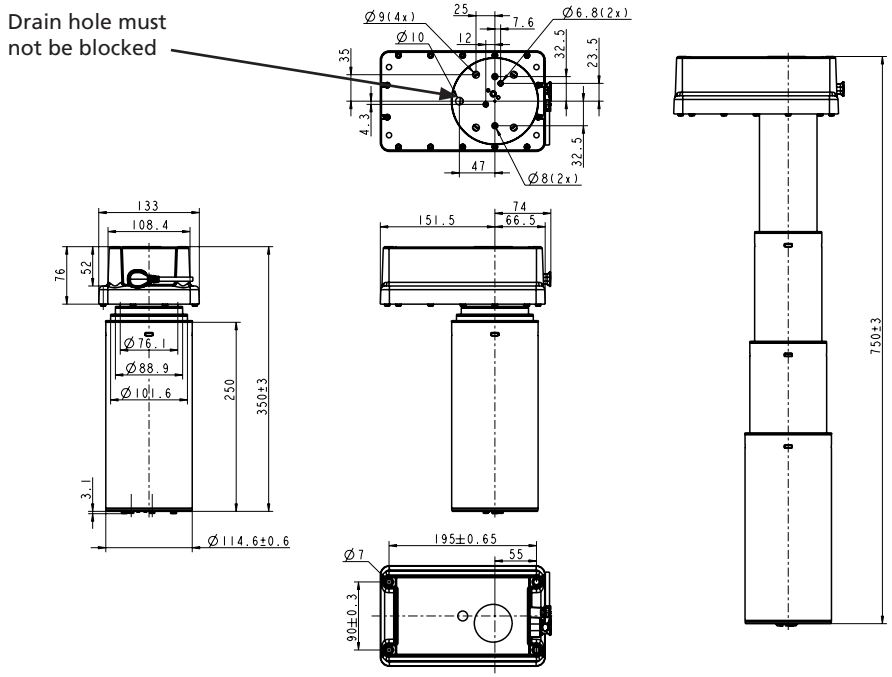


Drawing no.: 0277032



Drawing no.: 0277029

Dimensions:



Application design with CB9:
For optimal speed choose CB9 with CB14 transformer.
Therefore BL4 is compatible with CB9 using AF, AG and AH-functionalities.
AF has a cut-off limit of 5.0 A on all channels.
AG has a cut-off limit of 3.4 A on channel 1 and 2 and no cut-off on channels 3 and 4.
AH has no cut-off limits on any channels.

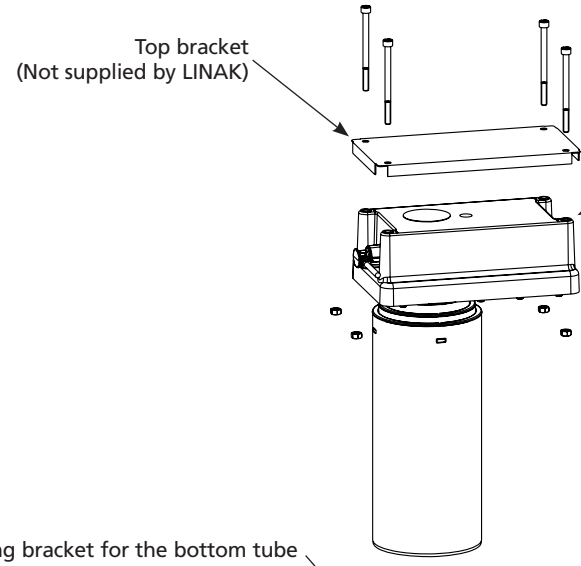
This means that AG-functionality could be a good solution if e.g. 2 x BL4 are used on channels 3 and 4, an LA31 to the headrest and an LA31 to the legrest.
AH is for general use, but has no form for overload protection.
AF could be used e.g. in an application with LA31, where there is a wish for high speed with a high load. Or if you wanted to run a BL4 on it´s own.

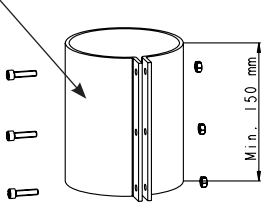
Mounting guidelines:

The BL4 must always be mounted before operation and always with the motor housing uppermost (Otherwise the internal end stop switch system can break due to rotation).

Both the motor housing and the bottom tube (the one with the largest diameter) must be secured in the application in such a way, that no rotation can occur.

It is recommended to monitor the current consumption in order to determine the necessary tensioning force for the mounting bracket. If the current consumption rises the BL4 has been tightened too much.





Mounting bracket for the bottom tube

The bracket drawings are for guideline purposes only.

LINAK can supply a mounting bracket for the bottom tube.
Part no.: 0673003
Has to be ordered separately.

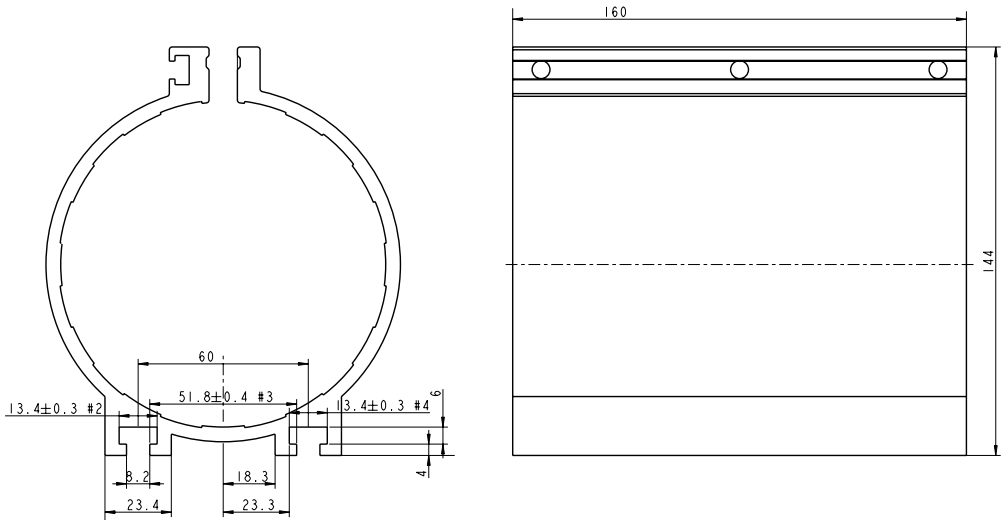
The bracket force has to be distributed over the entire diameter and over a height of min. 150 mm.

The application (top bracket) must cover the entire motor housing and be strong enough to carry the load.

It is recommended that all 4 holes in the motor housing are used to fasten the BL4 to the application.
The screws must provide a secure fixing e.g. as with self-locking.

Remember to secure the cable to the housing with a cable tie. Use the fixing eye next to the connector socket.
On the BL4 cables, clip sleeves are mounted, they need to be removed.

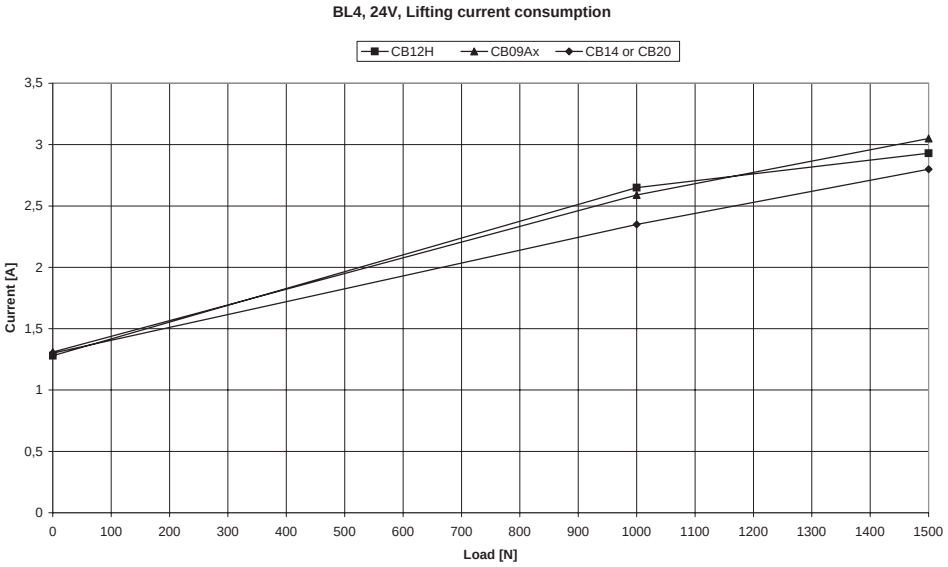
LINAK mounting bracket part no.: 0673003

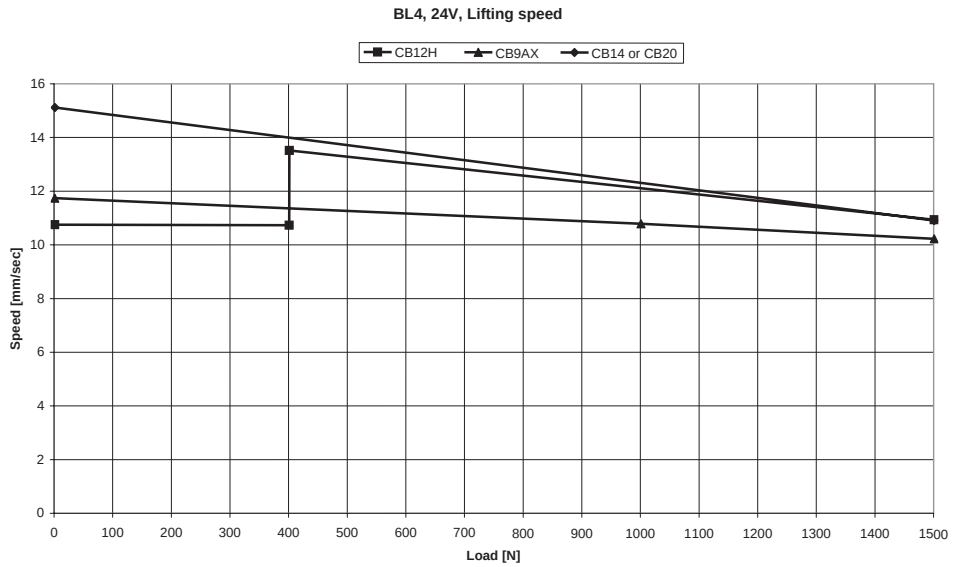


Graphs showing speed and current.

The values shown represent a single BL4 measured in a configuration of 2 BL4's (simultaneous drive) and a CB9 (AF, AG, AH), a CB12H (in the BL4 compatible version) a CB14, or OPENBUS™ control boxes e.g. CB20.

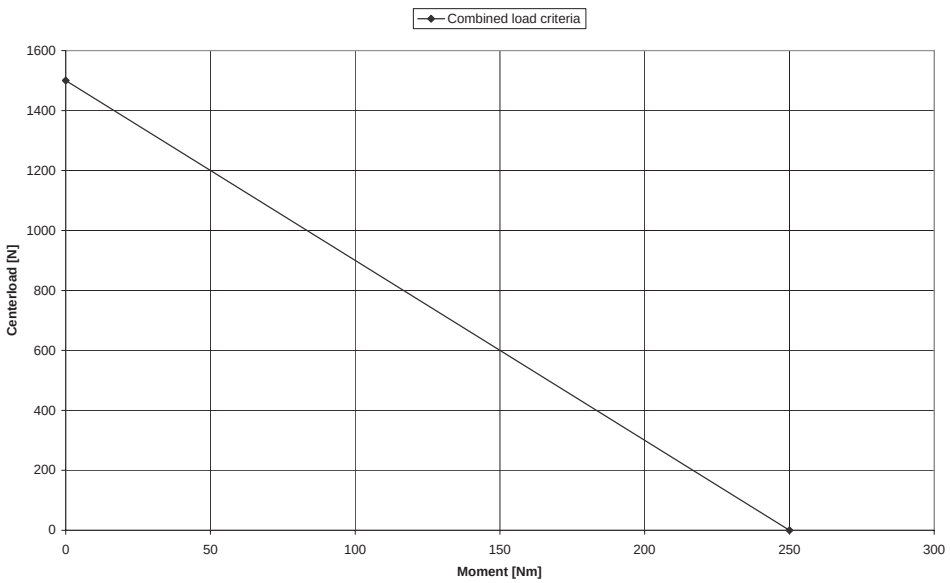
The CB9 and CB12 are with a CB14 transformer fitted.





Please note that there can be a variation as to when the CB12 turbo comes into operation.

Graph showing the permittable combinations between moment and centerload.



PRODUCT DATA SHEET

DL1
DESKLIFT

Features:

- *Max. thrust: up to 1600 N (per leg)*
- *Max. speed: up to 43 mm/sec. unloaded with CBD3*
- *Standard installation dimensions : 345, 445, 545, 573, 595, and 645 mm*
- *Standard stroke length: 200, 300, 400, 428, 450, and 500 mm*
- *Colour: Black powder painted outer tube, zinc plated inner tube, and cast aluminium motor housing or all parts black*
- *Low noise level*
- *Separate motor cables (black: 1000, 2000, or 2300 mm)*
- *With or without mounting bracket for crossbar*
- *2 different standard spindle pitch versions (9 and 15 m pitch)*
- *Compact design where the guide and actuator functions are an integrated unit*
- *Built-in limit switches (not adjustable)*
- *Dimension column: 50 x 80 mm*
- *Dimension motor housing: 187 x 97 x70 mm*
- *Bending moment: My = max. 1350 Nm static, max. 200 Nm dynamic*
- *Brake 3 x max. load*
- *Typical current consumption: 3.5 amp. at max. thrust (per DL1)*
- *Hall sensor (enables parallel drive with CBD3)*

Usages:

- *Single or parallel drive*
- *Duty cycle: 10% ~ 6 min. per hour or 2 min. at continuous use at full load*
- *Ambient temperature: +5°C to + 40°C*
- *Compatible with control box CBD3 and the controls: DP, DC, DPA, and WDP*
- *Approved according to EN 60335-1 and UL 73*
- *Storage and transport temperature: -20°C to + 70°C*

The DL1 DESKLIFT® is a compact lifting unit where the guide and the actuator functions are integrated. This feature ensures an optimum freedom of design.

Each DESKLIFT lifting unit is equipped with a motor. The DESKLIFT lifting column can either be part of a single 2, 3 or 2 + 2 parallel system or with the CBD3 even a multi-parallel system. The 2, 3 and 2 + 2 parallel drive is ensured by means of a special software in the CDB3 that compensates for uneven loads on the desk.

The control box is designed with soft start/stop function.

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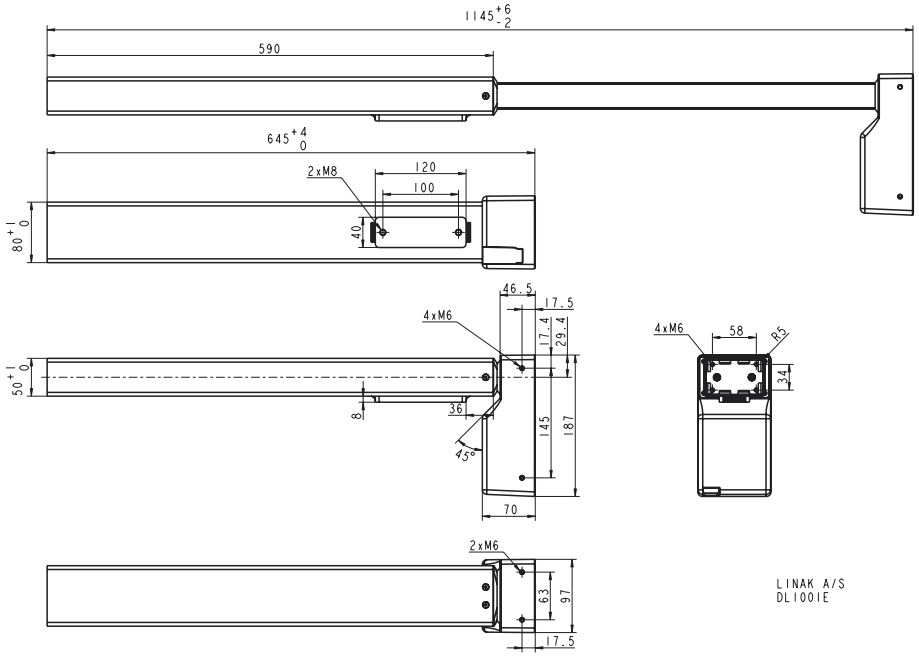
Dimensions

At a fully retracted length of only 645 mm +4/-0 mm and a stroke length of 500 mm ±2 mm it is possible for a standard system to obtain an adjustment interval of the tabletop of e.g. 680 – 1180 mm.
Thus the desk can be used for sitting as well as standing work.



Mounting guidelines for the DL1
The aluminium motor housing is supplied with 6 pcs. M6 threaded holes meant for mounting on the desk frame. We advise you to fasten the desk frame by means of 6 pcs. M6 screws of a good quality and a suitable length, which must not go further into the motor housing than max.15 mm. The threaded holes are rolled into the aluminium housing for which reason the thrust moment must not exceed max. 7.5 Nm.

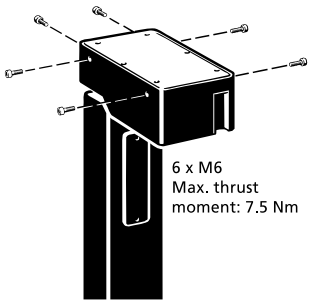


Figure 1

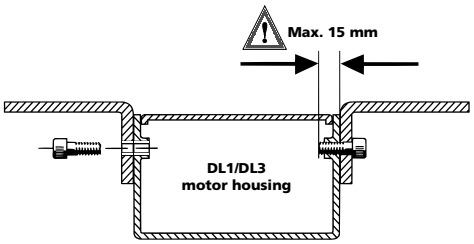


Figure 2

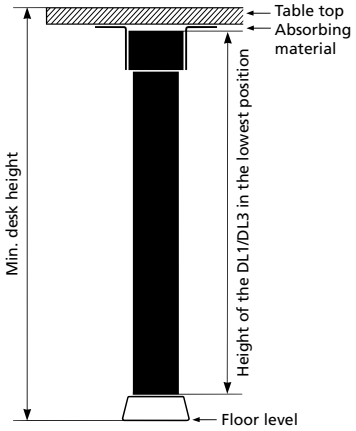
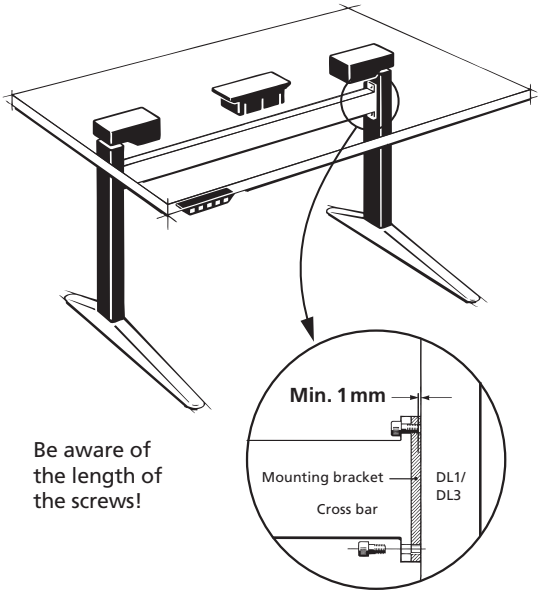


Figure 3

To avoid damage to the lifting unit there must be min. 1 mm space between the end of the 2 pcs. M8 screws for the mounting bracket and the surface of the lifting unit. If the screws are too long they will come into contact with the inner parts. This will result in an irregular operation or even damage the lifting unit. (See drawing).



Be aware of the length of the screws!

LINAK recommends that the DESKLINE® system should be used in push applications.

It is recommended to use all 6 M6 threaded holes to mount the desk frame. The values for the bending moments of the lifting units are only valid if the desk frame is mounted in this way. Tests with fixing the motor housing only by means of the 4 threaded holes have proved that this is not enough to obtain a sufficient torsional stability of the desk.

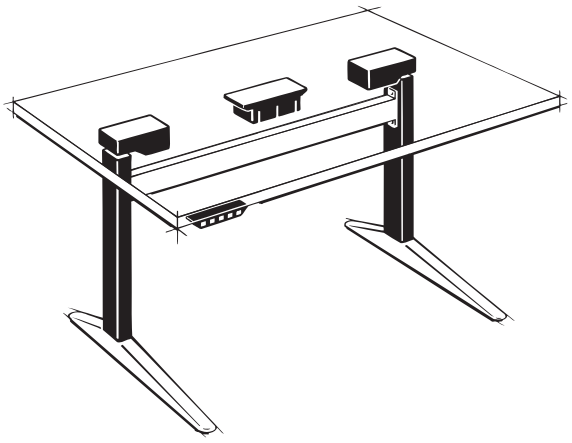
As the tabletop amplifies the sound we advise you to place a vibration/shock-absorbing material between the tabletop and the table frame.

At a tabletop thickness of 25 mm it is necessary that the lowest edge of the lifting unit is mounted max. 10 mm above floor level to obtain a desk height of only 680 mm in the lowest position. If e.g. 2 mm vibration absorbing material is placed between the tabletop and the table frame the lifting unit must be mounted max. 8 mm above floor level.

