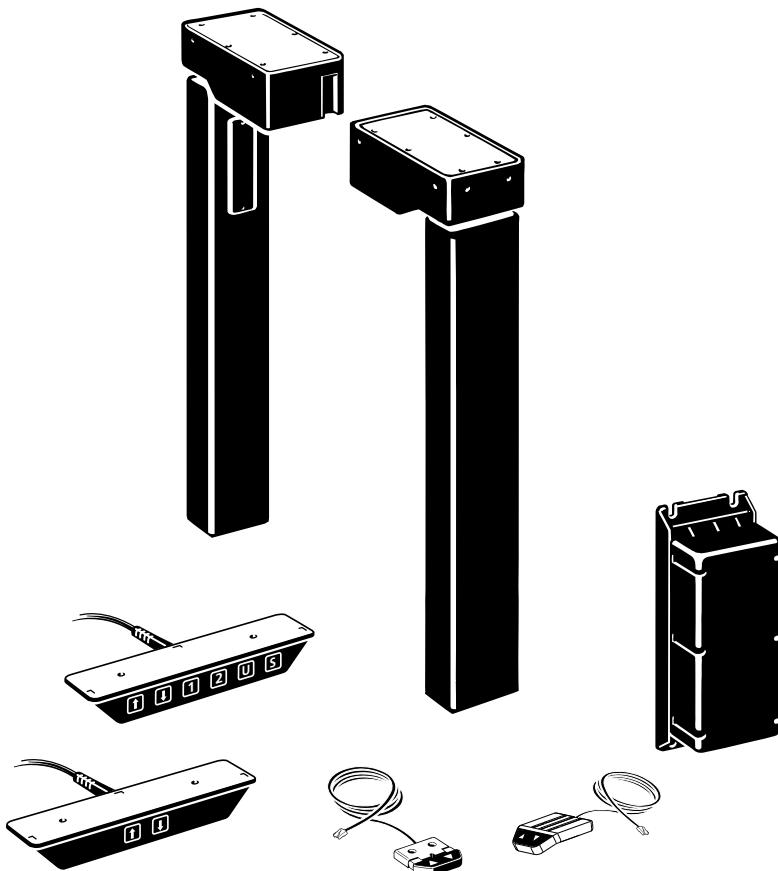


DL1 system



To learn more about LINAK please visit:
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LINAK® 
WE IMPROVE YOUR LIFE

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Preface

We are delighted that you have chosen a product from LINAK A/S. LINAK systems are high-tech products based on many years of experience in the manufacture and development of actuators, electric control boxes, controls, and chargers.

We are also constantly improving our products to meet customer requirements.

This User Manual will tell you how to install, use and maintain your LINAK DESKLINE® products.

We are sure that the DESKLINE® products will give you many years of problem-free operation. Before our products leave the factory they undergo full function and quality testing. Should you nevertheless experience problems with your systems, you are always welcome to contact our service departments or service centres.

LINAK subsidiaries and distributors all over the world have authorised service centres, which are always ready to help you.

LINAK provides a warranty on all its products. This warranty, however, is subject to correct use in accordance with the specifications, maintenance being done correctly and any repairs being carried out at a service centre, which is authorised to repair LINAK products.

Changes in installation and use of LINAK systems can affect their operation and durability. Changes must therefore only be made by agreement with LINAK A/S and are made at your own risk.

LINAK A/S

Safety instructions



Safe use of the system is possible only when the operating instructions are read completely and the instructions contained are strictly observed.

Failure to comply with instructions marked with the "NOTE" symbol may result in serious damage to the system or one of its components.

Persons who do not have the necessary experience or knowledge of the product/ products must not use the product/ products. Besides, persons with reduced physical or mental abilities must not use the product/products, unless they are under surveillance or they have been thoroughly instructed in the use of the apparatus by a person who is responsible for the safety of these persons.

Moreover, children must be under surveillance to ensure that they do not play with the product.



It is important for everyone who is to connect, install or use the systems to have the necessary information and access to this User Manual.



If there is visible damage on the product it must not be installed.



The appliance is not intended for use by young children or infirm persons without supervision.



Young children should be supervised to ensure that they do not play with the appliance.

Before installation, re-installation, or troubleshooting:

- Stop the DL1
- Switch off the power supply and pull out the mains plug.
- Relieve the DL1 of any loads, which may be released during the work.

