

LA10 system

User Manual





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Preface

Dear User,

We are delighted that you have chosen a LINAK® product.

LINAK systems are high-tech products based on many years of experience in the manufacture and development of actuators, electric control boxes, controls, batteries, accessories and chargers.

This User Manual does not address the end user. It is intended as a source of information for the equipment or system manufacturer only, and it will tell you how to install, use and maintain your LINAK electronics. The manufacturer of the end product has the responsibility to provide a User Manual, where relevant safety information from this manual is passed on to the end user.

We are convinced that your LINAK product/system will give you many years of problem-free operation.

Before our products leave the factory, they undergo both function and quality testing. Should you, nevertheless, experience problems with your product/system, you are always welcome to contact your supplier.

LINAK subsidiaries and some distributors situated all over the world have authorised service centres, which are always ready to help you. Locate your local contact information on the back page.

LINAK provides a warranty on all products. (See warranty section).

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. The products may only be opened by authorised personnel.

This User Manual has been written based on the present technical knowledge. LINAK reserves the right to carry out technical modifications and keeps the associated information updated.

LINAK A/S



This User Manual is valid for the following products:

(See the first 3 - 5 characters on the label)

Actuators: LA10

Controls: BP11, BP12, and BP13

Charging Point: CP001, CP002, and CP003

Accessory: BLE2DC, BA002

Power supply: SMPS001 or SMPS006

Important safety information

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

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

Read all instructions before using this product.

Important safety information on LINAK® products can be found under the following headings:



DANGER

Failure to comply with these instructions will result in severe personal injury.



WARNING

Failure to comply with these instructions may result in severe personal injury.



CAUTION

Failure to comply with these instructions can result in minor personal injury.



NOTICE

Failure to comply with these instructions can result in property damage.

READ AND SAVE THESE INSTRUCTIONS

Safety instruction

General

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.



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. Follow the instructions for mounting – risk of injury if these instructions are not followed.



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



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



Note that during construction of applications, in which the actuator is to be fitted, there must be no possibility of personal injury, for example the squeezing of fingers or arms.



Only the power supply type SMPS001 or SMPS006, shall be used with the system (LA10 System). The power supply shall not be covered while operating to allow sufficient cooling of this appliance.



The appliance is only to be used with the power supply unit provided with the appliance. Furthermore take care about the connecting wires from the power supply to the LA10 System, do not damage this by overrun.



Assure free space for movement of application in both directions to avoid blockade.

Safety issues



The builder of the equipment shall ensure that the use of the component complies with relevant standards – like the Machine Directive. Care must be taken to avoid squeezing of cables as it can cause movement of the system!



The SMPS001/006 must not be packed in heat insulating material, but must be placed so that it can emit waste heat to the surroundings. There are no ventilation holes to consider, the SMPS emits heat through its surface.



Only the power supply type SMPS001 or SMPS006, or similar suited products meeting the requirements EN 60335-1, shall be used with the system (LA10 system).

Before installation, re-installation, or troubleshooting

- Stop the actuators
- Pull out the mains plug.
- Relieve the actuators 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 SMPS voltage matches the mains voltage before the system is connected to the mains.
- System connection. The individual parts must be connected before the SMPS is connected to the mains. See the User Manual for LINAK actuators, if necessary.

During operation

- If the SMPS makes unusual noise or smells, switch off the mains voltage immediately.
- Take care that the cables are not damaged.

Only for EU markets



This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.



Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Only for Non EU markets



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, sensory 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.

Misuse



Do not overload the actuators – this can cause danger of personal injury and damage to the system.



Do not use the system in environments other than the intended indoor use.



Declarations

EU Declaration of Conformity

EU DECLARATION OF CONFORMITY

LINAK A/S Smedevænget 8 DK - 6430 Nordborg

hereby declares under our sole responsibility that LINAK Actuator System (LA10) for use in adjustable recliner chairs for the purpose of raising and lowering the back and foot sections:

With main component (marked with CE) Control unit (model): BLE2DC or BA002

And options of

linear Actuator(s):

item number: 10aaabbb00000000-cccde0ffgghij, Where - aaa can be 040 or 060; bbb can be between 25 and 150; ccc can be between 153 and 278; d can be 1, 2, 3 or 4; e can be 1, 2, 3 or X; f can be 0 or 1; gg can be any character; h can be 0 or 1; i can be any character and j can be 0 or 1.