The above can be obtained by mounting the lifting unit on a 6-8 mm bottom plate by means of 4 pcs. of M6 countersunk screws. We recommend you to use screws of min. quality 8.8.

The thrust moment must not exceed 10 Nm.

Placement of a monitor directly above the motor housing may cause malfunction of the monitor. Magnets inside the motor may interrupt the picture on the monitor depending on the distance between the monitor and the motor and the type of monitor. If this is the case the problem may be solved by placing an iron plate/tube or another magnetic material, somewhat larger than the motor housing, between the motor and the tabletop.



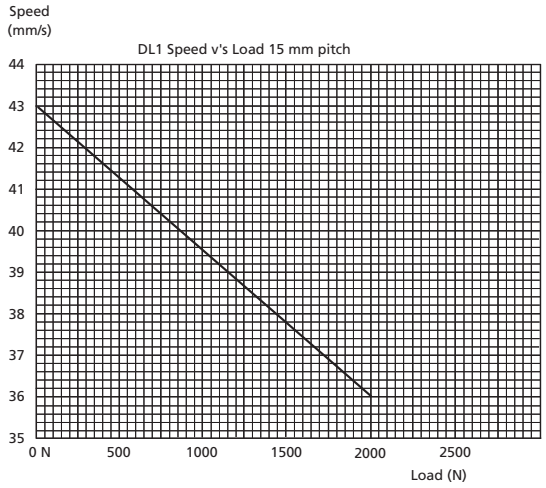
Example of how to mount the DESKLINE® system

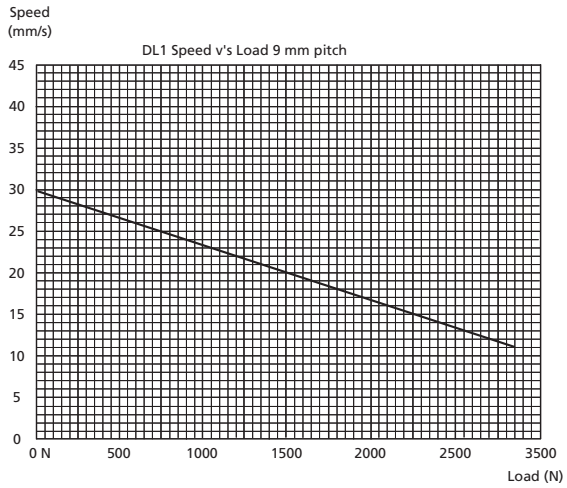
Technical specifications

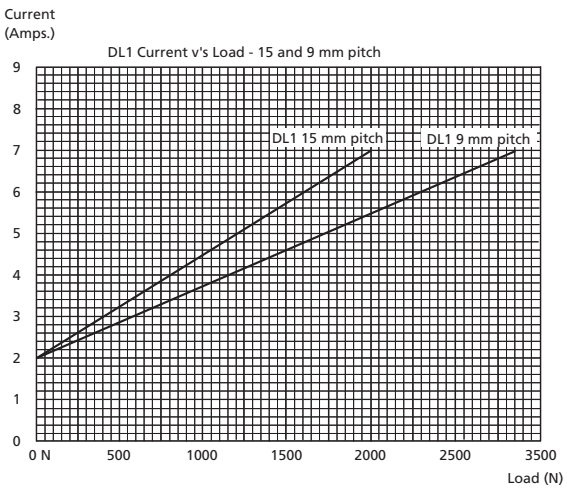
Type	Thrust max. (N) pr. DL1	Self-lock (N) pr. DL1	Speed at 0 load (mm/s)	Duty cycle (%)	Amp. at full load Pr.DL1 (24 V)	Pitch (mm)
DL1	1000	3000	43	10	3.5 A	15
DL1	1600	3000	30	10	3.5 A	9

Above measurements are made in connection with the CBD1/CBD3 control box .

Curves







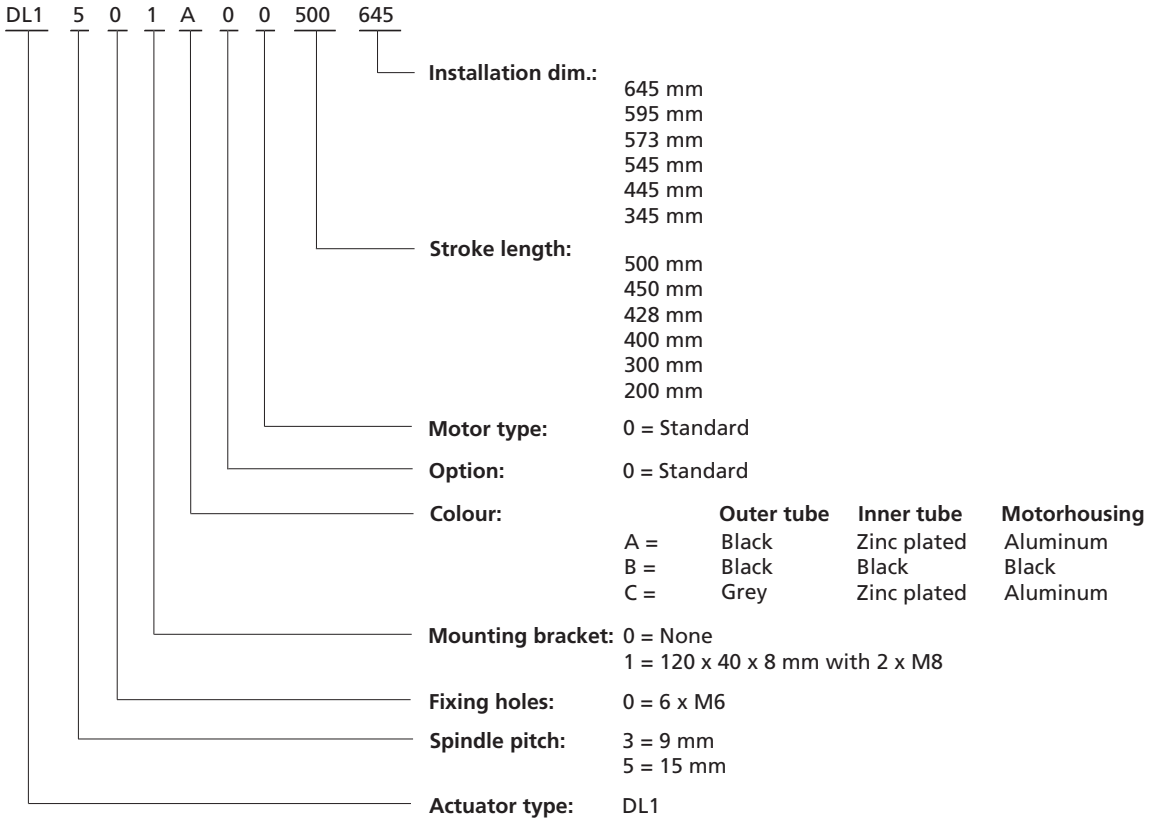
Above data is measured in connection with 2 DL1 lifting units and the control box CBD3. The desk is driving upwards. Load per table (tabletop and table frame) is 31 kg.

Possible combinations:

Installation dimension	Stroke lengths
645 mm	500, 400, 300, 200
595 mm	450, 400, 300, 200
573 mm	428, 400, 300, 200
545 mm	400, 300, 200
445 mm	300, 200
345 mm	200

DL1

Ordering example:



Note: Black/zinc plated colour is a zinc plated oval tube, a black square tube and a cast aluminium motor housing.

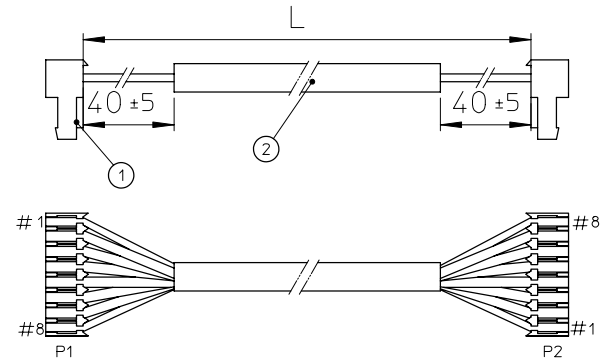
Motor cables must be ordered separately:

- 0567006 900 mm straight black cable
- 0567007 1800 mm straight black cable
- 0567015 2300 mm straight black cable
- 0567025 900 mm straight black cable with cover
- 0567027 1800 mm straight black cable with cover
- 0567028 2300 mm straight black cable with cover

- Order 1 pcs. for a single system
- Order 2 pcs. for 2-parallel systems.
- Order 3 pcs. for 3-parallel systems.
- Order 4 pcs. for 2 + 2-parallel systems

LINAK offers three motor cable lengths and two plug types. It is not possible to order other lengths than these. Please find the cable characteristics below.

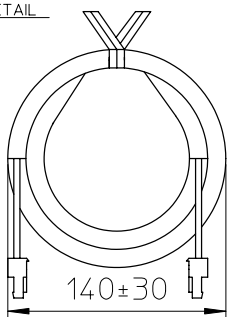
Motor cable dimensions:



CIRCUIT DIAGRAM		
P1	WIRE COLOR	P2
1	BLACK	8
2	BROWN	7
3	RED	6
4	ORANGE	5
5	YELLOW	4
6	GREEN	3
7	BLUE	2
8	VIOLET	1

DRAW. NO.	"L"	COLOR
0567006	900±40	BLACK
0567007	1800±40	BLACK
0567015	2300±40	BLACK

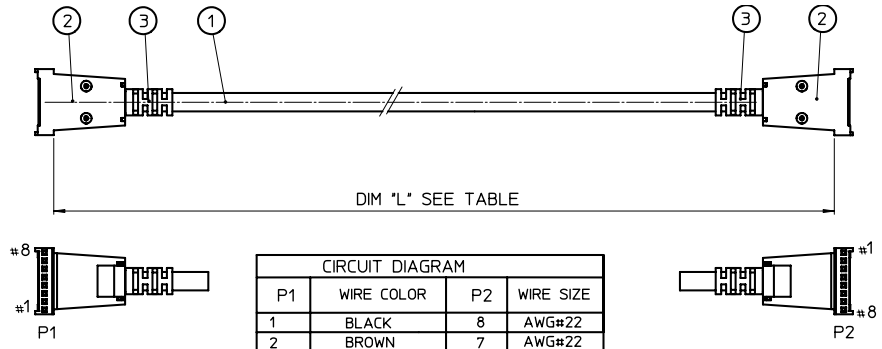
HANK DETAIL



ITEM	Q'TY	DESCRIPTION
1	2	AMP 644083 8 POLE
2	1	ø6,0±0.2 CABLE 8 POLE 8X0.4 MM² WIRE 22AWG

LINAK A/S
0567006A-001B

Motor cable dimensions (with cover):



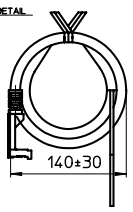
CIRCUIT DIAGRAM			
P1	WIRE COLOR	P2	WIRE SIZE
1	BLACK	8	AWG#22
2	BROWN	7	AWG#22
3	RED	6	AWG#28
4	ORANGE	5	AWG#28
5	YELLOW	4	AWG#28
6	GREEN	3	AWG#28
7	BLUE	2	AWG#22
8	VIOLET	1	AWG#22

ITEM	Q'TY	DESCRIPTION
1	1	CONNECTOR: JACKED : PVC ø5,7 ±0.2 COLOR : SEE CIRCUIT DIAGRAM. MUST PASS LINAK BENDING TEST No.914315. UL RECOGNIZED
2	2	CONNECTOR: TOOLING P/N: 901-922-00 TERMINAL: JS-1105-T
3	2	RUBBER GROMMET: TOOLING P/N: 901-942-00

0567025001A

DRAW. NO.	"L"	COLOR
0567025	900±40	BLACK
0567027	1800±40	BLACK
0567028	2300±40	BLACK

HANK DETAIL



If other cable lengths are required, it is necessary for the customer to produce it. The 8-pole plug (AMP type 644083) must be used (see above drawing).

PRODUCT DATA SHEET

DL2
DESKLIFT

Features:
- *Thrust: up to 1000 N per DL2*
- *Speed: up to 50 mm/s unloaded*
- *Installation dim.: 645 mm, 650 mm or 655 mm (depending on end plates)*
- *Standard stroke length: 500 mm ± 4 mm*
- *Colour: Natural anodized aluminium profiles and black painted end plates*
- *Low noise level*
- *Compact and mounting friendly design*
- *Built-in limit switches (not adjustable)*
- *Dimension column: 147 x 194 mm*
- *Dimension 8 mm end plates: 160 x 244 x 8 mm*
- *7 amp. at max. thrust*
- *Each column is fitted with a 740 mm ± 60 mm straight black cable with an 8-pole AMP plug*
- *Dynamic bending moment (at 100% stroke length):*
  My+/Mx+ = 250 Nm and My-/Mx- = 200 Nm

Options:
- *Mounting bracket (order number 0578006)*
- *Hall sensors to ensure memory drive*
- *CBD2 mounted in the DL2*

Usage:
- *Single drive*
- *Duty cycle: Max. 5% ~ 1 min./19 min., max. 1 min. at continuous use followed by 19 min. pause*
- *Ambient temperature: +5°C to +40°C*
- *Compatible with control box CBD2 and the controls DP, DPA, DC, and WDP*
- *Approved according to EN 60335-1 and UL 73*
- *Storage and transport temperature -20°C to +70°C*

The DL2 column is designed for applications in which it can be operated as a single column with or without memory.

The DL2 lifting column is the ideal choice for duties such as height adjustment on computer workstations, workbenches or a wide selection of other duties.

Inside each column is a modified LA31 actuator, which ensures fast speed.

The DL2 lifting column with hall sensors is compatible with the CBD2 control boxes with memory.

The column is only available for single operation.

Compared to the LINAK lifting columns LP2, LP3 and lifting unit DL1 the DL2 combines features such as high speed and optimum design freedom due to only one column, at a competitive price. This makes the column an optimum choice.

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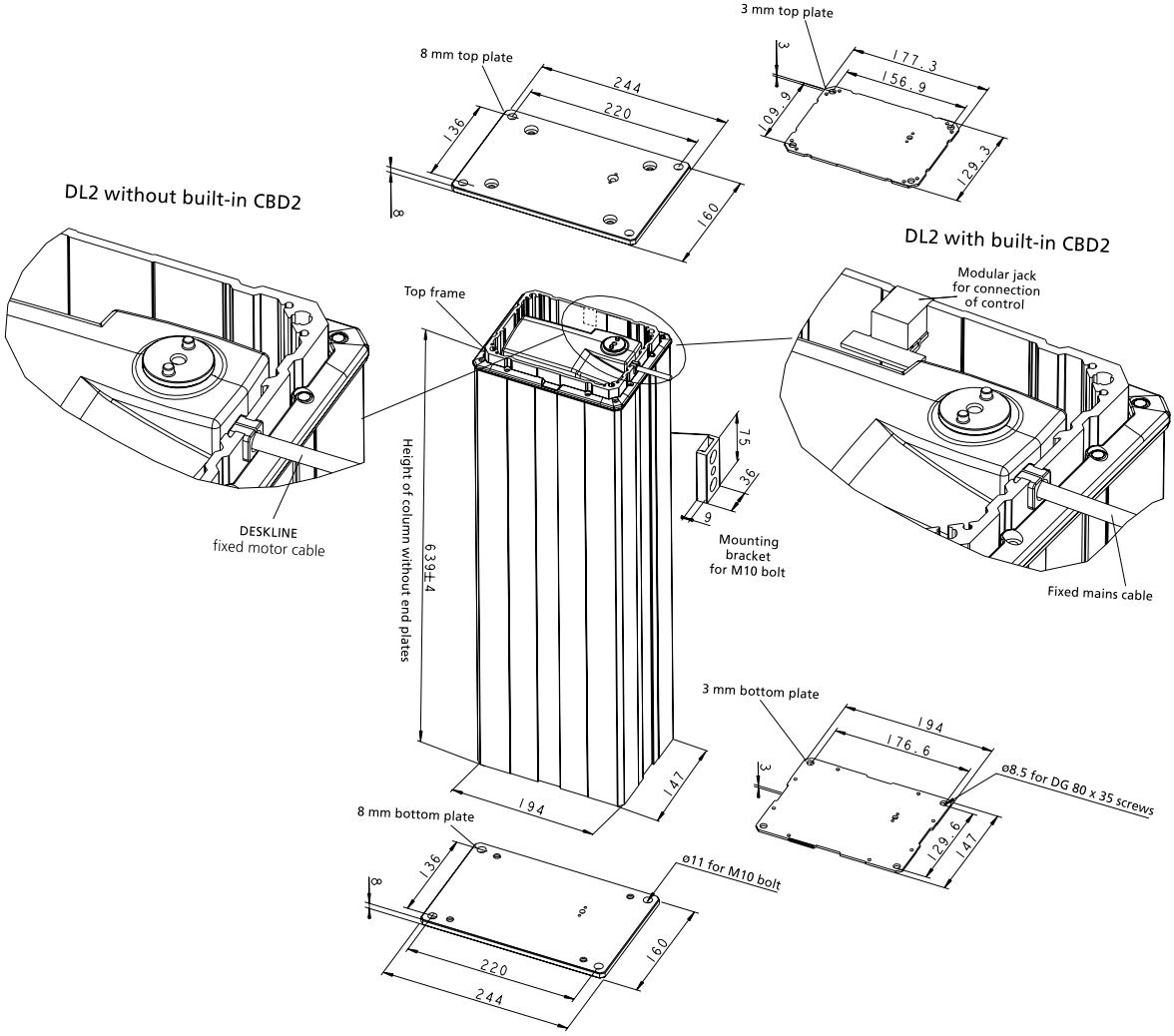
DL2 dimension drawing:



LINAK A/S supplies the lifting column with either 8 mm or 3 mm end plates. The DL2 can be prepared for built-in CBD2. The min. installation dimension for a DL2 with built-in CBD2 is 436 / 426 mm, depending on the chosen end plates.

Installation dimension:
The height of the column without the end plates + 2 x the thickness of the required end plates.
E.g.: Installation dimension = 639 + (2 x 8) = 655 mm.

Technical specifications:

Type	Thrust max. (N)	Self-lock max. (N)	Max. speed at 0 load (mm/s)	Stroke length (mm)	Installation dimension (depending on chosen end plates) (mm)	Duty cycle (%)	* Amp. at full load (24 V)	Max. dynamic Bending moment** (100% stroke) Mx+ My+	Mx- My-
DL2	1000	1000	50	500 ± 4 mm	645, 650 or 655 mm ± 4 mm	5	7.0 A	250 Nm	200 Nm

Above data: Measurements are made in connection with control box CBD2N.
* Current consumption for 1 x DL2 (typical value)
** The column can be loaded with Mx+, My+ = 500 Nm and Mx-, My- = 330 Nm over the first 80% of the stroke.

DL2

Ordering example:

DL 2 4 0 0 A 0 0 500 655

Installation dim.: 655 = S+155 mm incl. 2 pcs. 8 mm end plates
650 = S+150 mm incl. 1 pcs. 8 mm + 1 pcs. 3 mm end plates
645 = S+ 145 mm incl. 2 pcs. 3 mm end plates

Stroke length: 500 mm

Cable type: 0 = Without built-in CBD2
All cables without earth (2P) Class 2
1 = Straight EU cable, Grey, 3.2 m
2 = Straight EU cable, Black, 3.2 m
3 = Straight UK cable, Black, 3.2 m
4 = Straight UL cable, Black, 3.2 m
5 = Straight AUS cable, Black, 3.2 m
6 = Straight Japan cable, Black, 3.2 m

CBD type: 0 = Without built-in CBD2*

A =	Built-in	CBD2	N	0	01	1	0	0 - 3	9
C =	Built-in	CBD2	E	0		1	0	0 - 3	9
D =	Built-in	CBD2	E	0	00	1	0	D - 3	9
I =	Built-in	CBD2	N	0	00	1	0	0 - 4	9
K =	Built-in	CBD2	E	0	00	1	0	0 - 4	9
L =	Built-in	CBD2	E	0	00	1	0	D - 4	9
M =	Built-in	CBD2	N	0	00	1	0	0 - 5	9
R =	Built-in	CBD2	E	0	00	1	0	0 - 5	9
S =	Built-in	CBD2	E	0	00	1	0	D - 5	9

Colour: A = Natural anodized aluminium profile, Grey top frame
B = Natural anodized aluminium profile, Black top frame

Positioning: 0 = None = CBD2 N
H = Hall = CBD2 (memory)

End plates: 0 = 8 mm end plates, black
1 = 3 mm end plates, electro galvanized**
2 = 3 mm top plate and 8 mm bottom plate***
3 = 8 mm top plate and 3 mm bottom plate***

Actuator: 4 = 12 mm pitch
(Fast motor and double-threaded worm gear)

Type: 2 = 2-part aluminium column

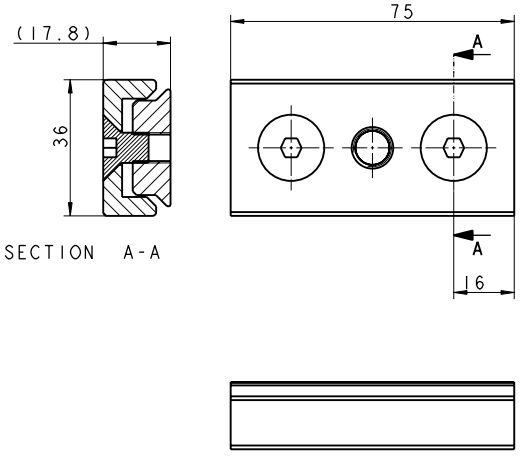
DL: DL = DESKLIFT

* The mains cable:
The DL2 with a built-in CBD is delivered with a fixed mains cable (coiled cable and cable with earth connection is not an option). The cable length will be reduced by 300 mm ±100 mm compared to the standard cable length.