Before start-up:

- Make sure that the system has been installed as instructed in this User Manual.
- Make sure that the voltage of the control box is correct before the system is connected to the mains.
- System connection. The individual parts must be connected before the control box is connected to the mains. See the User Manual for LINAK actuators, if necessary.

During operation

- If the control box makes unusual noises or smells, switch off the mains voltage immediately.
- Take care that the cables are not damaged.
- Unplug the mains cable on mobile equipment before it is moved.
- The products must only be used in an environment, that corresponds to their IP protection.

Repairs

In order to avoid the risk of malfunction, all DESKLINE® repairs must only be carried out by authorised LINAK workshops or repairers, as special tools Qmust be used and special gaskets must be fitted. Lifting units under warranty must also be returned to authorised LINAK workshops.



Warning!

If any of the DESKLINE® products are opened, there will be a risk of subsequent malfunction.



Warning!

The DESKLINE® systems do not withstand cutting oil.



DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

LINAK A/S
Smedevænget 8
DK - 6430 Nordborg

Name and address of the person authorized to compile the relevant technical documentation:
John Kling, Group Headquarters, Guderup, DK-6430 Nordborg, email jkl@linak.com

Herewith declares that LINAK Actuators and Actuator Systems comply with the following parts of the Machinery Directive 2006/42/EC, ANNEX I, *Essential health and safety requirements relating to the design and construction of machinery:*

1.5.1 Electricity supply: *Directive 2006/95/EC on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.*

1.5.10 Radiation, 1.5.11 External radiation: *Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility.*

The relevant technical documentation is compiled in accordance with part B of Annex VII and that this documentation or part hereof will be transmitted by post or electronically to a reasoned request by the national authorities.

This partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of this Directive, where appropriate.

Date: 2010-01-01

Signature:

John Kling
Certification and Regulatory Affairs

Misc. on the DESKLINE® DL1 system

Warranty

There is a 36 months' warranty on the DESKLINE products against manufacturing faults from the production date of the individual products (see label).

LINAK A/S' warranty is only valid in so far as the equipment has been used and maintained correctly and has not been tampered with. Furthermore, the system must not be exposed to violent treatment. In the event of this, the warranty will be ineffective/invalid. For further details, please see LINAK A/S ordinary conditions of sale.

Maintenance

Clean dust and dirt on the outside of the system at appropriate intervals and inspect them for damage and breaks.

Inspect the connections, cables, and plugs and check for correct functioning as well as fixing points.



**The cleaners and disinfectants must not be highly alkaline or acidic
(pH value 6-8).**

Description of the DESKLINE® DL1 system

Each DESKLINE® DL1 actuator is equipped with a motor and parallel/memory drive is ensured by means of software in the CBD3/CBD3 Basic that also takes account of oblique load on the desk. Soft start and stop are also part of this software, which ensures a soft start and stop when adjusting the desk.

Application of the DESKLINE® DL1 system:

Irrespective of the load the **duty cycle 10% ~ 6 min./ hour or max. 2 min. at continuous use** stated in the data sheets, must **NOT** be exceeded as this will result in a superheating of the motor, the brake and the spindle nut. Exceeding the duty cycle will result in a dramatic reduction of the life of the system.

The DESKLINE® DL1 system range contains the following products:

- 1 control box CBD3/CBD3 Basic
- 1 single DL1 or 2, 3, or 2 + 2 in parallel
- 1 DP (Desk Panel) or
- 1 DPA (Desk Panel) or
- 1 DPB (Desk Panel) or
- 1 DPF1C (Desk Panel)

	CBD3	CBD3 Basic
DL1	X	X
DPK	X	X
DPN	X	
DPA	X	X

Options:

- Class 1 protection
- Prepared for 1 or 2 anti-squeeze safety switches (NO type = normally open), only stop
- Mains cut-off
- Possibility of running extra actuators (LA31 with hall)

Mounting guidelines for the DESKLINE DL1



The lifting units must always be mounted with the motor housings upwards and pointing towards each other (see figure 2).

The aluminium motor housing is supplied with 6 pcs. of M6 threaded holes meant for mounting on the desk frame. The threaded holes are rolled into the aluminium housing.