Charging point: CP002, CP003, CP001 or CP100

Power unit: SMPS001 or SMPS006

Handsets (model): BP10BL, HC05BL, HC10BL, HC1ABL, HC40BL

complies with the Radio Equipment Directive 2014/53/EU (OJ L 153, 22.5.2014, p. 62-106) according to the standard:

Art.3.1 (a) Safety:

EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017 + A1:2019 + A14:2019 + A2:2019 + A15:2021 (Harmonized to LVD)

Art.3.1 (a) Health:

EN 62479:2010; (Harmonized to LVD)

EN 62233:2008+AC:2008

Art. 3.1(b) EMC:

EN 61000-6-2:2005/AC:2005

EN 61000-6-3:2007/A1:2011/AC:2012

ETSI EN 301 489-1 V2.2.3;

ETSI EN 301 489-17 V3.2.4

In accordance with procedures given in: Draft ETSI EN 303 446-1 V1.2.0

Draft ETSI EN 303 446-2 V1.2.0

Art. 3.2 Radio:

ETSI EN 300 328 V2.2.2

Complies with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (OJ L 174, 1.7.2011, p. 88-110) and Directive 2015/863 (OJ L 137, 4.6.2015, p. 10-12) (amending Annex II to Directive 2011/65/EU) according to the standard:

EN IEC 63000:2018

Nordborg, 2023-06-26

LINAK A/S

Dragan Macura

Dragan Macura
Regulatory Compliance Manager
Deskline and Homeline Segments
Authorized to compile the relevant technical documentation

Original Declaration



UK Declaration of Conformity

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Charging point: CP002, CP003, CP001 or CP100

Power unit: SMPS006

Handsets (model): BP10BL, HC05BL, HC10BL, HC1ABL, HC40BL

complies with the Radio Equipment Regulations 2017 according to the standard:

Reg. 6(1)(a) Health: BS EN 62479:2010

Reg. 6(1)(a) Safety: BS EN 60335-1:2012+A15:2021

Reg. 6(1)(b) EMC: ETŠI EN 303 446-2 V1.2.1 (2019-10), ETSI EN 301 489-1 V2.2.3; ETSI EN 301 489-17 V3.2.4

Reg. 6(2) Radio: ETSI EN 300 328 V2.2.2

Complies with The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic **Equipment Regulations 2012** according to the standard: BS EN IEC 63000:2018

Nordborg, 2023-04-28

LINAK A/S

Dragan Macura

Dragan Macura
Regulatory Compliance Manager
Deskline and Homeline Segments
Authorized to compile the rejevant technical documentation

Original Declaration



Manufacturer's declaration

DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY 2006/42/EC ANNEX II B

LINAK A/S

Smedevænget 8 DK - 6430 Nordborg

Herewith declares that LINAK HOMELINE® products as characterized by the following models and types:

Control Boxes CB9H, CBH Advanced, CBH Basic Linear Actuators LA27, LA29, LA31 HOMELINE

Dual Actuators TD3, TD4, TD5

Controls HB10 RF, HB20RF, HB60, HC10, HC10RF, HC20RF, HC40

Accessories Bluetooth Adapter, DC CONNECTOR, LED Lightbox, Lightplug001, Massage

Motor, SMPS001, SMPS001, SMPS002, SMPS006

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

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 the Machinery Directive 2006/42/EC where appropriate.

Nordborg, 2019-10-21

LINAK A/S

John Kling, B.Sc.E.E. Regulatory Affairs Manager Authorized to compile the relevant technical documentation

Original Declaration



Description of the HOMELINE® LA10 system

The LA10 system consists of one or more Linear Actuators LA10, a Bluetooth® dongle, a control unit, and a charging point. The solution is designed for adjustable recliner chairs and meets user requirements for reduced number of cables in the system. The LA10 actuator is intelligent and automatically detects its position when connected in serial into a system. A Bluetooth® dongle ensures the wireless connection to the control unit, which is a wireless control placed in a bracket. To complete the design, the charging point is available in different versions. The entire system is designed to meet user preferences and to fit the elegant design of modern living-room furniture. In the newest system, the Battery BA002 offers a powerful solution without a permanent cable to the application.