** For mounting of the desk frame the following screws are delivered: 8 x DG 80 x 35.

*** For mounting of the desk frame the following screws are delivered: 4 x DG 80 x 35.

Mounting bracket (order no.: 0578006)
The mounting bracket can for example be used for placement of an extra actuator (tilt funtion), customized cover (for encapsulation of the DL2), control box, computer etc.



Dynamic bending moment:

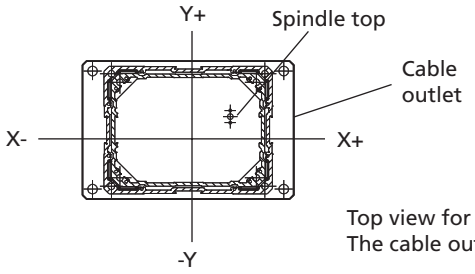


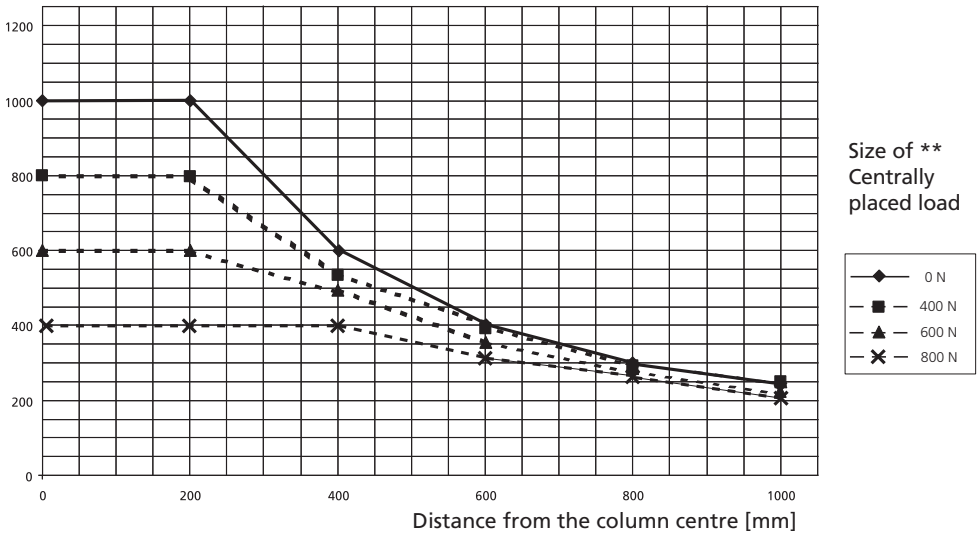
Figure 1

Top view for identification of the directions for the bending moment. The cable outlet is at the X+ side of the column.

X+, Y+ dynamic bending moment*:

The curves show the size of the load that can be placed within a specific distance from the centre of the column.

Load [N]



* See above figure for identification of the X and Y directions.
** A centrally placed load gives no bending moments on the column.

Shows the max. load at a specific distance from the centre of the column.

Example with a centrally placed load of 400 N.
This curve shows the max. load which can be placed in a specific distance from the centre of the column in addition to the 400 N.

Example with a centrally placed load of 600 N.
This curve shows the max. load which can be placed in a specific distance from the centre of the column in addition with the 600 N.

This curve shows the max. load which can be placed in a specific distance from the centre of the column in addition to the 800 N.

Example:
The centrally placed load is 400 N. We want to place a load in a distance of 500 mm from the centre of the column. From the curve it appears that the load may be max. 475 N.

X- and Y- bending moment:

X+ and Y+ curves are used but with a deduction of 50 N.

Example:
The centrally placed load is 400 N. We want to place a load in a distance of 500 mm from the centre of the column. From the curve it appears that the load may be 475 N. With the deduction of 50 N i.e. a max. load of 425 N.

PRODUCT DATA SHEET

DL4
DESKLIFT

Features:
- *Thrust: up to 800 N (per column)*
- *Speed: up to 43 mm/s with CBD4*
- *Standard installation dimension: 560 mm*
- *Standard stroke length: 675 mm*
- *Colour: Black RAL 9005 or grey RAL 9006 "aluminium white"*
- *Low and uniform noise level*
- *Separate motor cables (black: 1000, 2000, or 2500 mm)*
- *Bending moment: max. 1350 Nm static, max. 150 Nm dynamic*
- *Typical current consumption: 7.8 amp. at max. thrust (per DL4)*
- *Hall sensor (enables parallel drive with CBD4)*
- *With or without mounting bracket for crossbar in parallel system*
- *Double acting brake for increased self-locking*

Option:
- *Customer colours*

Usages:
- *Single or parallel drive (up to 16 legs in a multi-parallel system)*
- *Duty cycle: 10% or 6 min./hour or max. 2 min. at continuous use at full load*
- *Ambient temperature: +5°C to +40°C*
- *Compatible with control box CBD4 and the controls DP, DPA, and WDP*
- *Approved according to EN 60335-1 and UL 962*
- *Storage and transport temperature: -20°C to +70°C*

The DESKLIFT DL4 is a compact lifting unit with a small installation dimension where the guide and actuator functions are integrated. The whole actuating unit with the motor is placed in the column itself, making it an inline unit ensuring an optimum freedom of design, for the desk.

The DL4 is a 3-part telescopic column with a similar movement of the middle profiles in a parallel system.

The parallel drive is obtained by means of special software in the CBD4 control box that also compensates for an uneven load on the desk. In general the DL4 can either be part of a single, 2, 3 or 4 parallel system. Or even a multiparallel system.

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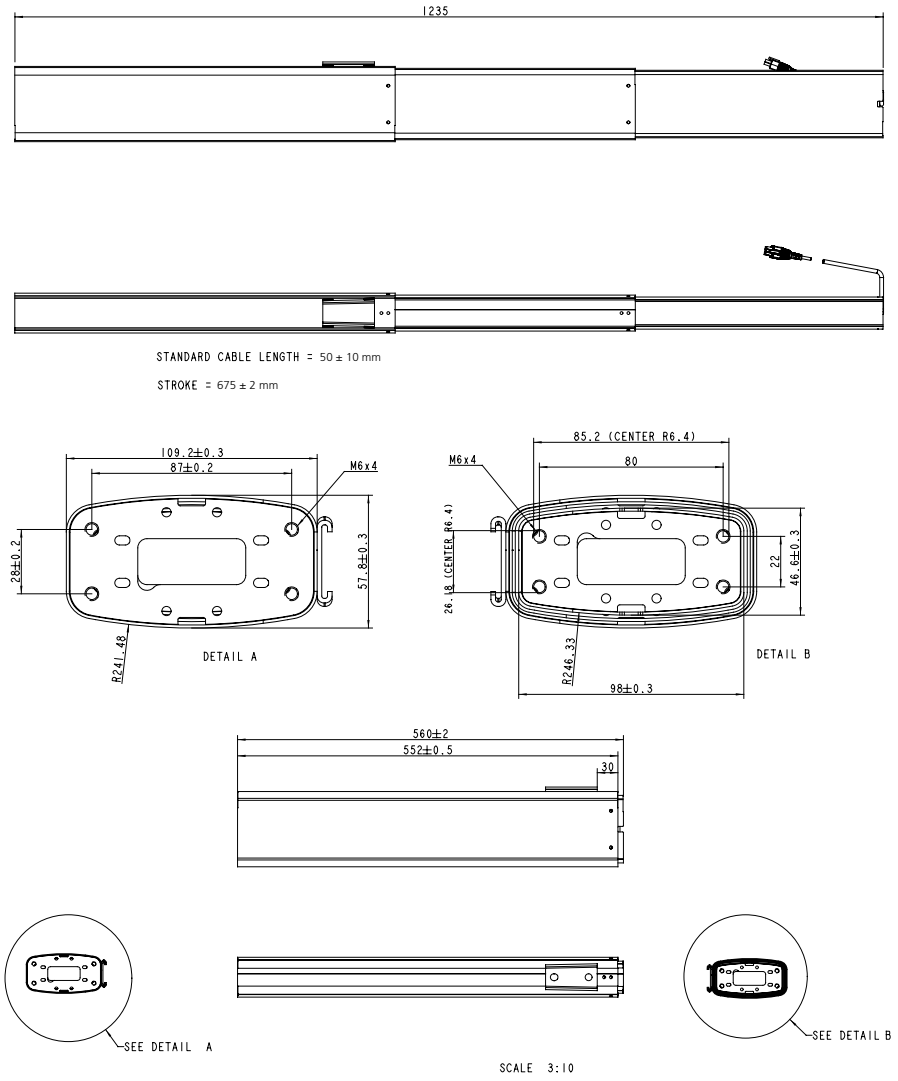
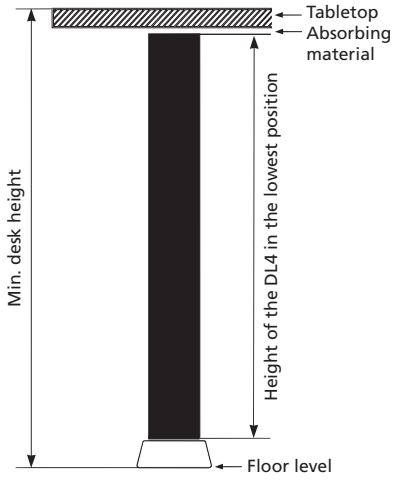
DL4 dimensions:
At a fully retracted length of 560 mm and a stroke length of 675 mm it is possible for a standard system to obtain an adjustment interval of the tabletop of e.g. 600 - 1275 mm. Therefore, the desk can be used for sitting as well as standing work.





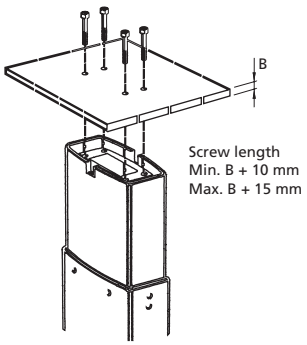


Figure 1

Example of how to mount the DESKPOWER® system

Placement of a monitor directly above the leg may cause malfunction of the monitor. Magnets inside the motor may interrupt the picture on the monitor depending on the distance between the motor and the monitor and the type of monitor. If this is the case the problem may be solved by placing an iron plate/tube or another magnetic material, somewhat larger then the DL4, between the motor and the desktop.

DL4

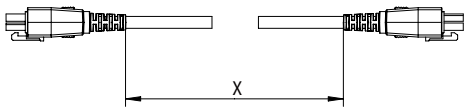
Ordering example:

DL4 0 0 0 B 0 0 675 560

Installation dim.	560 mm
Stroke length	675 mm
Motor type	0 = Standard 43 mm/s
Option	0 = Standard
Colour	A = Grey (RAL 9006) B = Black (RAL 9005)
Mounting bracket	0 = none 1 = Standard bracket
Standard	0 = Standard
Standard	0 = Standard
Type	DL4

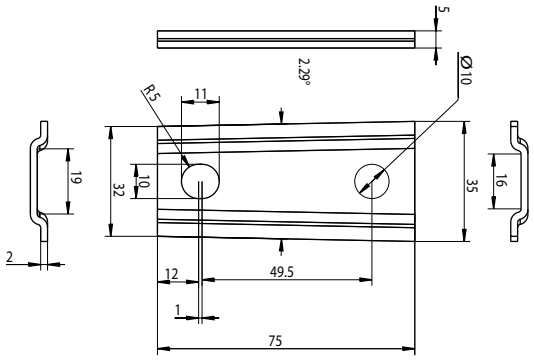
Motor cables must be ordered separately

Motor cables:



Ordering number: 0617100 (1000 mm black motor cable)
0617200 (2000 mm black motor cable)
0617250 (2500 mm black motor cable)

Bracket for crossbar:



Ordering number for crossbar brackets (box containing 100 pcs.): 0611871

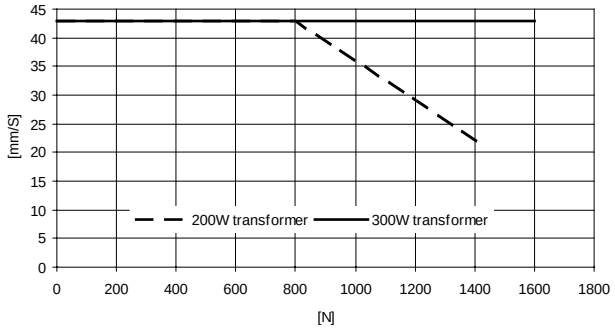
Technical specifications:

Type	Thrust max. (N) per DL4	Self-lock (N) per DL4	Speed at 0 load (mm/s)	Duty cycle (%)	Amp. at full load in connection with CBD4	Transformer type: 2P
DL4	700	2400	43	10	7.8	200W
DL4	800	2400	43	10	7.8	300W

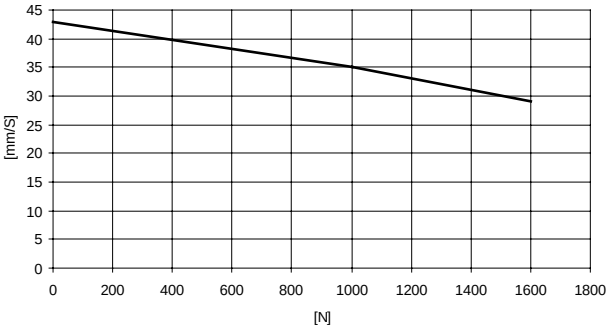
Above measurements are made in connection with control box CBD4

Speed and current curve

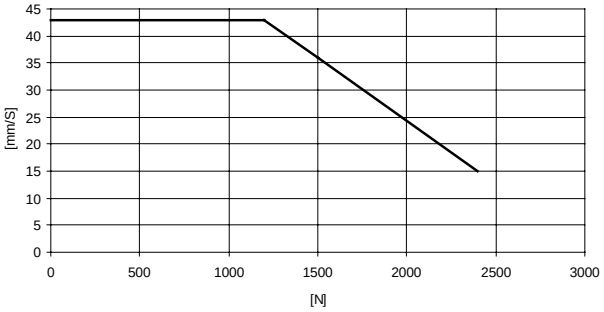
2 x DL4 equally loaded with CBD4



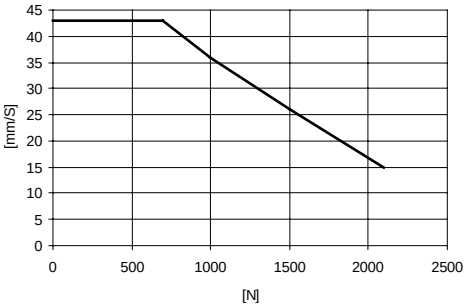
2 x DL4 equally loaded with CBD5



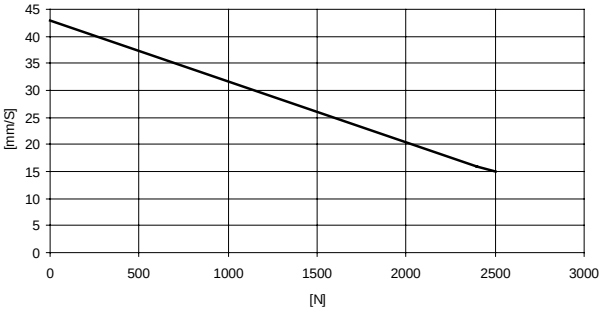
3 x DL4 equally loaded with CBD4



3 x DL4 equally loaded with CBD5



4 x DL4 equally loaded with CBD4 adv.



PRODUCT DATA SHEET

DESKLIFT DL5

Features:

- *Compact design where guide and actuator function are an integrated unit*
- *Short cable mounted on DL5 for connection to CBD4/CBD5 with separate DESKLINE® motor cable*
- *Max. thrust 800 N (per leg)*
- *Max. speed: 38 mm/sec.*
- *Installation dimension 645 mm or 445 mm (short variant)*
- *Stroke length 500 mm or 300 mm (short variant)*
- *Dimensions column: 50 x 80 mm (outer tube) and 43,5 x 73,5 mm (inner tube)*
- *Dimension motor housing: 177 x 97 x 46 mm*
- *Bending moment: My = max. 150 Nm dynamic*
- *Black powder painted square tubes and motor housing (RAL 9005, gloss 30) or grey powder painted square tube and motor housing (RAL 9006, gloss 30)*
- *Low noise level*
- *Hall sensor enables parallel drive with CBD4/CBD5*
- *Mounting bracket for crossbar in parallel system (40 x 120 mm)*

Options

- *Without mounting bracket*
- *Customised colours*

Usage

- *Duty cycle: 10% ~ 6 min. per hour or 2 min. at continuous use at full load*
- *Ambient temperature: +10° to +40° C*
- *Compatible with DESKLINE® CBD4 control box*

The DESKLIFT DL5 is a compact 2-part lifting column, which combines the guide and the actuator function. The DL5 column is a further development of the DL1 column. DL5 has the same outer dimensions and mounting holes as DL6, which makes them compatible.

The DL5 system is controlled by the CBD4 or the CBD5 control box ensuring optimal parallel drive and a pleasant low noise level. The DL5 is available as a single unit or for 2, 3 or 4 parallel systems or even in a multi-parallel system with up to 16 columns in parallel.

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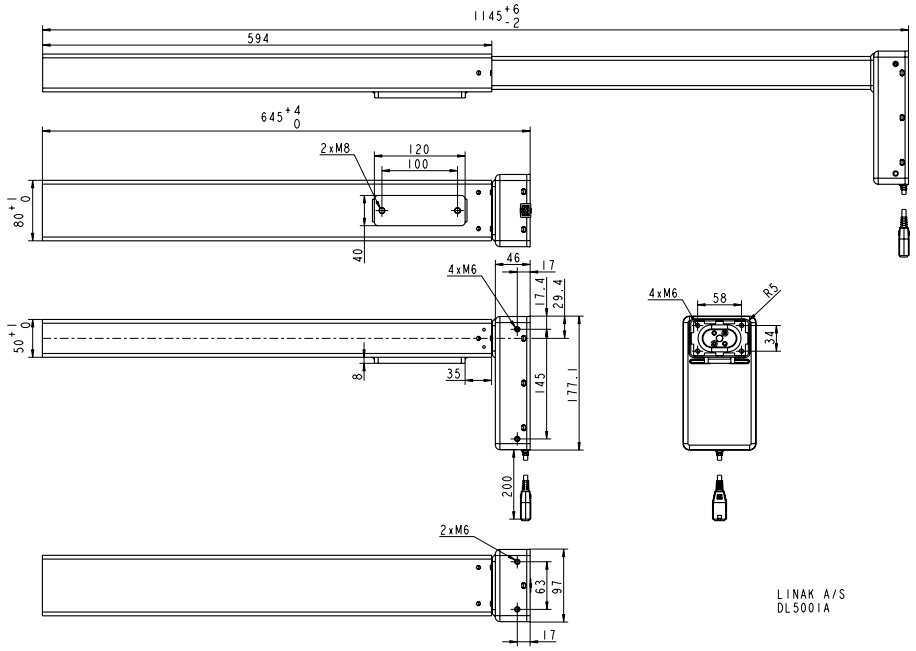
Dimensions:

At a fully retracted length of only 645 mm +4/-0 mm and a stroke length of 500 mm ± 2 mm it is possible for a standard system to obtain an adjustment interval of the table top of e.g. 680 – 1180 mm. Thus the desk can be used for sitting as well as standing work.



Mounting guidelines for DL5

The motor housing is supplied with 6 pcs. of M6 threaded holes meant for mounting on the desk frame. We advise you to fasten the desk frame by means of 6 pcs. of M6 screws of a good quality and a suitable length which must not go further into the motor housing than max.10 mm. The thrust moment must not exceed max. 7.5 Nm.