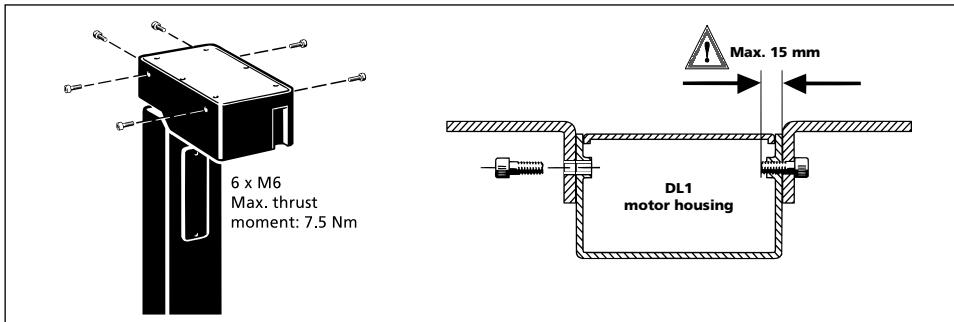


Figure 1



It is recommended to use all 6 M6 threaded holes. As the tabletop amplifies the sound we advise you to place a vibration/shockabsorbing material between the tabletop and the table frame.

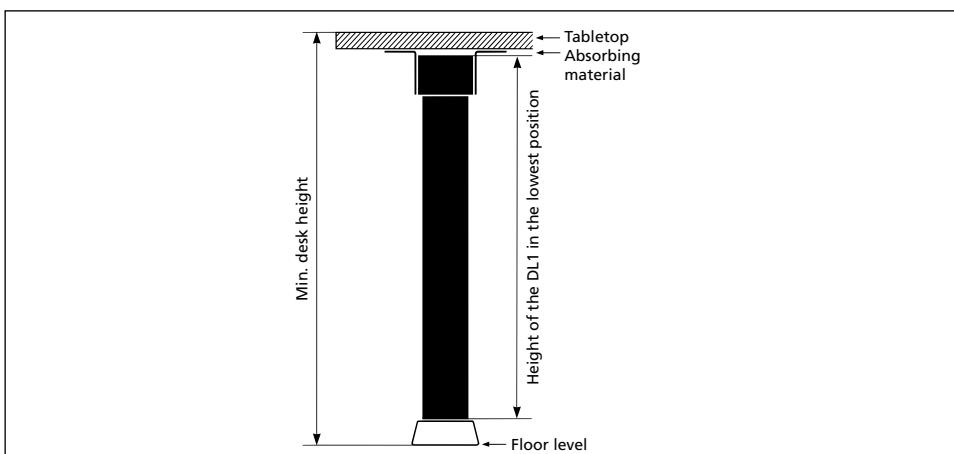


Figure 2

A suitable desk height in the lowest position 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.

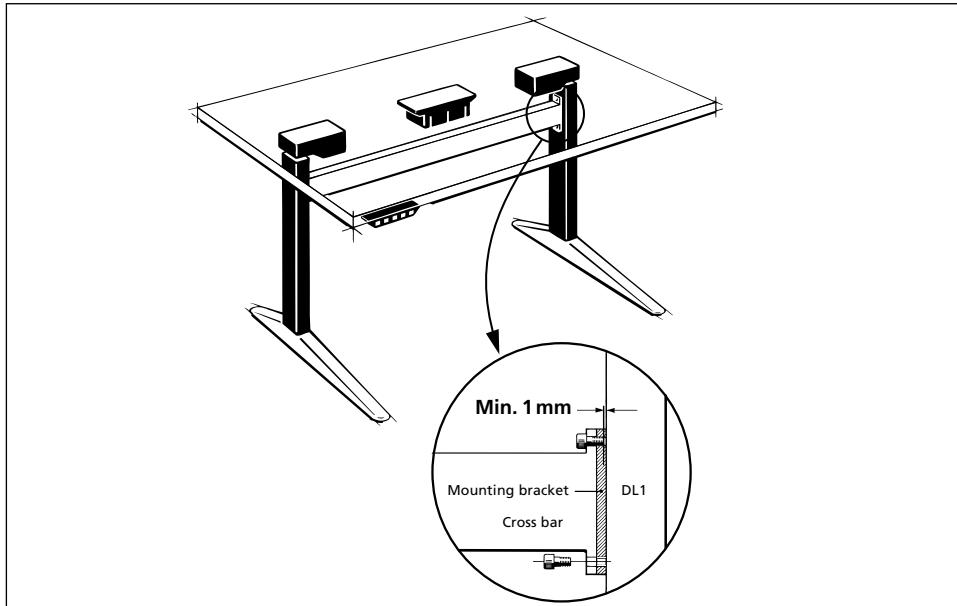


Figure 3
(Example of how to mount a 2 parallel DESKLINE® DL1 system)



To avoid damage of the lifting unit there must be min. 1 mm space between the end of the screw for the mounting bracket and the surface of the lifting unit (see figure 1). The use of any longer screws will come into contact with the inner parts. This will result in an irregular operation or even damage the lifting unit.