An LA10 system consists of:

- LA10 linear actuator
- Bluetooth® dongle
- BP11, BP12, or BP13 control unit
- Bracket for control unit
- Charging Point CP001, CP002, or CP003
- Battery Box BA002
- Switch Mode Power Supply SMPS001 or SMPS006

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG Inc. and any use of such marks and logos by LINAK A/S is under license.

Configuration

The LA10 actuator can be configured via the LA10 configurator. A number of parameters can be adjusted such as speed and stroke length.



Settings that are not default values, such as increased speed, will have influence on the product lifetime, push force etc.

Changes made in the configurator are not tested and we cannot guarantee that the specifications in the data sheet are met.

Warranty

The warranty terms for HOMELINE products are described in this warranty paper:

https://cdn.linak.com/-/media/files/warranty/warranty-paper-homeline-eng.pdf



Please note that the warranty on the Battery Box BA002 is extended to 36 months.

Maintenance

Clean dust and dirt from the outside of the system at appropriate intervals and inspect 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 must be 6 to 8).



Installation



WARNING:

The Control Unit BP10, the Charging Point CP003, and the CP003 charging cable contain a magnet that could affect the function of a medical device (such as a pacemaker). Please read the instructions of the medical device and keep a safe distance for safe use, if required.

The connection cables between units on the bus (from battery to LA10 and between the LA10 actuators) should be kept as short as possible – use the recommended 400 mm or 800 mm cables and avoid excess cable.

This becomes more important when having several PLC units (multiple LA10s) on the bus. If this requirement is not met, communication may be lost and the movement interrupted.



Recommended cable length between the SMPS and the actuator:

- Min. 1.8 m
- Max. 5 m

Shorter cable:

The system may not work correctly, or it may behave in an unexpected way.

Longer cable:

Voltage drop causing the system to run slower.

In general, a rule of thumb for a multiple-actuator system is that the total cable length after the first unit must be less than the cable length from the SMPS to the first unit.

Total cable length 50% Solving 50% Solving 50% Solving 50% Unit* Unit* Unit* Unit* Unit* Unit* L ≤ 1800 mm Total cable length L ≤ 5000 mm Total cable length

Signal strength

Figure 1 Cable length illustration (valid for up to 4 PLC units - units with micro)

Example:

In a system with a 2.5 m charging cable and a 0.5 m charging point cable (in total 3 m from the SMPS to the first PLC unit), the cable length from the first PLC unit to the last PLC unit must be less than 3 m.



^{*:} LA10, Bluetooth® dongle, or BA002

Connecting the LA10 system with Bluetooth® dongle

1. Gather all parts for the LA10/Bluetooth® dongle system.

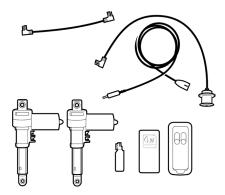
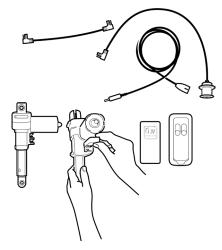
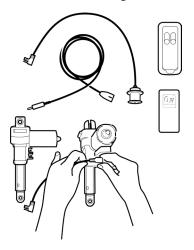


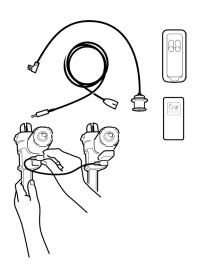
Figure 2 All parts of the LA10/Bluetooth® dongle system

Plug the Bluetooth dongle into one of the actuators.