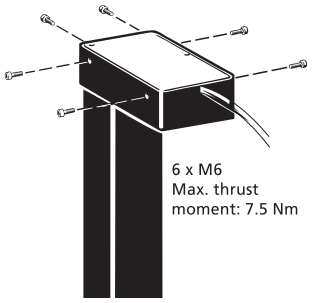


Fig. 1

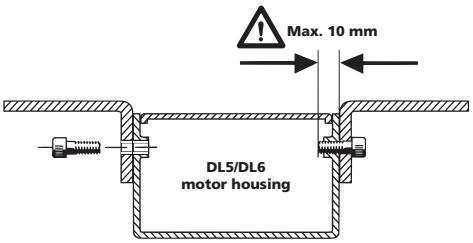
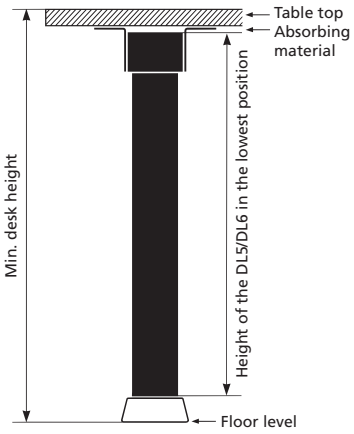
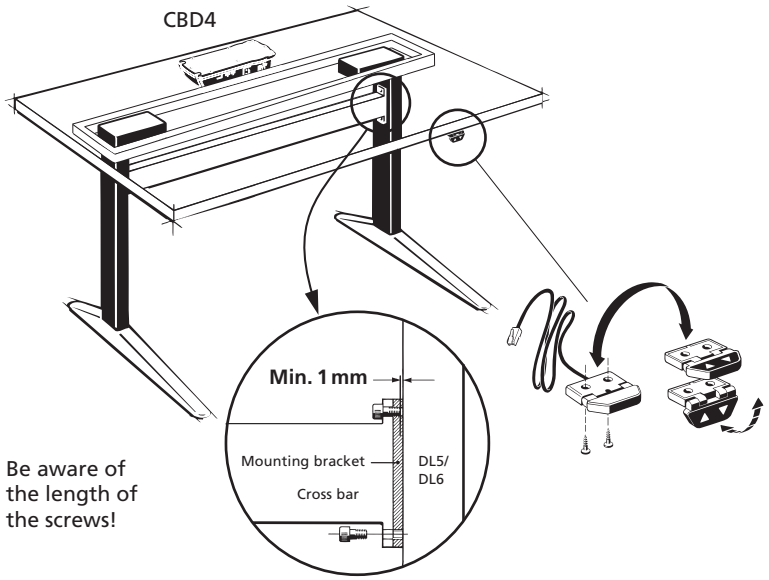


Fig. 2



To avoid damage of the lifting unit there must be at least 1mm space between the end of the 2 pcs. M8 screws for the mounting bracket and the surface of the lifting unit. Screws that are too long will come into contact with the inner parts. This will result in an irregular operation or even damage the lifting unit. (See drawing)



LINAK recommends that the DESKLINE® DL5 system should be used in push applications with the motor housing mounted upwards.

It is recommended to use all 6 M6 threaded holes to mount the desk frame. The values for the bending moments of the lifting units is only valid if the desk frame is mounted in this way. Tests with fixing the motor housing only by means of the 4 threaded holes have proved that this is not enough to obtain a sufficient torsional stability of the desk.

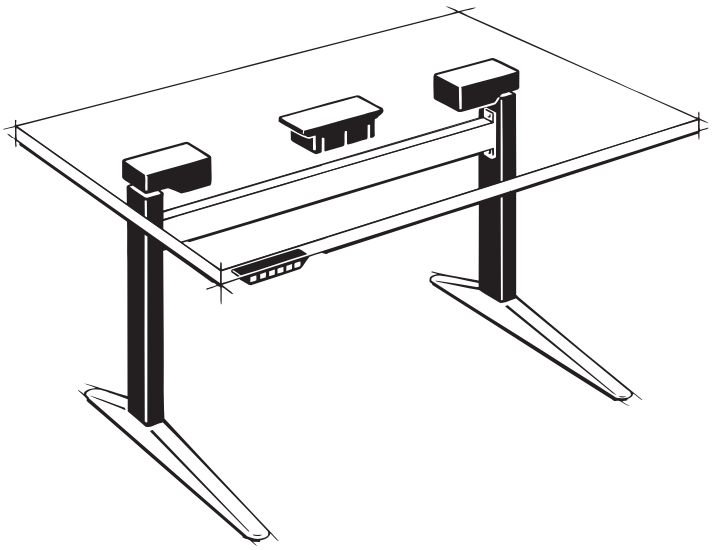
As the tabletop amplifies the sound we advise you to place a vibration/ shock-absorbing material between the table top and the desk frame.

With a table top thickness of 25 mm it is necessary that the lowest edge of the lifting unit is mounted max. 10 mm above floor level to obtain a desk height of only 680 mm in the lowest position. If e.g. 2 mm vibration absorbing material is placed between the table top and the table frame the lifting unit must be mounted max. 8 mm above floor level.

The above can be obtained by mounting the lifting unit on a 6-8 mm bottom plate by means of 4 pcs. of M6 countersunk screws. We recommend you to use screws of min. quality 8.8.

The thrust moment must not exceed 10 Nm in the bottom plate thread.

Placement of a monitor directly above the motor housing may cause malfunction of the monitor. Magnets inside the motor may interrupt the picture on the monitor depending on the distance and type of monitor. If this is the case the problem may be solved by placing an iron plate/tube or another magnetic material, somewhat larger than the motor housing, between the motor and the desk top.



Example of how to mount the DESKLINE® system

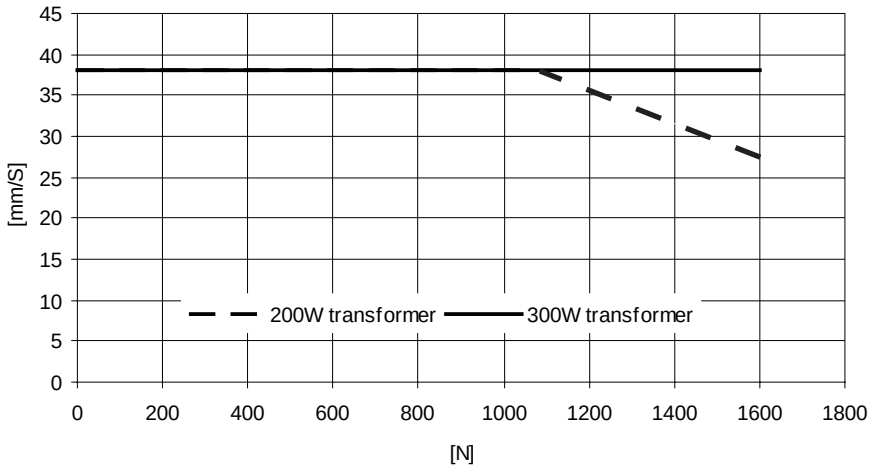
Technical specifications:

Type	Thrust max. (N) per DL5	Self-lock (N) per DL5	Speed at 0 load (mm/s)	Duty cycle (%)	Pitch (mm)
DL5	800	800	38	10	20

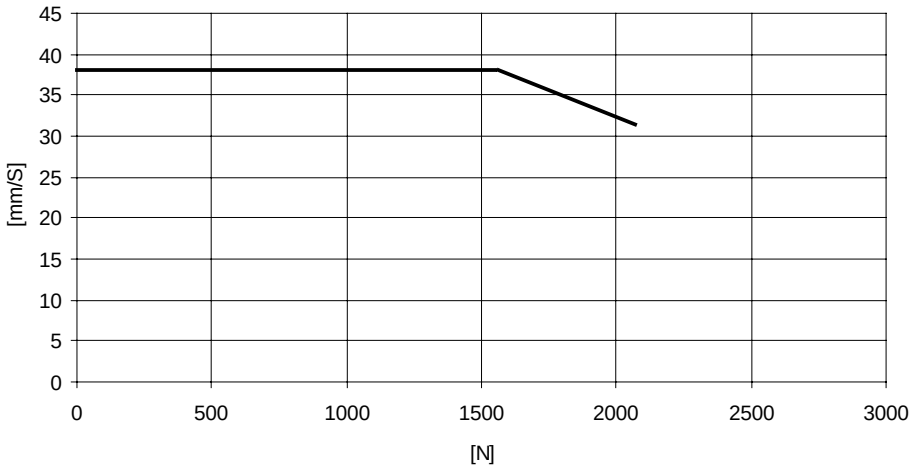
Above specifications are in connection with control box CBD4/CBD5.

Speed/load curve:

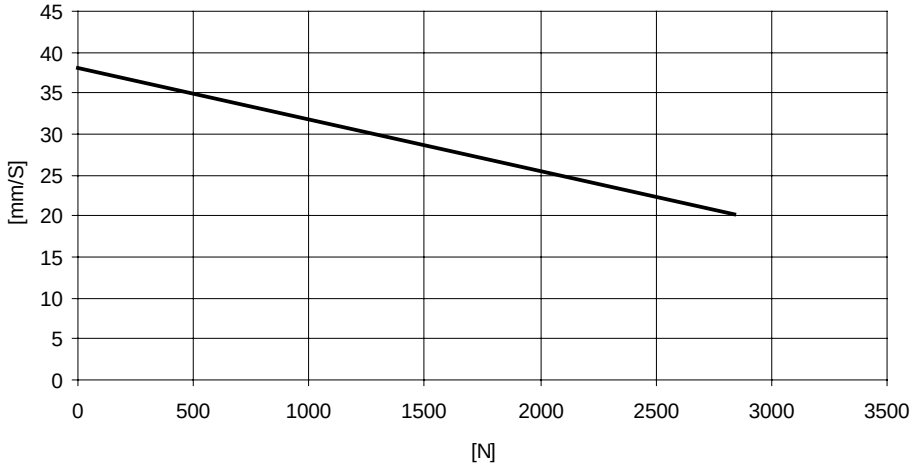
2 x DL5 (equally loaded) with CBD4



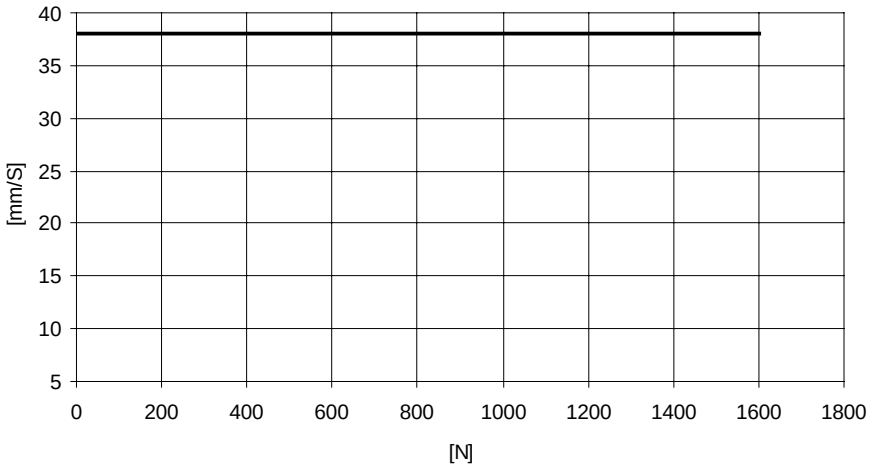
3 x DL5 (equally loaded) with CBD4



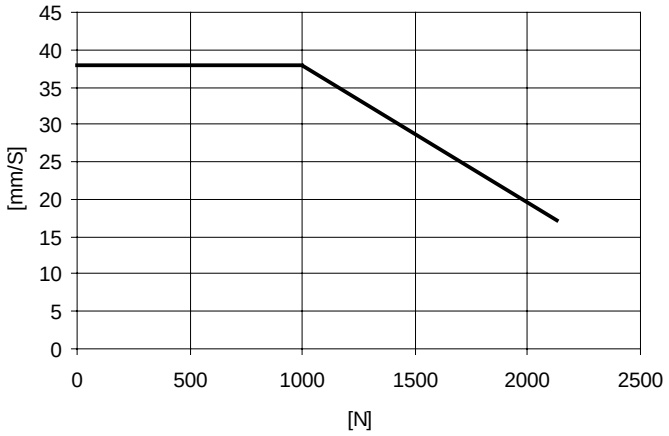
4 x DL5 (equally loaded) with CBD4 adv.



2 x DL5 (equally loaded) with CBD5



3 x DL5 (equally loaded) with CBD5



The above curve applies to a centrally placed load. At moment load there will be an increased friction in the columns, which will reduce the lifting force correspondingly.

The end-stop system in the DL5 is based on a buffer system meaning that you must be aware of the lengths when initialising. The products must be able to drive:

Inwards direction: built-in dimension - tolerances – 5 mm
Outwards direction: built-in dimension + stroke length + tolerances + 5 mm

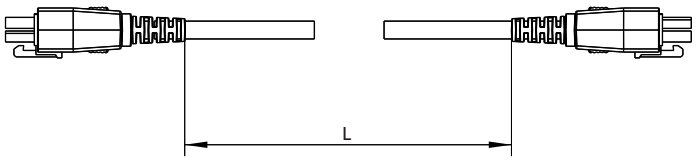
Ordering example:

DL5 0 0 0 A 0 0 500 645

Installation dim.:	645 = 645 mm 445 = 445 mm
Stroke length:	500 = 500 mm 300 = 300 mm
Motor type:	0 = Standard
Option:	0 = Standard
Colour:	A = Grey RAL 9006 B = Black RAL 9005
Monting bracket:	0 = None 1 = 120 x 40 x 8 mm with 2 x M8
Cable:	0 = 200 mm
Spindle type:	0 = 20 mm pitch
Actuator type:	DL5 = Standard

Motor cables must be ordered separately:

Motor cables dimensions:



Motor cables must be ordered separately.

Ordering numbers: 0617100 (L = 1000 mm black motor cable)
0617200 (L = 2000 mm black motor cable)
0617250 (L = 2500 mm black motor cable)

PRODUCT DATA SHEET

DESKLIFT DL6

Features:

- *Compact design where guide and actuator function are an integrated unit*
- *Short cable mounted on DB6 for connection to CBD4 with separate DESKLINE® motor cable*
- *Max. thrust 800 N (per leg)*
- *Duty cycle: 10% ~ 6 min. per hour or 2 min. at continuous use at full load*
- *Max. speed: 38 mm/sec.*
- *Installation dimension 560 mm*
- *Stroke length 650 mm*
- *Dimensions column: 50 x 80 mm (outer profile), 43.5 x 73.5 mm (middle profile) and 37 x 67 mm (inner profile)*
- *Dimension motor housing: 177 x 97 x 46mm (as DL5)*
- *Low noise level*
- *Bending moment: My = max. 150 Nm dynamic*
- *Black powder painted square tubes and motor housing (RAL 9005, gloss 30)*
- *Hall sensor (enables parallel drive with CBD4)*
- *Ambient temperature: +10° to +40° C*
- *Mounting bracket for crossbar in parallel system (40 x 120 mm)*

Options:

- *Grey powder painted square tubes and motor housing (RAL 9006, gloss 30)*
- *Without the mounting bracket*

The DESKLIFT DL6 is specially made to extend the adjustment range of desks. LINAK fulfils even the strongest European standards that demand a range of adjustment from 600 mm up to 1250 mm.

The DL6 is a three part telescopic column with synchronous movement of the middle profile.

DL6 is a compact lifting unit with a small installation dimension where the guide and actuator function are integrated. This feature ensures an optimum freedom of design. The DL6 has the same outer dimensions as the DL5.

Each DESKLIFT lifting unit is equipped with a motor. The DESKLIFT lifting column can either be part of a single, 2, 3 or 4 parallel system.

The parallel drive is ensured by means of special software in the CBD4 that also compensates for an uneven load on the desk

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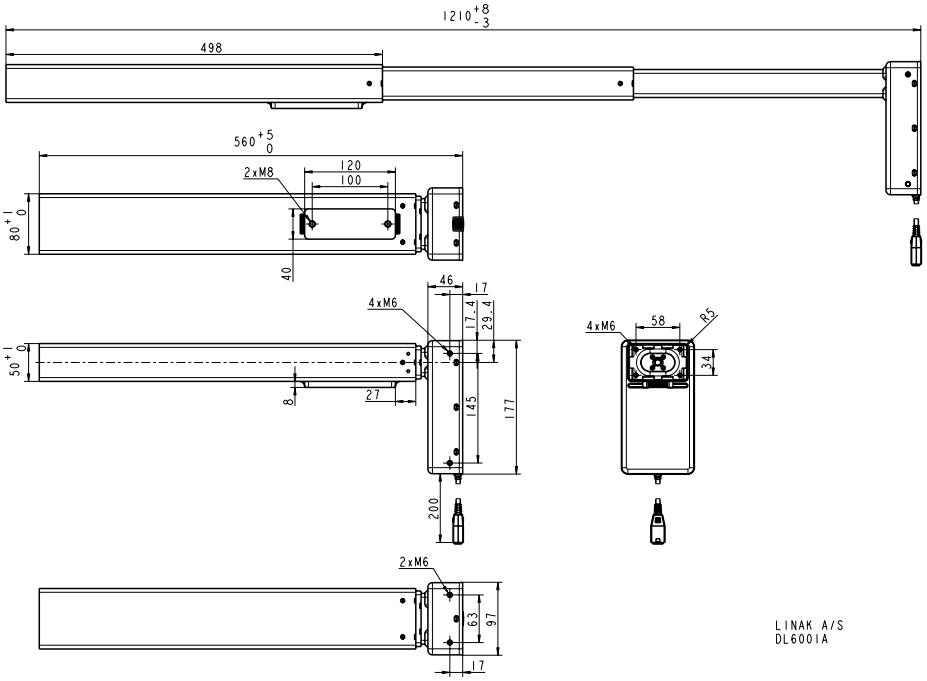
Dimensions:

At a fully retracted length of 560 mm +5/-0 mm and a stroke length of 650 mm ± 3 mm it is possible for a standard system to obtain an adjustment interval of the table top of e.g. 600 – 1250 mm. Thus the desk can be used for sitting as well as standing work.



Beware of the mounting bracket (for the cross bar) it is placed 5.5 mm higher on the DL6 system than on the DL3 system.

Mounting guidelines for DL6

The motor housing is supplied with 6 pcs. M6 threaded holes meant for mounting on the desk frame. We advise you to fasten the desk frame by means of 6 pcs. M6 screws of a good quality and a suitable length, which must not go further into the motor housing than max.10 mm. The thrust moment must not exceed 7.5 Nm.

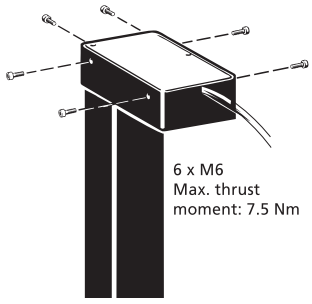


Fig. 1

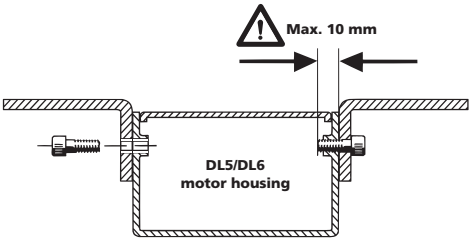


Fig. 2

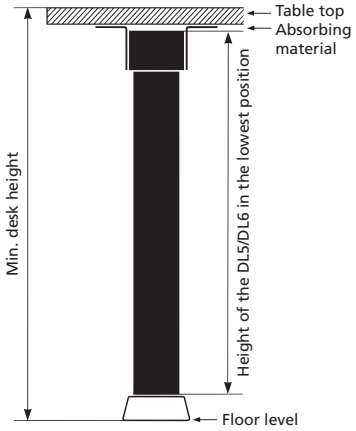


Fig. 3

Mounting guidelines for DL6

To avoid damage of the lifting unit there must be at least min. 1mm space between the end of the 2 no. M8 screws for the mounting bracket and the surface of the lifting unit. Screws that are too long will come into contact with the inner parts.
This will result in an irregular operation or even damage the lifting unit. (See figure 4).

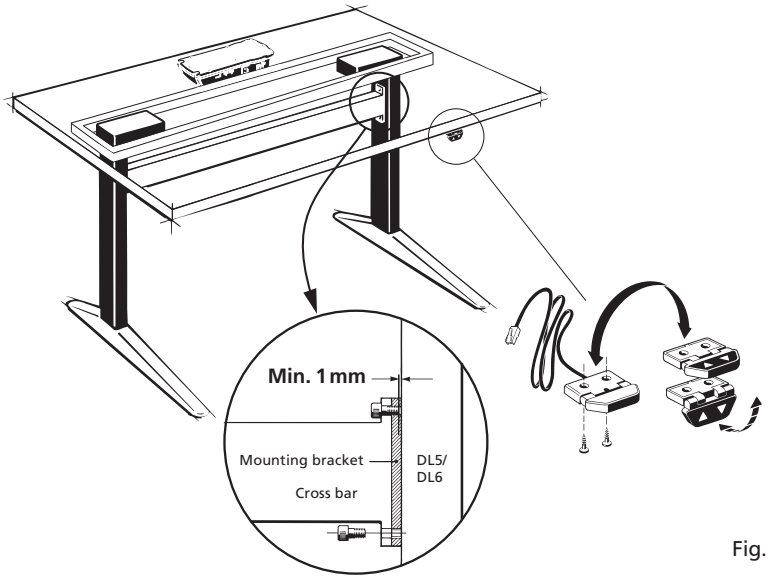


Fig. 4

LINAK recommends that the DESKLINE® DL6 system should be used in push applications with the motor housing mounted uppermost.

It is recommended to use all six M6 threaded holes to mount the desk frame. The values of the bending moments of the lifting units are only valid if the desk frame is mounted in this way. Tests with fixing the motor housing only by means of the 4 threaded holes have proved that this is not enough to obtain a sufficient torsional stability of the desk

As the desk top amplifies the sound we advise you to place a vibration/ shock-absorbing material between the desk top and the desk frame.