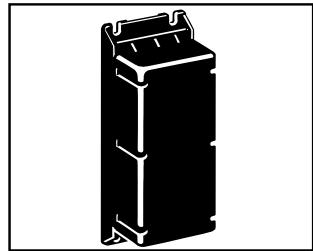
The DESKLINE® DL1 system can only be used in push applications with the motor housing mounted upwards.



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 tabletop.

Mounting guidelines CBD3/CBD3 Basic

The control box is to be fastened with 4 screws with a head diameter between ø 8 and ø 10 mm. Out of regard for the tension surface ø 10 mm is preferable. See drawing appendix for placing of mounting holes and the space the CBD takes up.



*CBD3/CBD3 Basic
- Control box*

The CBD must not be packed in heat insulating material, but must be placed so that it can emit waste heat into the surroundings. There are no ventilation holes to consider, the CBD emits heat through the surface.

The plug must be visible when the CBD is mounted so that the supply to the CBD can be disconnected at replacement, if any.

The mounting screws on the control box must be fastened with a max. torque of 1 Nm.

The mounting surface to which the control box is attached should have a surface evenness of max. ± 0.5 mm.

For mounting and operation of the desk panel, please see the separate user manual for desk panels.

Electrical connection of the DL1 system:

The DESKLINE® DL1 system is to be connected as shown on figure 7. Each DL1 is to be connected to the sockets on the control box by means of the motor cables, which have an 8-pin plug in each end. All DL1 lifting units are connected on the same side on the control box.



Be careful that the plugs are fixed exactly above the counterpart before pushing them together. Otherwise the plugs may bend and following errors may occur:

- The lifting units will not run as there is no current
- The lifting units start to run but stop due to lack of pulses
- The lifting units cannot find the endstop positions
- The system cannot be initialised and therefore it cannot find its memory Positions.

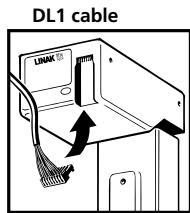
In the worst case the switches in the control box will short-circuit, which will damage the CBD.

The control (DP/DPA/DPB) is to be connected to port A or B on the control box on the opposite side of the lifting units (see figure 7). The connection is made by means of a 6 or 8-pole modular jack plug. Up to 2 SLS (Safety Limit Switches) can be connected to the control box on the opposite site of the lifting units. The connection is made by means of DC mini jack plugs (see figure 7).

Finally the mains cable is to be mounted and power switched on.



Please note that the control box must only be connected to the voltage stated on the label.



DL1

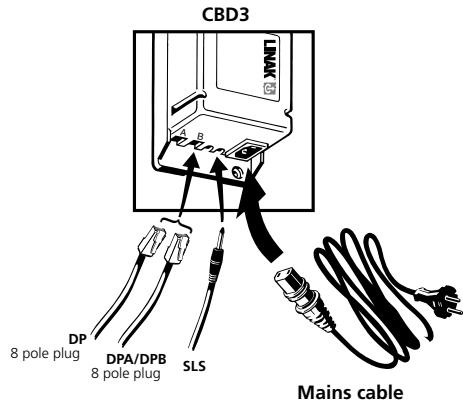


Figure 7

Initialisation of the DESKLINE® DL1 parallel systems

To obtain parallel operation of a DESKLINE® system it is necessary that the system at first activation drives the lifting units DL1 in end stop position bottom. Thus the control box CBD3/CBD3 Basic registers the bottom position for each lifting unit.

If an extra actuator apart from the DL1 is connected to the system this actuator must also be initialised. Drive the actuator to inner position and then to outer position.

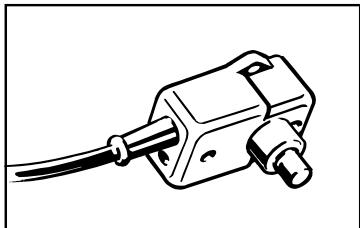
Besides the system has to be initialised when exchanging the lifting units or the control box.