With a desk top thickness of 25 mm it is necessary for the lowest edge of the lifting unit to be mounted max. 15 mm above floor level to obtain a desk height of only 600 mm in the lowest position. If e.g. 2 mm vibration absorbing material is placed between the desk top and the desk frame the lifting unit must be mounted max. 13 mm above floor level.

The above can be obtained by mounting the lifting unit on a 6-8 mm bottom plate by means of 4 pcs. of M6 countersunk screws. We recommend you to use screws of min. quality 8.8.

The thrust moment must not exceed 10 Nm in the bottom plate thread.

Placement of a monitor directly above the motor housing may cause malfunction of the monitor. Magnets inside the motor may interrupt the picture on the monitor depending on the distance and type of monitor. If this is the case the problem may be solved by placing an iron plate/tube or another magnetic material, somewhat larger than the motor housing, between the motor and the desktop.

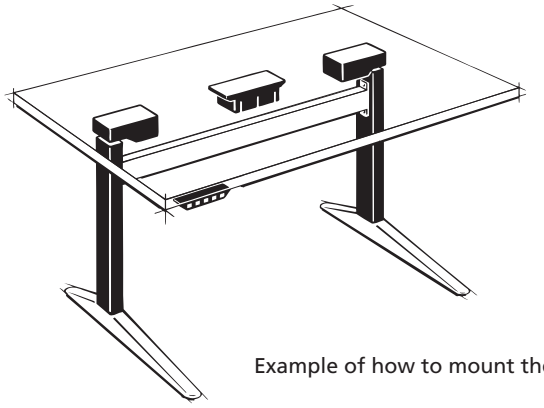


Fig. 5

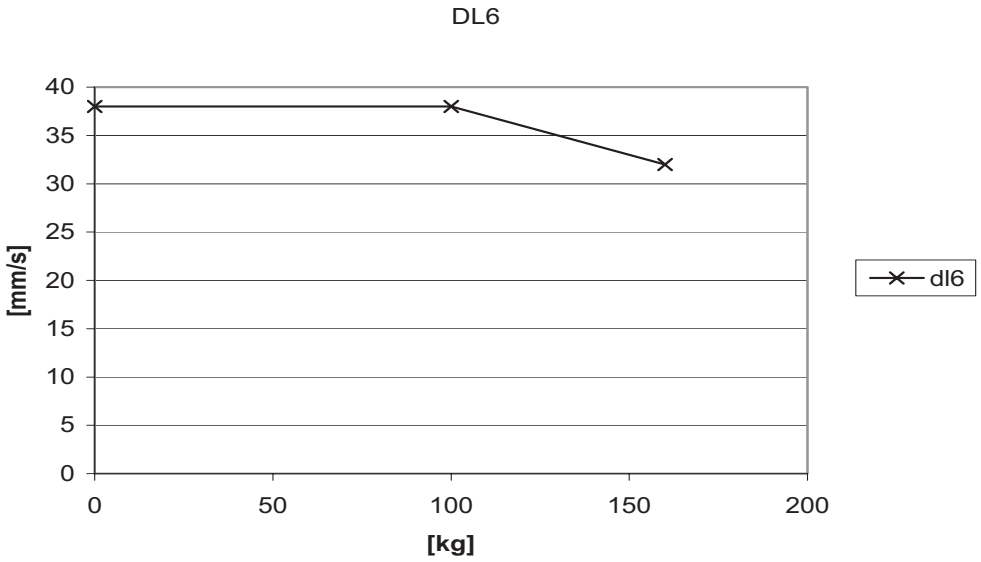
Example of how to mount the DESKLINE® system

Technical specifications:

Type	Thrust Max. (N) per DL6	Self-lock (N) pr. DL6	Speed at 0 load (mm/s)	Duty cycle (%)	Spindle pitch (mm)
DL6	800	700	38	10	10 / 10

Above measurements are made in connection with control box CBD4.

Speed curve:



Above data is measured in connection with two lifting units DL6 and control box CBD4 with the large transformer. The desk is driving upwards.

The above curve applies to a centrally placed load. At moment load there will be an increased friction in the columns, which will reduce the lifting force correspondingly.

The end-stop system in the DL6 is based on a buffer system meaning that you must be aware of the lengths when initialising. The products must be able to drive:

Inwards direction: built-in dimension - tolerances – 5 mm
Outwards direction: built-in dimension + stroke length + tolerances + 5 mm

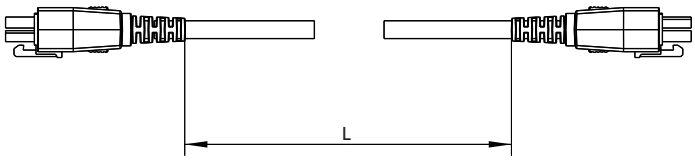
Ordering example:

DL6 0 0 0 A 0 0 650 560

Installation:	560 = 560 mm
Stroke:	650 = 650 mm
Motor:	0 = Standard
Option:	0 = Standard
Colour:	A = Grey RAL 9006 B = Black RAL 9005
Monting:	0 = Without bracket 1 = 120 x 40 x 8 mm with 2 x M8
Cable:	0 = 200 mm
Spindle:	0 = 10/10 mm pitch
Actuator:	DL6

Motor cables must be ordered separately:

Motor cable:



Motor cables must be ordered separately.

Ordering numbers: 0617100 (L = 1000mm black motor cable)
0617200 (L = 2000mm black motor cable)
0617250 (L = 2500mm black motor cable)

Specifications subject to change without prior notice.
It is the responsibility of the product user to determine the suitability of LINAK A/S products for a specific application. LINAK will at point of delivery replace/repair defective products covered by the warranty if promptly returned to the factory. No liability is assumed beyond such replacement/repair.

PRODUCT DATA SHEET

DESKLIFT DL7

Features:

- *Thrust up to 800 N (per leg)*
- *Speed level: 34 mm/sec. with CBD4*
- *Standard installation dimension: 645 mm*
- *Standard stroke length: 470 mm*
- *Colour: All parts black (RAL 9005) or grey (RAL 9006) outer tube, zinc plated inner tube, and grey motor housing*
- *Low noise level*
- *Fixed motor cables 1118 ± 50 mm*
- *Self-locking ability: 600 N*
- *Dimension column: 50 x 80 mm*
- *Dimension motor housing: 356 x 136 x 78 mm*

Usage:

- *Single or 2 parallel drive*
- *Duty cycle: 10% ~ 6 min. per hour or 2 min. continuous use at full load*
- *Ambient temperature: +5° to +40° C*
- *Compatible with DESKLINE® CBD4 or CBD5 control box and controls DP, DPA, and WDP*
- *Will be approved according to EN 60335-1 and UL 73*
- *Storage and transport temperature: -20°C to +70°C*

The DL7 DESKLIFT is the first LINAK basic column, which combines well-proven technology and basic features into a price-performance optimised low-cost 2-part column. The DL7 column is developed for desks where the basic features of an electrical height adjustable desk are required. The DL7 system is primarily intended for 2 parallel applications.

Each DL7 is a true column with motor and based on the stable DL1 ball cage guidance giving stability even though a crossbar is not needed. The upside down construction gives a very compact and clean design and the lack of crossbar ensures a high degree of safety in e.g. home office applications. The DL7 column is compatible with the CBD4 and CBD5 control boxes giving a wide range of options and all standard controls.

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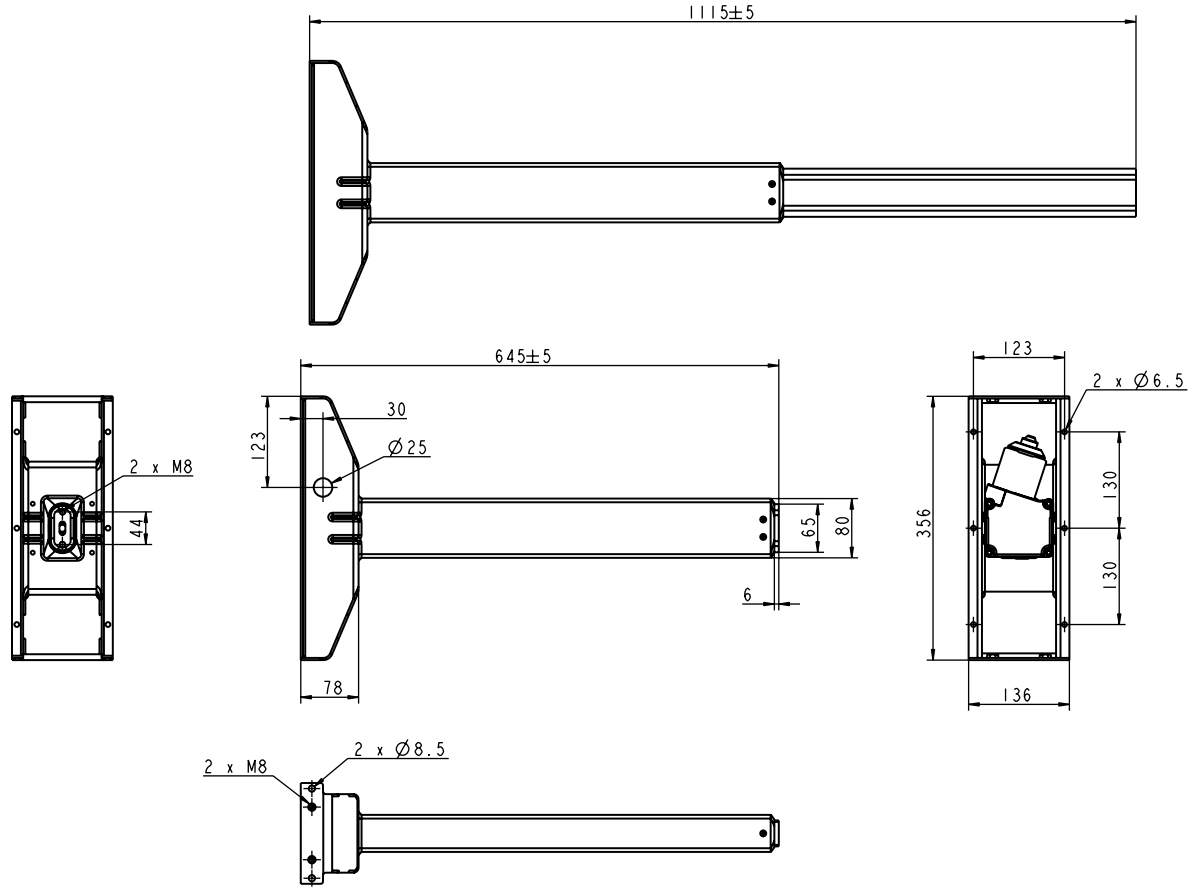
Dimensions:



Mounting guidelines for the DL7

Mounting of the top frame
There are 2 ways to mount the motor housing to a top frame. Either use the 2 outer placed holes on the short side of the motor housing and nut and bolt or use the 2 inner placed holes on the short side of the motor housing with thread (M8) and screws. If you choose the screws, we advise you to fasten the desk frame by means of 4 pcs. of M8 screws of a good quality and a suitable length, which must not go further into the motor housing than max. 30 mm.

We advise you to use the 6 pcs. of ø6 holes for mounting the tabletop.

Mounting of the foot

The DL7 is to be mounted on the foot by using 2 pcs. of M8 screws of a good quality and a suitable length, which must not go further into the column than max. 30 mm.

Always place the DL7 column on top of the foot construction due to the upside down design.

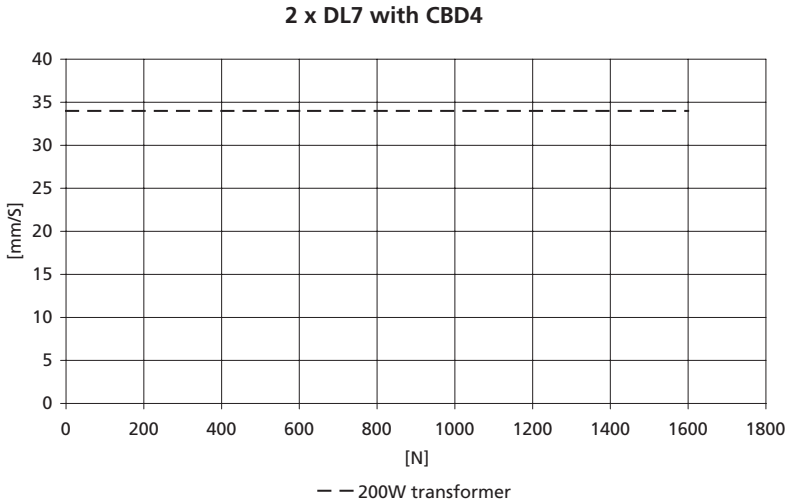
Technical specifications :

Type	Thrust max. (N) per DL7	Self-locking (N) per DL7	Speed unloaded (mm/s)	Duty cycle (%)
DL7	800	600	34	10

Above measurements are made in connection with the CBD4 control box.

As the tabletop amplifies the sound, we advise you to place a vibration/ shock-absorbing material between the tabletop and the table frame.

Value curves for 2 x DL7 in parallel drive:



Above data is measured in connection with 2 DL7 lifting units and a CBD4 control box.

DL7

Ordering example:

DL7 3 0 0 A 0 0 470 645

Installation dim. :	645 mm
Stroke length :	470 mm
Motor type :	0 = Standard
Option :	0 = Standard
Colour :	

	Outer tube	Inner tube	Motor housing
A =	Grey	Zinc plated	Grey
B =	Black	Black	Black

Mounting bracket :	0 = None
Fixing holes :	0 = Standard
Spindle pitch :	3 = 9 mm
Actuator type :	DL7

PRODUCT DATA SHEET

DESKLIFT DL9

Features:
- *Thrust up to 800 N per leg*
- *Speed level up to 38 mm/s unloaded*
- *Standard installation dimension 560 mm*
- *Standard stroke length 650 mm*
- *Colour: all parts black (RAL 9005) or all parts grey (RAL 9006)*
- *Low noise level*
- *Synchronous drive of the middle profile*
- *Separate motor cable (black: 1000 mm, 2000 mm or 2500 mm)*
- *Compact design where guide and actuator function are an integrated unit*
- *Dimensions column: 70 mm (outer profile), 63.5 mm (middle profile), and 57 mm (inner profile)*
- *Dimension motor housing: 177 x 97 x 46 mm (as DL6, but strengthened by a triangle)*
- *Bending moment: My = max. 150 Nm dynamic*
- *Hall sensor (enables parallel drive)*

Option:
- *Customised colours*

Usage:
- *Single or 2, 3, or 4 parallel drive*
- *Duty cycle: 10% ~ 6 min. per hour or 2 min. at continuous use at full load*
- *Ambient temperature: +10° to +40° C*
- *Compatible with control boxes CBD4, CBD5 and controls: DP, DPA, DPB and WDP*
- *Will be approved according to EN 60335-1 and UL 962*
- *Storage and transport temperature: -20°C to + 70°C*

The DL9 is the first round 3-part column made by LINAK. Besides the round guidance, the DL9 is based on the well-known DL5/6 motor housing and a new 3-part built-in actuator called DB9. The upside down construction gives a very compact and clean design, which also appears from the fact that the system is without a crossbar. The DL9 is compatible with the standard CBD4 and CBD5 control box ranges ensuring a very low and pleasant noise level and a wide range of options.

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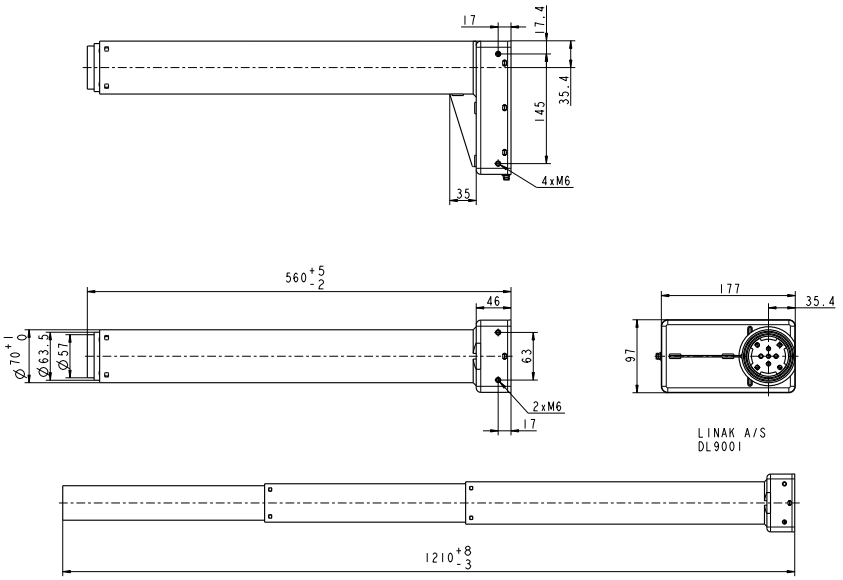
At a fully retracted length of 560 mm +5/-2 mm and a stroke length of 650 mm ± 3 mm it is possible for a standard system to obtain an adjustment interval of the desktop of e.g. 600 – 1250 mm. Thus, the desk can be used for sitting as well as standing work.

Dimensions:



Securing of the mechanical construction

The DL9 profile is like the DL11 profile equipped with grooves to secure the profile against rotation. The grooves ensure that no harm will be done to the inner parts of the DL9 should an obstacle occur (e.g. when moving the assembled desk and you hit the doorframe).

Mounting guidelines for DL9 (motor housing)

The motor housing is supplied with 6 M6 threaded holes meant for mounting on to the desk frame. We advise you to fasten the desk frame by means of 6 pcs. M6 screws of a good quality (min. 8.8) and a suitable length, which must not go further into the motor housing than max.10 mm. The thrust moment must not exceed 7.5 Nm.

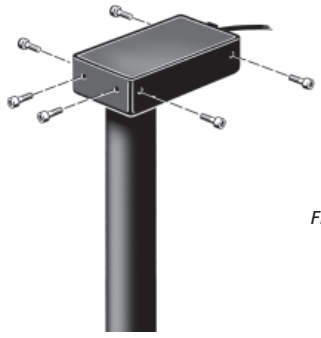


Figure 1

Use all 6 M6 threaded mounting holes for screws

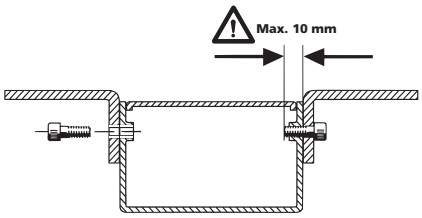


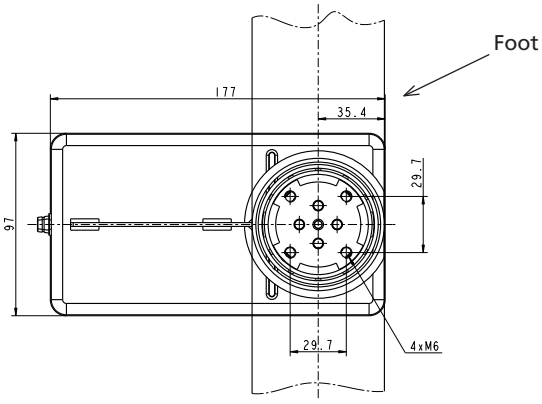
Figure 2

DL9 motor housing: be aware of the screw length.

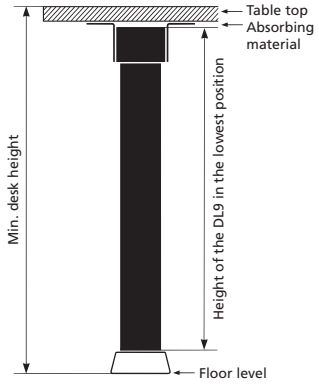
It is recommended to use all six M6 threaded holes to mount the desk frame. The values of the bending moments of the lifting units are only valid if the desk frame is mounted in this way. Tests with fixing the motor housing only by means of the 4 threaded holes have proved that this is not enough to obtain a sufficient torsional stability of the desk.

Mounting guidelines for DL9 (foot part)

The DL9 is supplied with 4 M6 threaded holes for mounting of the foot. We advise you to fasten the foot by means of 4 pcs. M6 screws of a good quality (min. 8.8) and of a suitable length, which must not go further into the DL9 column than 20mm. The thrust moment must not exceed 10 Nm in the bottom plate thread.



Mounting of the desk (misc.)



As the desktop amplifies the sound, we advise you to place a vibration/ shock absorbing material between the desktop and the desk frame.

With a desktop thickness of 25 mm, it is necessary for the lowest edge of the lifting unit to be mounted max. 15 mm above floor level to obtain a desk height of only 600 mm in the lowest position. If e.g. 2 mm vibration absorbing material is placed between the desktop and the desk frame the lifting unit must be mounted max. 13 mm above floor level.

The 4 holes in the bottom of the column are placed on an Ø 42 mm pitch circle.