Manual reset of system with CBD3 / CBD3B

If a table with a CBD3 or a CBD3B runs against an obstacle twice in succession this position will become the new endstop of the system. Hereafter it will not be possible to obtain full stroke length. To bring the system back to the original function it is necessary to reset it manually. This is made by pushing the up and down button on the control simultaneously for min. 5 sec. Herafter the system is to be initialised as described for the system in question.

Operation with SLS (DL1 system)

The software supports two SLS (Safety Limit Switch) inputs. The switches must be NO (Normally Open) types. The SLS can optionally be connected to the SLS inputs.



SLS (Safety Limit Switch)

Each SLS input controls one function according to the table below (stated when ordering the CBD). If the SLS is activated while a channel moves downwards the movement will stop immediately whereafter the channel automatically will move approx. 10 mm upwards and stop. It will only be possible to initiate movement in the upward direction as long as the SLS is active. When the SLS is released again and all keys on the Handheld Control have been released the Control Box will allow movement in both directions.

During a Memory drive session activating the SLS will stop the active channel irrespective of the direction. If the channel was moving downwards at the time the SLS was activated this channel will automatically move approx. 10 mm upwards and stop. The Memory drive session is abandoned.

SLS input	Channel 1	Channel 2	Channel 3
1	Stop	Stop	
2			Stop

Disposal of LINAK's products

As LINAK's customers often ask us how our products can be disposed of or scrapped we have prepared this guidance that enables a classification to different waste fractions for recycling or combustion.

Guidance

We recommend that our products be disassembled as much as possible and divided into different waste groups for recycling or combustion.

For example, waste can be sorted into metals, plastics, cable scrap, combustible material, and recoverable resources.

Some of these main groups can be further divided into subgroups; e.g. metal can be divided into steel/aluminium/copper and plastic can be divided into ABS/PA/PE/PP.

As an example, the table below breaks down the different components in LINAK products to various recycling groups:

Product	Components	Recycling group
Columns/ Actuator :	Spindle and motor Plastic housing Cable PCB boards	Scrap Plastic recycling or combustion Cable scrap or combustion Electronics scrap
Control Box:	PCB boards Plastic housing Cable Transformer	Electronics scrap Plastic recycling or combustion Cable scrap or combustion Metal scrap
Handset/Control:	Plastic housing Cable PCB board	Plastic recycling or combustion Cable scrap or combustion Electronics scrap

By now almost all our casted plastic parts are supplied with an interior code for plastic type and fibre contents, if any.

Main groups of disposal

Product main groups	Metal Scrap	Cable scrap	Electronics scrap	Plastic recycling or combustin	Comments
DL1	X	X	X	X	
CBD3	X	X		X	
DPXX		X	X	X	
SLS		X	X	X	