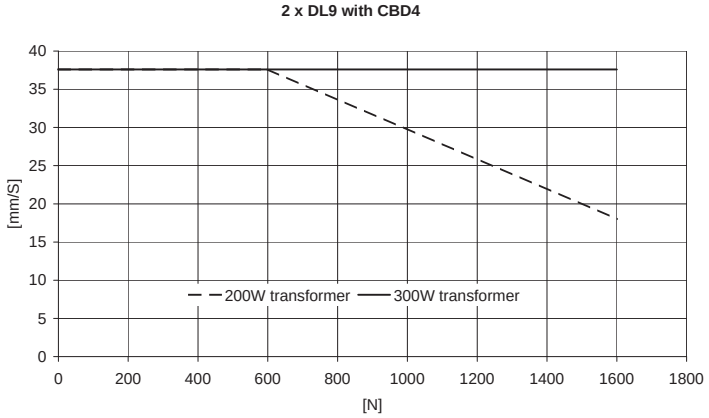
Placement of a monitor directly above the motor housing may cause malfunction of the monitor. Magnets inside the motor may interrupt the picture on the monitor depending on the distance and type of monitor. If this is the case, the problem may be solved by placing an iron plate/tube or another magnetic material, somewhat larger than the motor housing, between the motor and the desktop.

Technical specifications :

Type	Thrust max. (N) per DL9	Self-lock (N) per DL9	Speed Unloaded (mm/s)	Duty cycle (%)
DL9	800	800	38	10

Above measurements are made in connection with control box CBD4.

Value curves for 2 x DL9 in parallel drive:



The above data is measured with two DL9 lifting units. The desk is driving upwards.

The above curve applies to a centrally placed load. At moment load there will be an increased friction in the columns, which will reduce the lifting force correspondingly.

LINAK recommends that the DL9 DESKLINE® system should be used in push applications with the motor housing mounted uppermost.

Ordering example:

DL9 0 0 0 B 0 0 650 560

Installation dim. :	560 = 560 mm (Standard)
Stroke length :	650 = 650 mm (Standard)
Motor type :	0 = Standard
Standard :	0 = Standard
Colour :	A = Grey (RAL 9006) B = Black (RAL 9005)
Standard :	0 = Standard
Cable :	0 = 200 mm (Standard)
Spindle type :	0 = 10 mm pitch (Standard)
Type :	DL9 = 3-part column with round guidance and the largest profile upwards

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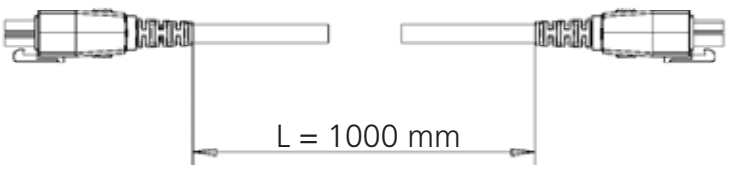
Motor cable:



Motor cables must be ordered separately.

Ordering numbers:
0617100 (L = 1000 mm black motor cable)
0617200 (L = 2000 mm black motor cable)
0617250 (L = 2500 mm black motor cable)

PRODUCT DATA SHEET

DESKLIFT DL11

Features:

- *Thrust up to 800 N per leg*
- *Speed level up to 38 mm/s unloaded*
- *Standard installation dimension 575 mm*
- *Standard stroke length 635 mm*
- *Colour: all parts black (RAL 9005) or all parts grey (RAL 9006)*
- *Low noise level*
- *Synchronous drive of the middle profile*
- *Separate motor cable (black: 1000 mm, 2000 mm or 2500 mm)*
- *Compact design where guide and actuator function are an integrated unit*
- *Dimensions column: 70 mm (outer profile), 63.5 mm (middle profile), and 57 mm (inner profile)*
- *The DL11 profile is secured against rotation*
- *Dimension motor housing: 177 x 97 x 46mm (as DL6, but strengthened by a plate)*
- *Bending moment: My = max. 150 Nm dynamic*
- *Hall sensor (enables parallel drive)*

Option:

- *Customised colours*

Usage:

- *Single or 2, 3, 4 parallel drive or even multi-parallel with up to 16 columns*
- *Duty cycle: 10% ~ 6 min. per hour or 2 min. at continuous use at full load*
- *Ambient temperature: +10° to +40° C*
- *Compatible with control boxes CBD4, CBD5 and controls: DP, DPA, and WDP*
- *Will be approved according to EN 60335-1 and UL 73*
- *Storage and transport temperature: -10°C to + 70°C*

The DL11 is the newest round 3-part column made by LINAK. Besides the round guidance, the DL11 is based on the well-known DL5/6 motor housing and a new 3-part built-in actuator called DB9.

The robust construction with the largest profile down and the reinforced motor housing gives a very compact and clean design, which also appears from the fact that the system is without a crossbar.

The DL11 is compatible with the standard CBD4 and CBD5 control box ranges ensuring a very low and pleasant noise level and a wide range of options.

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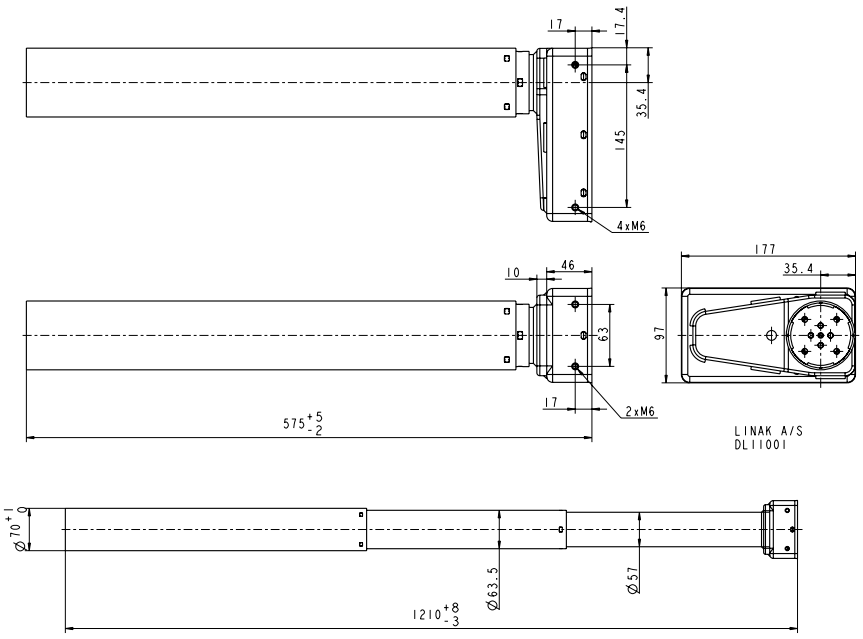
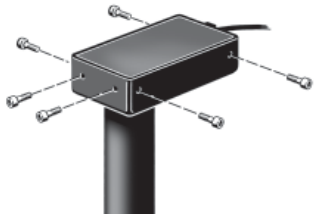
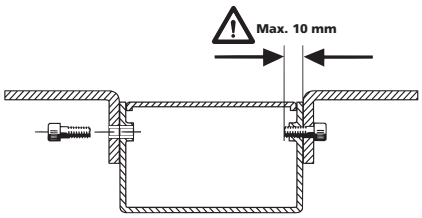
Dimensions:



Mounting guidelines for DL11 (motor housing)
The motor housing is supplied with 6 M6 threaded holes meant for mounting on to the desk frame. We advise you to fasten the desk frame by means of 6 pcs. M6 screws of a good quality (min. 8.8) and a suitable length, which must not go further into the motor housing than max.10 mm. The thrust moment must not exceed 7.5 Nm.



Use all 6 M6 threaded mounting holes for screws

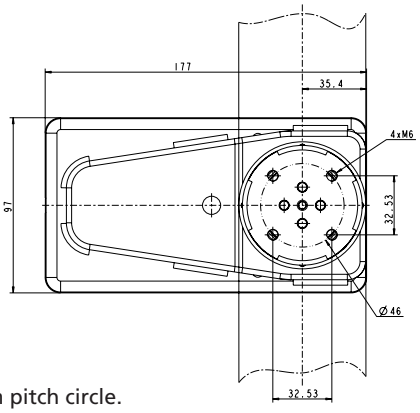


DL11 motor housing: be aware of the screw length.

It is recommended to use all six M6 threaded holes to mount the desk frame. The values of the bending moments of the lifting units are only valid if the desk frame is mounted in this way. Tests with fixing the motor housing only by means of the 4 threaded holes have proved that this is not enough to obtain a sufficient torsional stability of the desk.

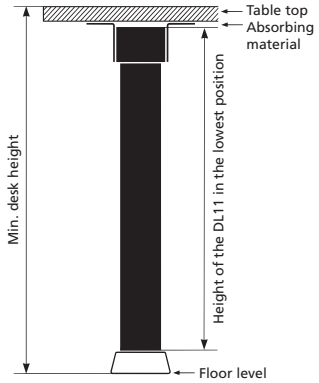
Mounting guidelines for DL11 (foot part)
The DL11 is supplied with 4 M6 threaded holes for mounting of the foot. We advise you to fasten the foot by means of 4 pcs. M6 screws of a good quality (min. 8.8) and of a suitable length, which must not go further into the DL11 column than 20 mm. The thrust moment must not exceed 10 Nm in the bottom plate thread.

The holes in the foot ought to be adequately bigger than ø6 so that it is possible to bring the foot to a level line at assembly/ mounting.



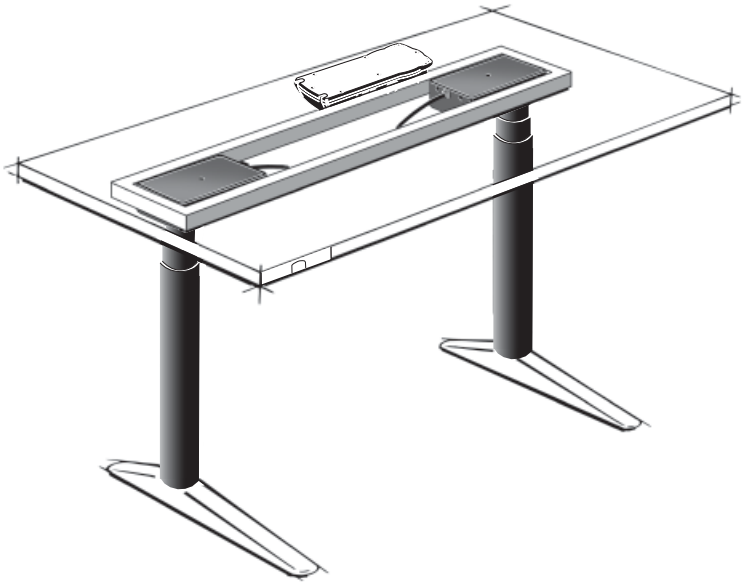
The 4 holes in the bottom of the column are placed on an Ø 46 mm pitch circle.

Mounting of the desk (misc.)



As the desktop amplifies the sound, we advise you to place a vibration/ shock absorbing material between the desktop and the desk frame.

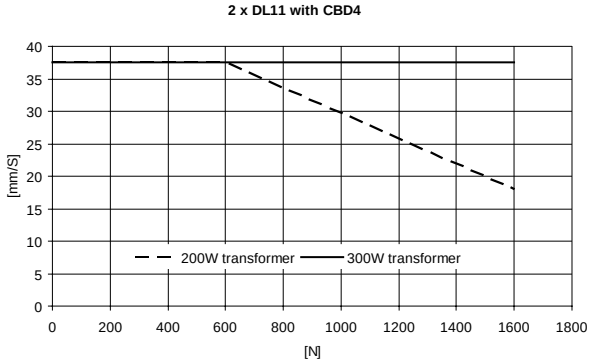
Placement of a monitor directly above the motor housing may cause malfunction of the monitor. Magnets inside the motor may interrupt the picture on the monitor depending on the distance and type of monitor. If this is the case, the problem may be solved by placing an iron plate/tube or another magnetic material, somewhat larger than the motor housing, between the motor and the desktop.



Technical specifications :

Type	Thrust max. (N) per DL11	Self-lock (N) per DL11	Speed Unloaded (mm/s)	Duty cycle (%)
DL11	800	800	38	10

Value curves for 2 x DL11 in parallel drive:



The above data is measured in connection with two DL11 lifting units. The desk is driving upwards.

The above curve applies to a centrally placed load. At moment load there will be an increased friction in the columns, which will reduce the lifting force correspondingly.

LINAK recommends that the DL11 DESKLINE® system should only be used in push applications with the motor housing mounted uppermost.

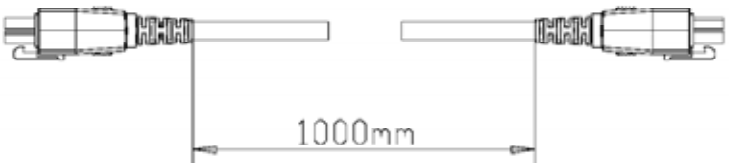
Ordering example:

DL11 0 0 0 B 0 0 635 575

Installation dim. :	575= 575 mm (Standard)
Stroke length :	635= 635 mm (Standard)
Motor type :	0 = Standard
Option :	0 = Standard
Colour :	A = Grey: RAL 9006 B = Black: RAL 9005
Standard :	0 = Standard
Cable :	0 = 200 mm (Standard)
Spindle type :	0 = 10 mm pitch (Standard)
Type :	DL11 = 3-part column with round guidance and the largest profile downwards

---

Motor cable:



Motor cables must be ordered separately.

Ordering numbers:
0617100 (L = 1000 mm black motor cable)
0617200 (L = 2000 mm black motor cable)
0617250 (L = 2500 mm black motor cable)

PRODUCT DATA SHEET

LIFTING COLUMN LC2

Features

- *LC2 is a specially designed telescoping aluminium lifting column incorporating a LINAK 24 V DC linear actuator (LA28C or LA30)*
- *LC2 lifting columns are available in 2 versions, the LC2-2 (small column) and the LC2-5 (large column)*
- *Thrust up to 5000 N (push only)*
- *Available with either 3 or 10 mm end plates*
- *Robust anodized aluminium surface*
- *Elegant and compact design*
- *Cable: Exchangeable cables*
- *Internal end stop switches*
- *Safety nut is standard on all LC2 types*
- *Standard protection class: IP 30*

Options

- *Reed-switch (for parallel and memory functions)*

Usage

- *Duty cycle: 2/18, 2 minutes continuous use followed by 18 minutes not in use*
- *LC2 is compatible with CB8, CB9, CB12, CB14** or CB18***
- *Ambient temperature: 5° to 40°C*

*** Contact LINAK A/S for technical support on parallel applications*

The LC2 column has an improved "twisting" stability and end stop switches as standard.

Depending on the application, the LC2 can be operated either as a single column or several columns in a parallel system by choosing a control box with micro processor.

It is designed to provide vertical lifting (push only) where simultaneous bending and torsion moments may occur.

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Technical specifications:

Actuator Type	Max. Push Force (N)	Stroke (mm)	Install. dim. 3 mm end plate (mm)	*Speed No Load / Full Load (mm/sec)	*Max. current (A)	Voltage (VDC)	Duty Cycle	Amb. Temp. (C)
LC22A (286XXX-1XXXX1XX)	3000	100 to 500	307 to 707	5.9 / 4.7	3.9	24	10%, up to 2 min. continuously at full load	5˚ / 40˚
LC22B (282X00-5XXXX1XX)	1500	100 to 500	307 to 707	20.0 / 11.5	4.6	24	10%, up to 2 min. continuously at full load	5˚ / 40˚
LC25C (301X00-1XXXX4XX)	5000	100 to 500	307 to 707	5.9 / 3.5	4.5	24	10%, up to 2 min. continuously at full load	5˚ / 40˚
LC25D (301X00-1XXXX0XX)	2500	100 to 500	307 to 707	15 / 9	6.5	24	10%, up to 2 min. continuously at full load	5˚ / 40˚
LC25E (302XX0-5XXXX4XX)	2500	100 to 500	307 to 707	12.5 / 7	4.0	24	10%, up to 2 min. continuously at full load	5˚ / 40˚
LC25F (303X00-5XXXX4XX)	1500	100 to 500	307 to 707	18 / 13	4.5	24	10%, up to 2 min. continuously at full load	5˚ / 40˚

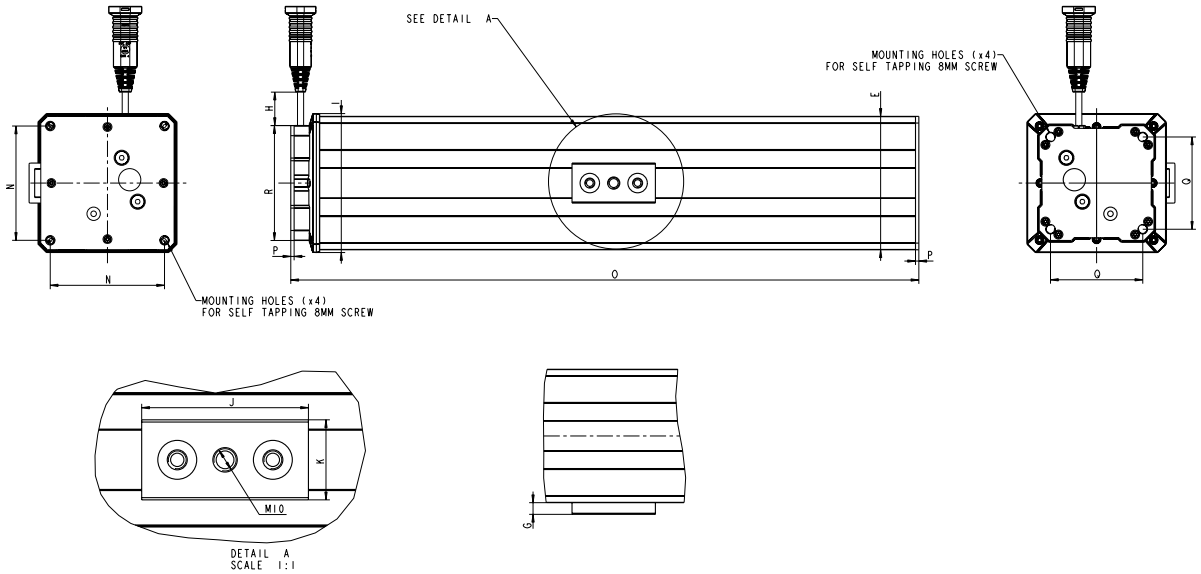
* Speed and current are measured using a stable power supply.
Special articles are available contact LINAK A/S

Precautions

- The installation dim. is increased by 14mm when 10mm endplates are chosen.
- Max. bending load is obtained from the bending load curves for the specifi c actuator type selected.
- The speeds mentioned above are with no offset load applied to the actuator.
- 8 mm self-tapping screws can be ordered separately with part no.: 0002085. Order through LINAK US. If another type of screw is used the screw must be a DG type screw for aluminium, the screw depth must be min. 60mm.
- If the 3 mm endplate option is chosen and an offset load is applied, do not unscrew the selftapping screw out of the profiles. This will reduce the strength of the assembly when the screw is screwed in again.
- When an offset load is applied to the column, extra consideration must be taken regarding the mounting of LC2. The top and the base must be fastened securely to avoid vibration and the offset load must be parallel to the limit switch side.
- LINAK control boxes are designed to short-circuit the motor terminals (poles) of the actuator (s), when the actuator(s) are not running. This solution gives the actuator (s) a higher self-locking ability. If the actuator(s) are not connected to a LINAK control box, the terminals of the motor must be short circuited to achieve the self-locking ability of the actuator.
- Storage temperature -40° to 70° C

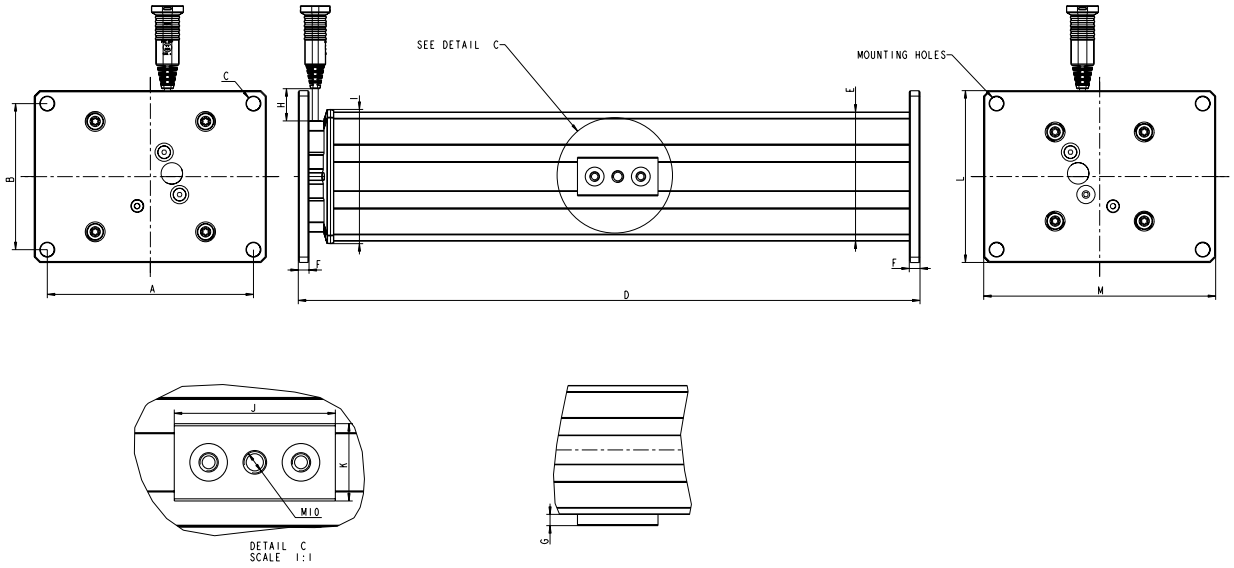
LC22
Dimensions:

With 3 mm endplates (P)



DIMENSION TABLE					
DIM.	in	mm	DIM.	in	mm
E	4.72 SQ.	120 SQ.	N	4.04	102.62
G	0.41	10.5	O	S+7.91+2P	S+201+2P
H	3.54	90	P	0.12	3
I	4.92 SQ.	125 SQ.	Q	3.26	82.92
J	3.95	75	R	5.1	103.3
K	1.42	36			

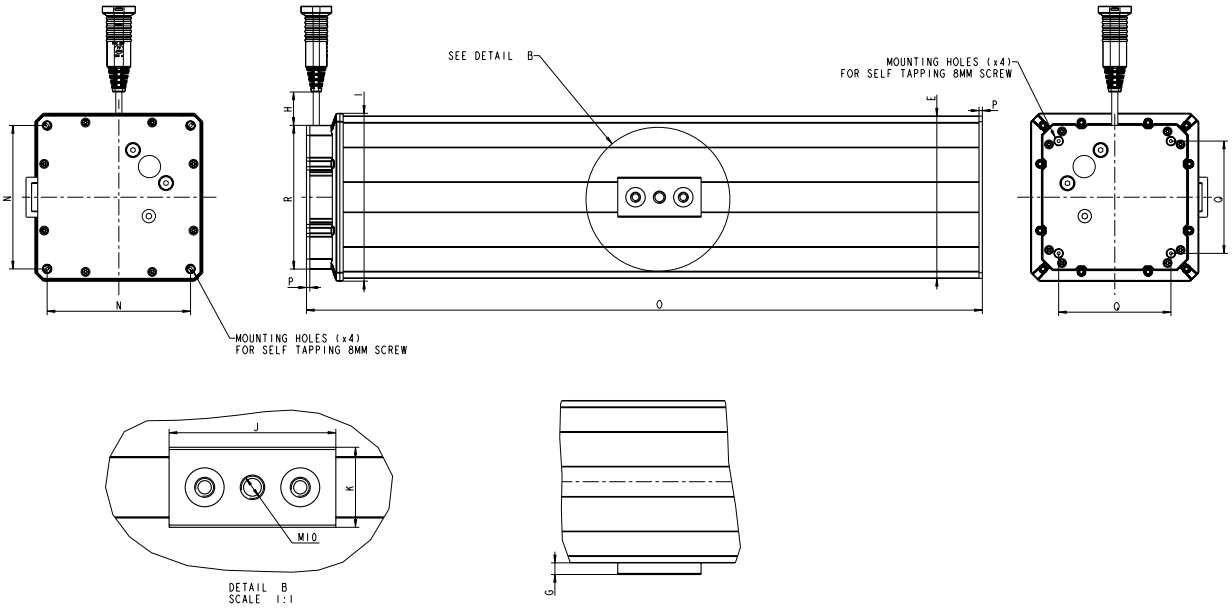
With 10 mm endplates (F)



DIMENSION TABLE					
DIM.	in	mm	DIM.	in	mm
A	7.56	192	H	3.54	90
B	5.35	136	I	4.92 SQ.	125 SQ.
C	Ø0.51	Ø13	J	3.95	75
D	S+8.46+2F	S+215+2F	K	1.42	36
E	4.72 SQ.	120 SQ.	L	6.30	160
F	0.39	10	M	8.50	216
G	0.41	10.5			

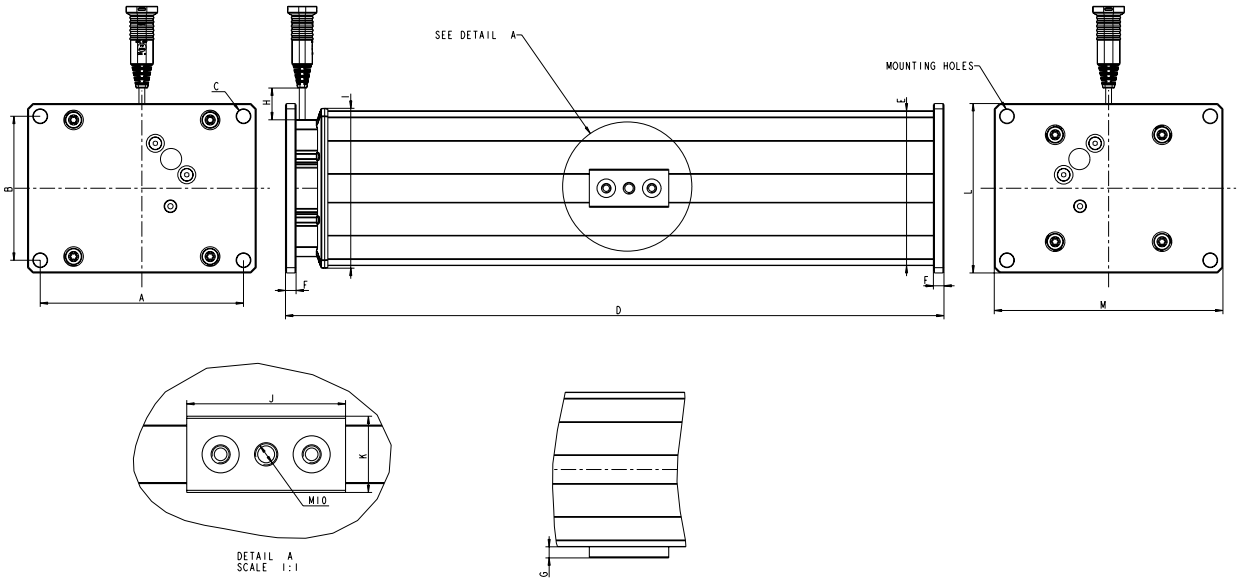
LC25
Dimensions:

With 3 mm endplates (P)



DIMENSION TABLE					
DIM.	in	mm	DIM.	in	mm
E	5.75 SQ.	146 SQ.	N	5.08	129
G	0.41	10.5	O	S+7.91+2P	S+201+2P
H	3.54	90	P	0.12	3
I	5.94 SQ.	151 SQ.	Q	3.98	101
J	3.95	75	R	5.1	129.3
K	1.42	36			

With 10 mm endplates (F)



DIMENSION TABLE					
DIM.	in	mm	DIM.	in	mm
A	7.56	192	H	3.54	90
B	5.35	136	I	5.94 SQ.	151 SQ.
C	Ø0.51	Ø13	J	3.95	75
D	S+8.46+2F	S+215+2F	K	1.42	36
E	5.748 SQ.	146 SQ.	L	6.30	160
F	0.39	10	M	8.50	216
G	0.41	10.5			

LC2

Ordering example:

LC2 2A 0 03 0 0A xxx 0 – xxx

Cable Type & Exit:
A Grey-Minifit Outer Profile Exit
B Grey-Minifit Inner Profile Exit
C Black-Minifit Outer Profile Exit
D Black-Minifit Inner Profile Exit

Column Install: Column Install = Stroke+201+2X End Plate Thickne

Column Stroke:

100	100 mm	3,9 in
200	200 mm	7,9 in
300	300 mm	11,8 in
400	400 mm	15,7 in
500	500 mm	19,7 in

Option: 0 Reserved

End Plate Type:

0	10 mm	endplate
1	03 mm	endplate

Feedback Type:

0	None (DIN)
1	None (Jack)
2	4W Reed (4P DIN)
3	3W Reed (Stereo Jack)

Profile/Actuator Type:

2A	286xxx-1xxxx1xx
2B	282x00-5xxxx1xx
5C	301x00-1xxxx4xx
5D	301x00-1xxxx0xx
5E	302xx0-5xxxx4xx
5F	303x00-5xxxx4xx

Column Type: LC2

External cable to be ordered separately.

Non Reed	Reed
Part No.	Part No.
00914569 - 2100 mm Black Jack	00914588 - 2100 mm Grey Jack
00914573 - 2100 mm Grey Jack	00914589 - 2100 mm Black Jack
00914571 - 2100 mm Black 4P DIN	00914665 - 2100 mm Black 4P DIN
00914572 - 2100 mm Grey 4P DIN	00914666 - 2100 mm Grey 4P DIN

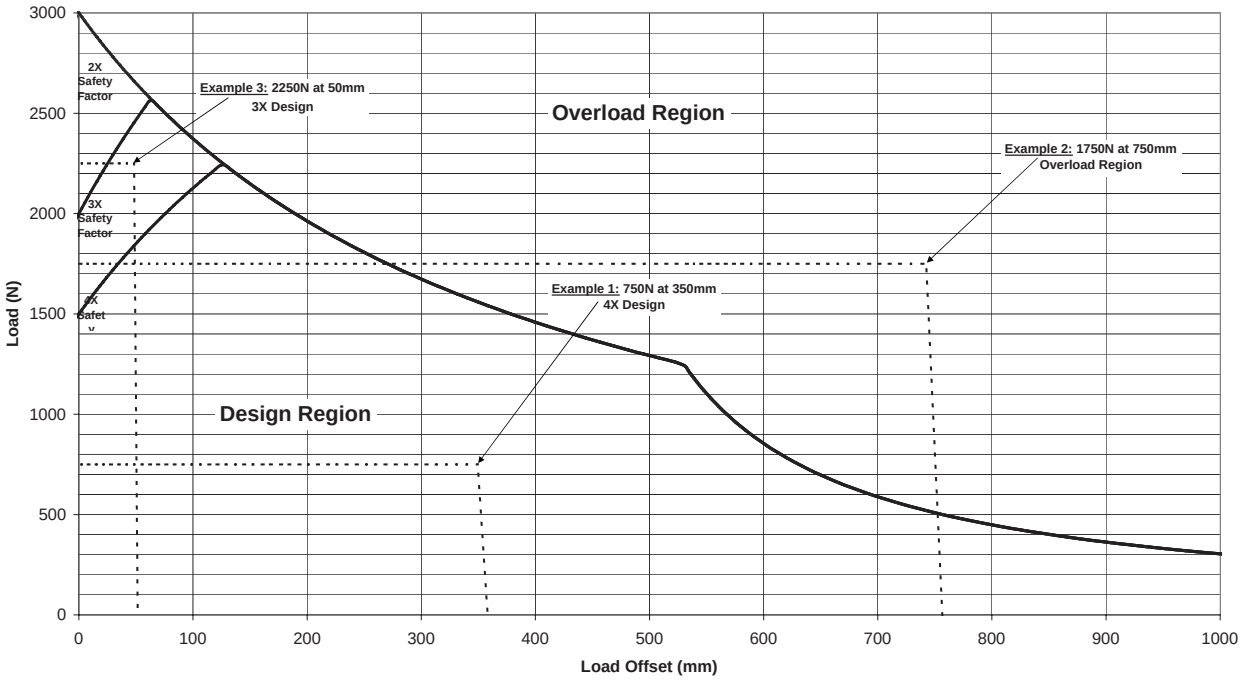
Mounting brackets have to be ordered separately
Order number: 0578006 (incl. 2 mounting screws)(drawing on LINTRA)

There are 4 holes provided in the 10mm end plate for mounting the column into its application.

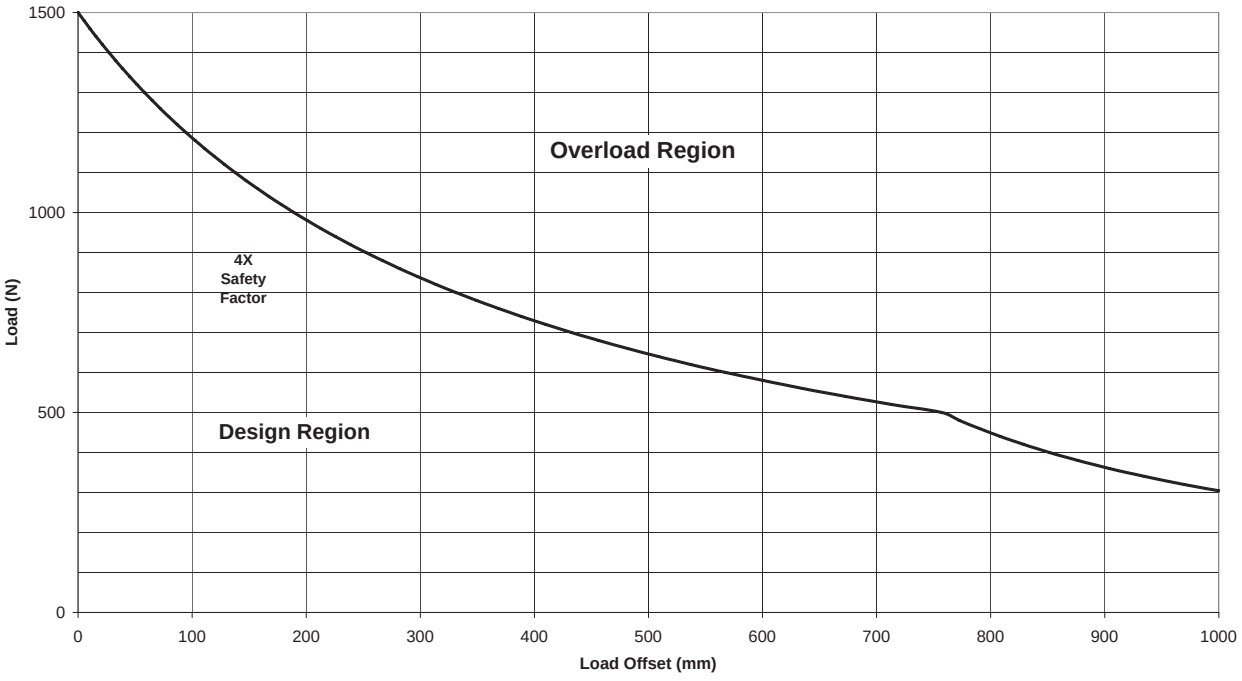
When ordering, please bear in mind, the LC2's are packed 12 to a pallet.

LC22
Bending Load:

Bending Load for Actuator **2A** (286XXX-1XXXX1XX)

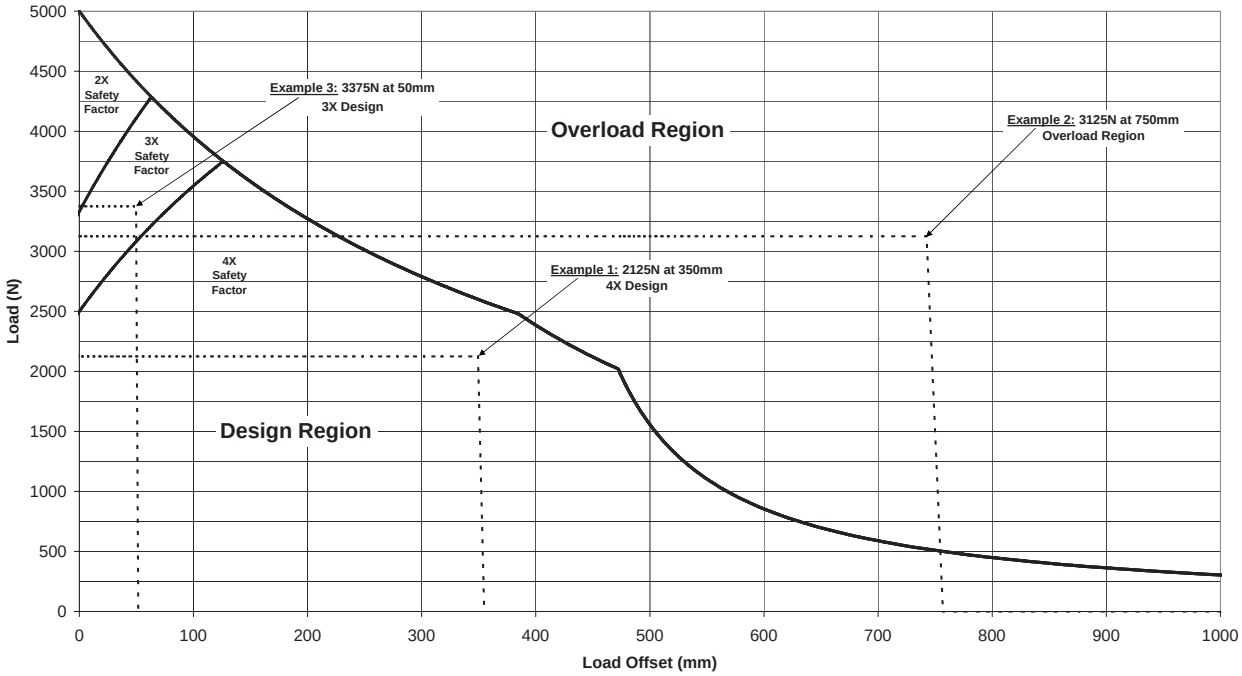


Bending Load for Actuator **2B** (282XXX-5XXXX1XX)

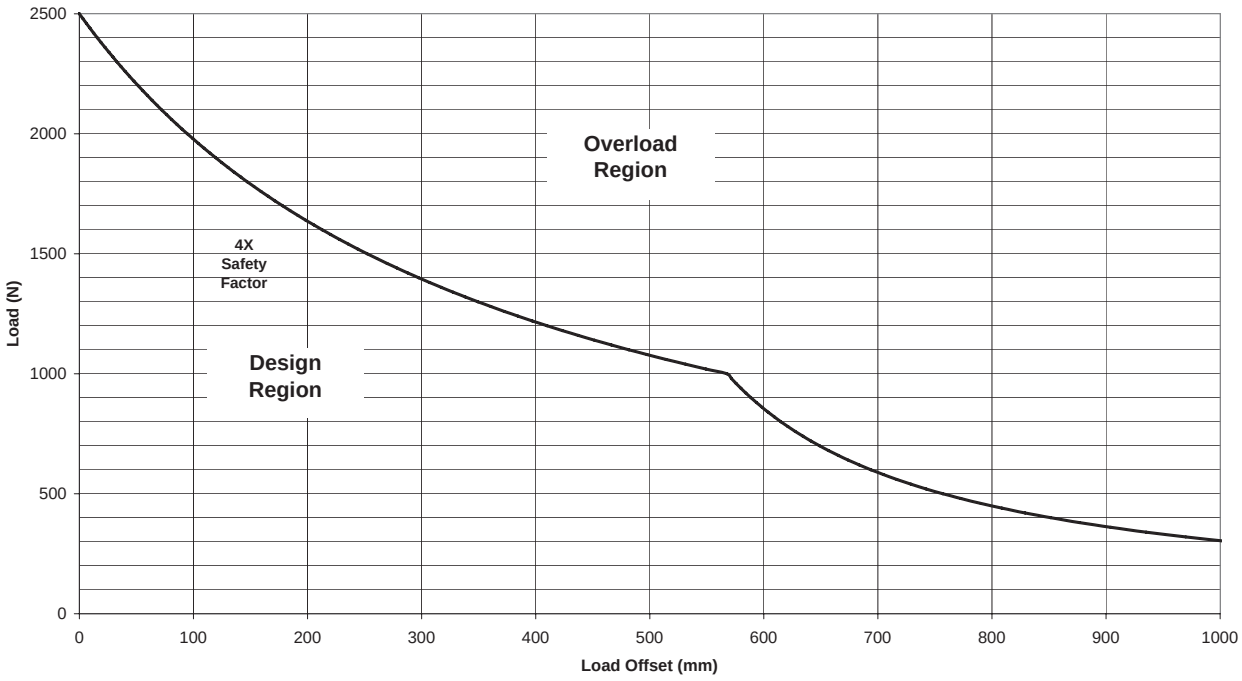


LC25
Bending Load:

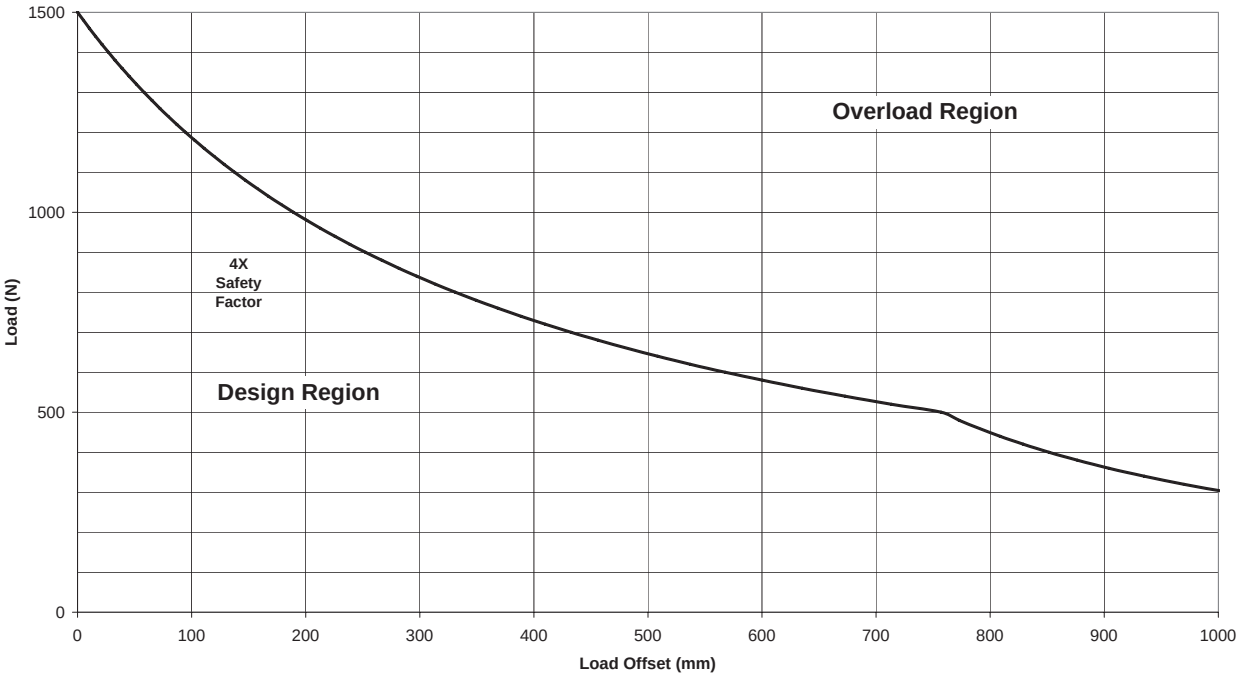
Bending Load for Actuator **5C** (301X00-1XXXX4XX)