Label for DL1



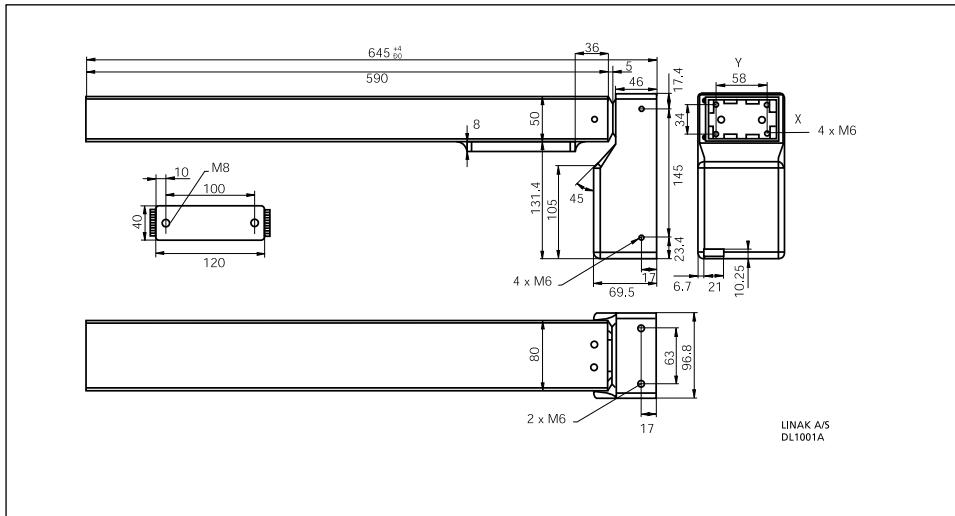
Label for CBD3



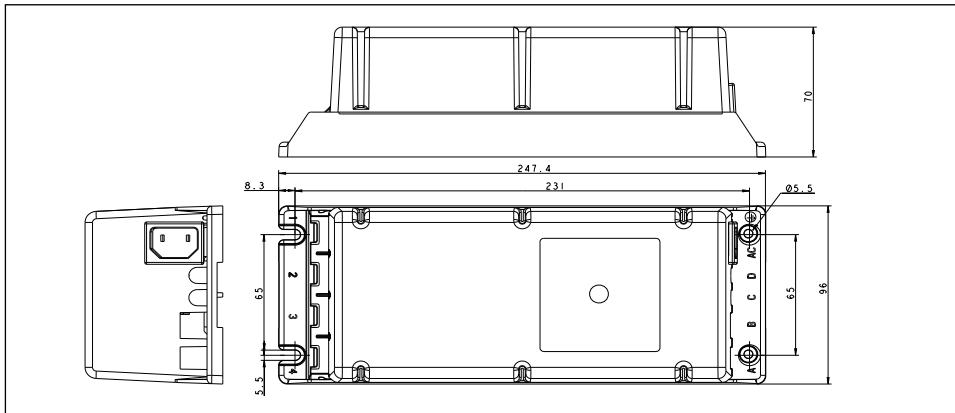
DRAWING APPENDIX

DESKLINE® DL1 System:

DL1 lifting unit



CBD3/CBD3 Basic Control Box



DECLARATION OF CONFORMITY

LINAK A/S
Smedevænget 8
DK - 6430 Nordborg

hereby declares that LINAK Actuator System composed of:

Control Box:
CBD3xxxxxxxx-xxx

Desklift(s):
DL1xxxxxxxxxxxx,
DL3xxxxxxxxxxxx,
DB1xxxxxxxxxxxx or
DB3xxxxxxxxxxxx
optional: Linear Actuator 31xxxxxxxxxxxx

Desk Panel/Display Panel:
DPxxx-xxxxxx or

complies with the EMC-directive 89/336/EEC according to the standards EN61000-6-1:2001, EN61000-6-3:2001, A11:2004, EN61000-3-2:2000 and EN61000-3-3:1995, A1:2001

and complies with Low Voltage Directive 2006/95/EC according to the standard EN60335-1:1994, A1:1996, A12:1996, A13:1998, A14:1998

Machinery Directive 98/37/EC Attachment IIB: LINAK A/S prohibit that the actuator system is put into service until the machinery into which the actuator system is to be incorporated has been declared in conformity with the provisions of all relevant directives

Date: 2007-02-28

Signature:



(Hans Schou Christensen)

LINAK APPLICATION POLICY

The purpose of the application policy is to define areas of responsibilities in relation to applying a LINAK product defined as hardware, software, technical advice, etc. related to an existing or new customer application.

LINAK products as defined above are applicable for a wide range of applications within the Medical, Furniture, Desk and Industry areas. Yet, LINAK cannot know all the conditions under which LINAK products will be installed, used, and operated, as each individual application is unique.

The suitability and functionality of the LINAK product and its performance under varying conditions (application, vibration, load, humidity, temperature, frequency, etc.) can only be verified by testing, and shall ultimately be the responsibility of the LINAK customer using any LINAK product.

LINAK shall be responsible solely that the LINAK products comply with the specifications set out by LINAK and it shall be the responsibility of the LINAK customer to ensure that the specific LINAK product can be used for the application in question.

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E-mail: [terms-of-use](http://www.linak.com/terms-of-use)

www.linak.com/terms-of-use is responsible for determining the suitability of LINAK products for specific application. LINAK takes great care in providing accurate and up-to-date information on its products.

However, due to continuous development in order to improve its products, LINAK products are subject to frequent modifications and changes without prior notice. Therefore, LINAK cannot guarantee the correct and actual status of said information on its products.

While LINAK uses its best efforts to fulfil orders, LINAK cannot, for the same reasons as mentioned above, guarantee the availability of any particular product. Therefore, LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or other written material drawn up by LINAK.

All sales are subject to the Standard Terms of Sale and Delivery for LINAK. For a copy hereof, please contact LINAK.