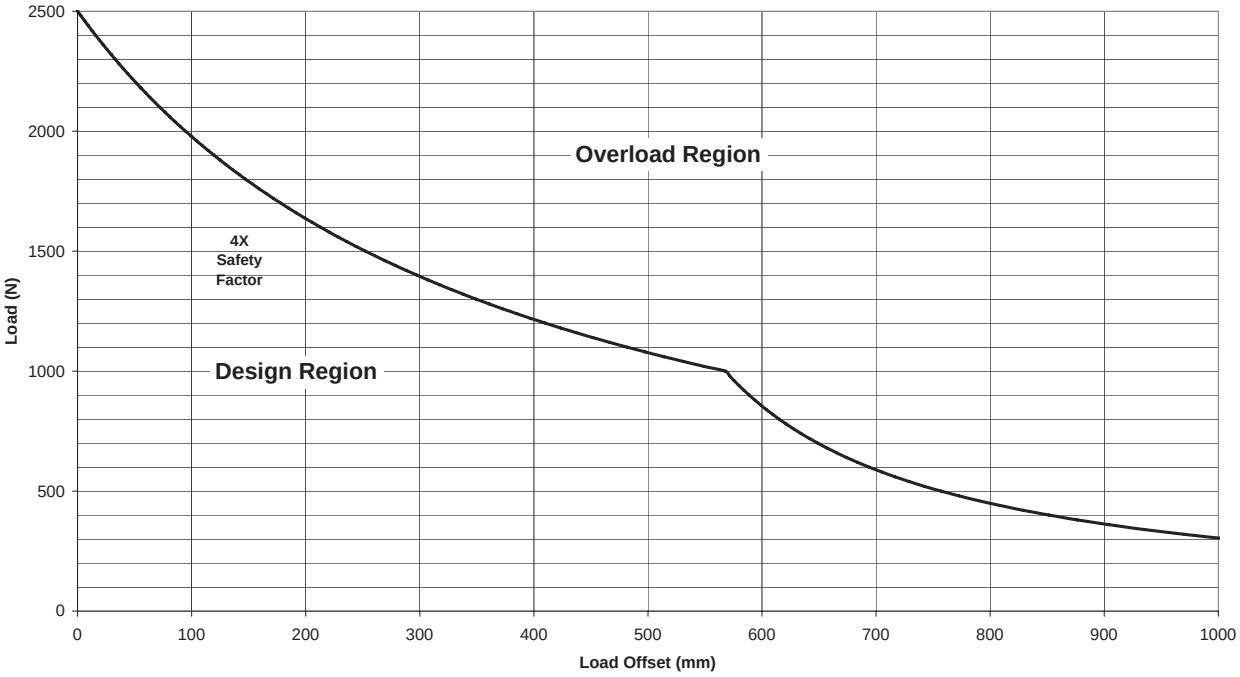
Bending Load for Actuator **5D** (301X00-1XXXX0XX)



Bending Load for Actuator **5F** (303XXX-5XXXX4XX)



Bending Load for Actuator **5E** (302XX0-5XXXX4XX)



PRODUCT DATA SHEET

LIFTING COLUMN LP2

Features:

- *LP2 is a specially designed telescopic aluminium lifting column incorporating a LINAK® 24 V DC linear actuator.*
- *It is designed to provide vertical lifting (push only) where simultaneous bending and torsion moments may occur*
- *LP2 lifting columns are available in 2 versions, the LP2-2 (small column) and the LP2-5 (large column)*
- *Thrust up to 6300 N with gas spring (push only)*
- *In each end of the column there is a black painted steel plate, in which there are 4 holes for the fastening of the column*
- *Robust anodised aluminium surface*
- *Extremely low noise level*
- *Elegant and compact design*
- *Cable: black 2,4 m straight supply fitted with jack-plug*
- *Standard protection class: IP 51*
- *Ambient temperature +5°C to +40°C*
- *Colour: anodised aluminium*
- *Duty cycle: 2/18; 2 minutes continuous use followed by 18 minutes not in use.*
- *LP2 is compatible with CB8, CB12, CB14 or CB18*

Options:

- *Reed-switch (for parallel and memory functions)*
- *Safety nut*
- *Mounting bracket on the side of the column. (E.g.: control boxes can be fastened directly to the lifting column)*
- *Gas spring for increased lifting capacity (only LP2-5)*

The LP2 range of vertical lifting columns is ideal where vertical positioning of substantial loads is required.

The design allows the LP2 range to be built in a complete motion control system simply by adding a suitable LINAK control box and handset.

Advanced design and high quality construction allows the column to be operated either as single or parallel with up to a max. of 4 units and/or with a memory function.

The LP2 lifting column is the ideal choice for duties such as height adjustment on computer work stations, work benches or a wide selection of other duties.

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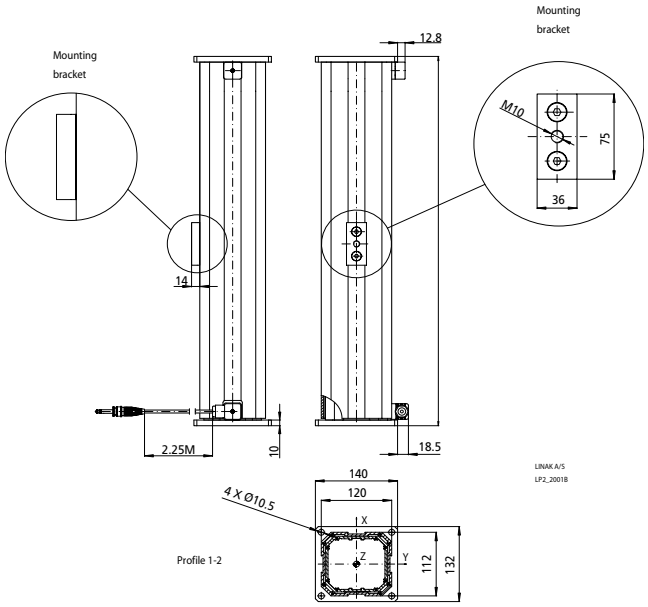
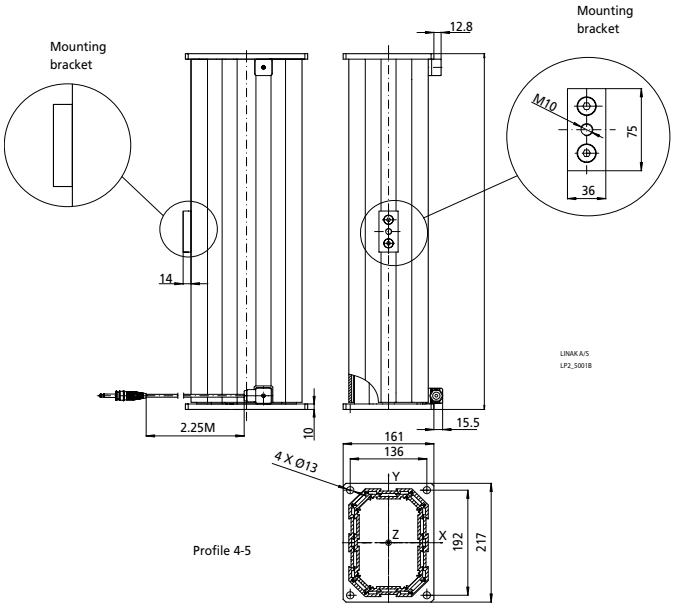
Dimensions: Profile 1-2



Dimensions: Profile 4-5



Technical specifications:

Type (Actuator type inside LP2)	Push max. (N)	Push max. with spring (N)	Typical speed at 0/full load (mm/s)	Typical amp. at 0/full load (24V)	Build-in "I" Stroke length "S" (mm)					Profile No.	Max. bending Moment* (static values) Mx (Nm)	 My (Nm)
LP2-2.1 (285xx0-xxxxx10x)	2600	-	9/6.2	1/4.4	I	405	505	630	670	1-2	700	550
					S	200	300	425	500			
LP2-2.2 (282xx0-4xxxx10x)	1600	-	21/13	1.5/4.4	I	405	505	630	670	1-2	700	550
					S	195B	295B	420B	465B			
LP2-5.1 (285xx0-xxxxx10x)	2600	3300	9/6.2	1/4.4	I	405	505	630	670	4-5	1600	1000
					S	200/200G	300/300G	425/425G	500/500G			
LP2-5.2 (301xx0-xxxxx40x)	3600	4300	6/5	1/4.5	I	405	505	630	670	4-5	1600	1000
					S	200/200G	300/300G	425/425G	500/500G			
LP2-5.3 (302xx0-xxxxx40x)	1600	2300	12/10.5	1/4	I	405	505	630	670	4-5	1600	1000
					S	200/195BG	300/295BG	425/420G	500/460BG			
LP2-5.4 (303xx0-4xxxx40x) (303xx0-5xxxx40x)	1000	-	18/15	1/4	I	405	505	630	670	4-5	1600	1000
					S	195B	295B	420B	460B			
LP2-5.5 (30Kxx0-xxxxx40x)	5600	6300	7/5	1.2/5	I	405	505	630	670	4-5	1600	1000
					S	150/150AS	250/250AS	400/400AS	400/400AS			
LP2-5.6 (282xx0-4xxxx10x) (282xx0-5xxxx10x)	1600	2300	21/13	1.6/4.4	I	405	505	630	670	4-5	1600	1000
					S	195BG	295BG	420BG	460BG			

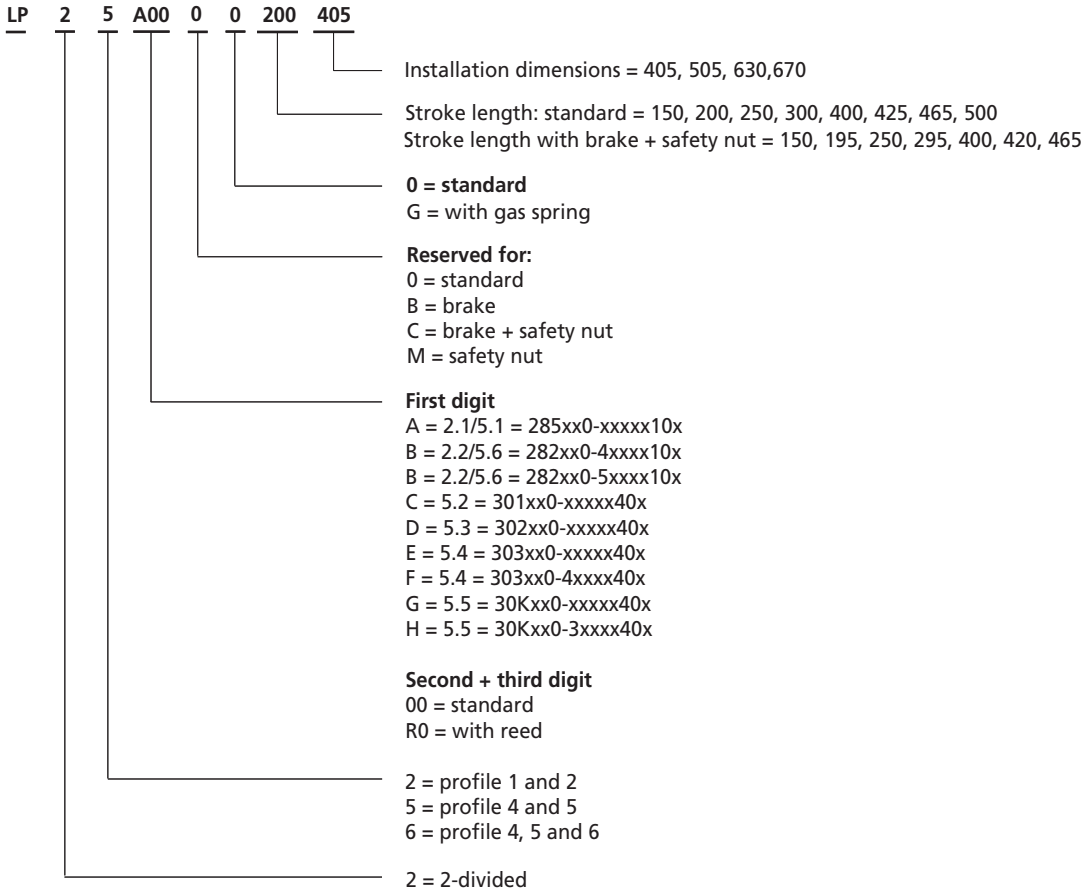
B = Includes brake
G = Includes gas spring
AS = Stroke length for LP with KAS actuator
For more actuator information see the relevant actuator ordering example

Speed values: average values, measured with column and stable power supply, without gas spring mounted.
The speeds mentioned above are with load on the Z-axis of the LP.
The column can only be loaded with the maximum bending moment over the first 80% of the stroke.
Above this 80% figure, the maximum bending moment will be reduced to 50%.

The column must only be mounted with the larges profile uppermost.

LP2

Ordering example:



Mounting brackets have to be ordered separately.
Order number: 052129 (including 2 mounting screws)

Various other information:
Tolerances for the lifting column:

Stroke: +/- 4mm
Installation dim. +/- 5 mm

The cleaners and disinfectants must not be highly alkaline or acidic(pH value 6-8)
Depending on the choice of control box it is possible to operate 2 lifting columns in parallel and save up to 3 memory positions.
If parallel drive or memory function is required the lifting column has to be ordered with reed switch.

PRODUCT DATA SHEET

LIFTING COLUMN LP3

Features:

- *Extremely low noise level*
- *Robust anodized aluminium surface*
- *Elegant and compact design*
- *In each end of the lifting column there is a black steel plate with 4 holes for mounting.*
- *Ambient temperature +5°C to +40°C*
- *Max. force: 2400 N, push only (depending on the type)*
- *Two straight cables fitted with 6.3 mm jack-plug*
- *LINAK LP3 is a specially designed lifting column incorporating 2 LINAK® 24 V DC linear actuators.*
- *LP3 is designed to provide vertical lifting where simultanous bending and torsion moments may occur*
- *Colour: anodised aluminium*
- *Duty cycle: 2/18; 2 minutes continuous use followed by 18 minutes not in use.*
- *LP3 is compatible with CB8, CB12, CB14 or CB18*

Options:

- *Reed switch (for parallel and / or memory drive)*
- *Safety nut*
- *Mounting bracket on the side of the column (control boxes can be fixed directly to the lifting column).*

LP3 is developed for vertical lifts and can resist a bending moment by virtue of the effective telescopic system.
The lifting column is designed for applications where a small installation dimension is requested without compromising the lifting capacity. The LP3 is characterised by having a lower installation dimension proportional to the stroke length compared with LP2. LP3 can also attain a higher speed than LP2.

The telescopic column is compatible with LINAK's control boxes and can run individually; as 2 x LP3 in parallel and/ or with memory.

The LP3 is the perfect choice for height adjustment on dental, gynaecologist and wheel chairs as well as for operating-, office- and working benches etc.

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Technical specifications:

Type (Actuator inside)	Push max.	Typical amp. column speed (mm/s) no load	Typical amp. column speed (mm/s) full load	Typical amp. (24V) no load	Typical amp. (24V) full load	Build-in "I" Stroke length "S" (mm)					Profile No.	Max. bending Mx (Nm)	Max. bending My (Nm)
LP3-6.1 (285xx0-xxxxx10x)	2400	18	12.4	2 x 1.0	2 x 5	I	360	405	460	550	4-5-6	600	375
						S	300	350	400	600			
LP3-6.7 (281xx0-xxxxx00x)	1400	16	8.4	2 x 0.7	2 x 2.5	I	360	405	460	550	4-5-6	600	375
						S	300	350	400	600			
LP3-6.8 (285xx0-xxxxx00x)	1700	12	7	2 x 0.7	2 x 2.5	I	360	405	460	550	4-5-6	600	375
						S	300	350	400	600			

Speed values: average values, measured with column and stable power supply.

The speed max. is measured at zero load and with both actuators driving simultaneously.

LP3 has 2 actuators and will therefore be supplied wiht 2 cables and jack-plug.

The cables have to come out of the smallest profile (212 x 156 see drawing).

The speed mentioned above are at load on the Z-axis of the LP.

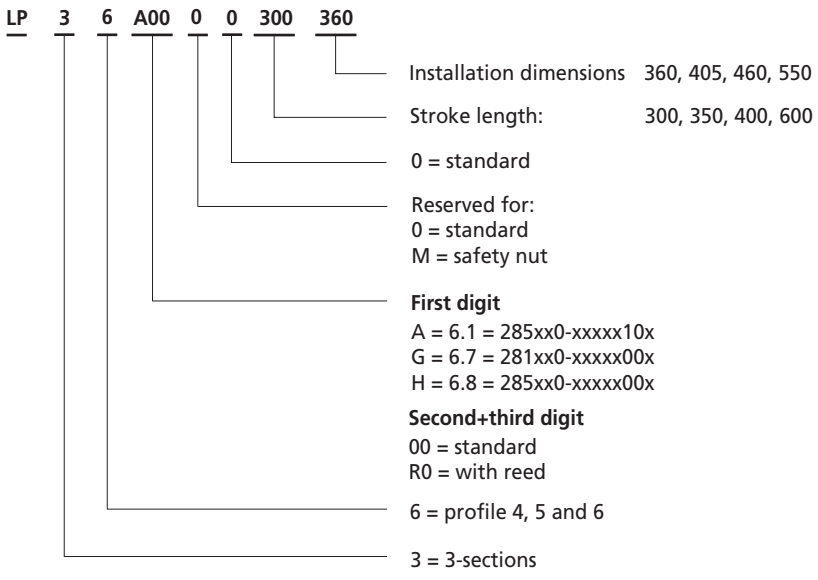
The column can only be loaded with the maximum bending moment over the first 80% of the stroke.

Above this 80% figure, the maximum bending moment will be reduced to 50%.

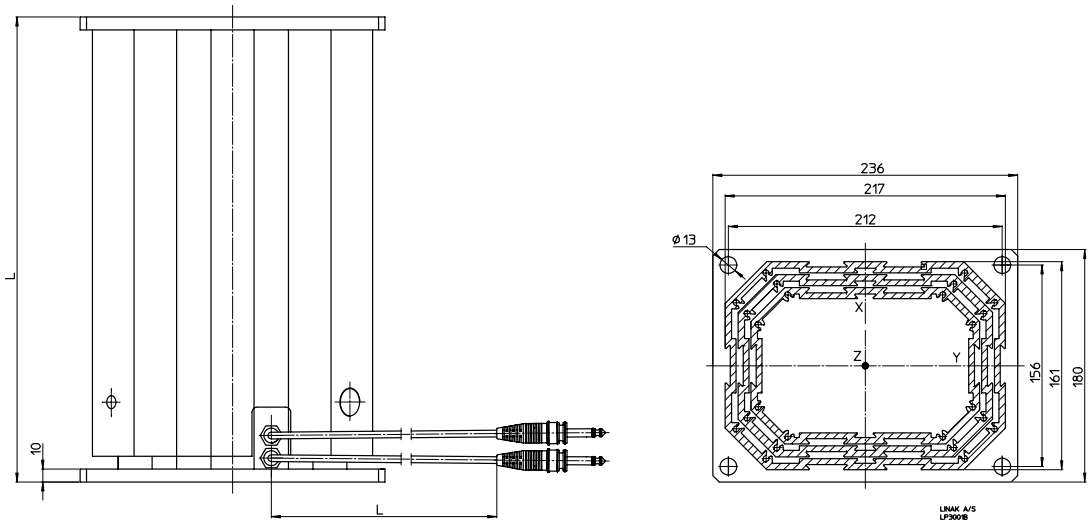
The column must only be mounted with the larges profile uppermost.

LP3

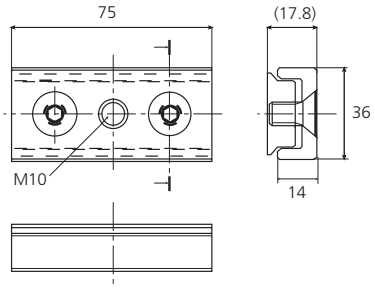
Ordering example:



Dimensions:



Mounting Bracket



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