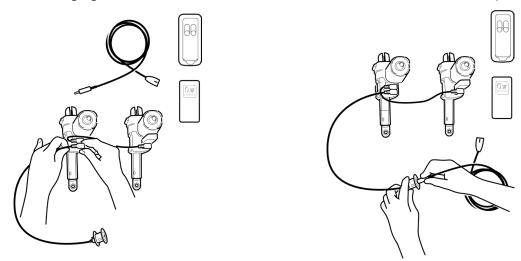


3. Connect the actuators using the connection cable.

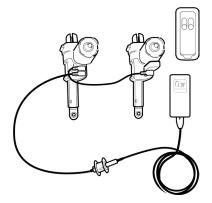




4. Connect the Charging Point CP001/002/003 to one of the actuators and connect the power cable.



5. Connect the power cable to the power supply.



Connecting the LA10 system with BA002

1. Gather all parts for the LA10/BA002 system.

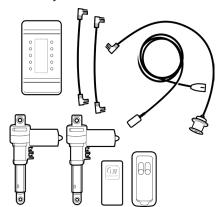
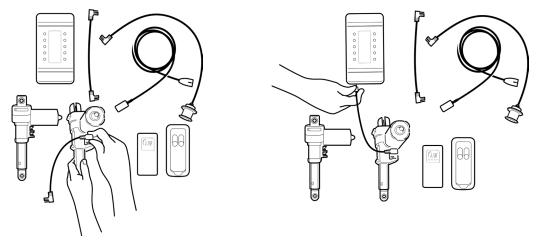
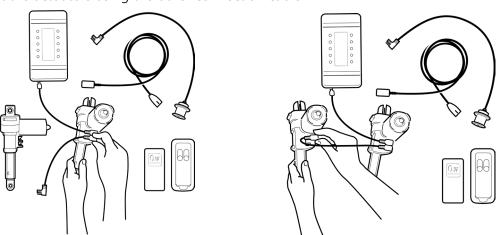


Figure 3 All parts of the LA10/BA002 system

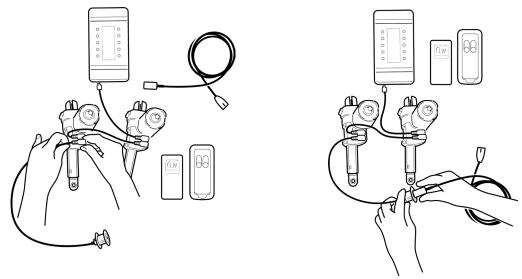
Plug one of the connection cables into one of the actuators and connect it to the BA002.



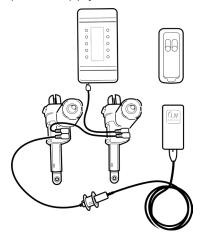
Connect the actuators using the other connection cable.



4. Connect the Charging Point CP001/002/003 to one of the actuators and connect the power cable.



5. Connect the power cable to the power supply.



Mounting the BA002



Do not pack the BA002 in heat insulating material. Ensure minimum 20 mm distance to objects close to the BA002 to allow it to emit heat through its surface to the surroundings.

Without mounting bracket

- Mount the BA002 using two cable ties.
 See Dimensional drawings in the <u>Data Sheet</u> for placement of grooves for the cable ties.
- 2. Fasten the cable ties around a solid part of the application to fixate the BA002 properly.

With mounting bracket

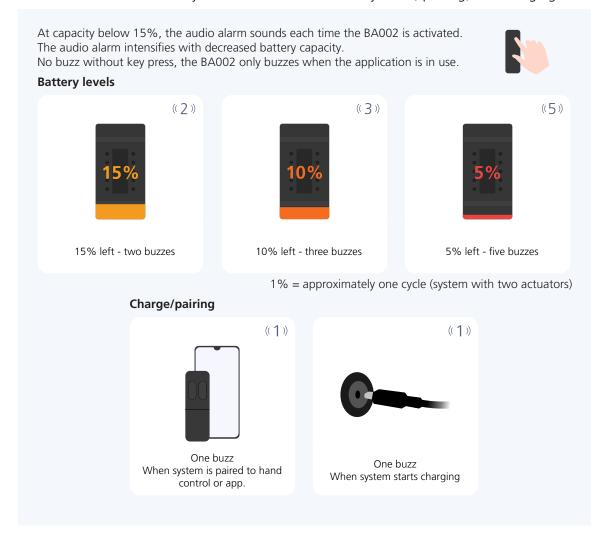
- 1. Remove the mounting bracket.
- 2. Mount the bracket using four screws with a head diameter of 10 mm (8 to 10 mm can be used).
- 3. Fasten the mounting screws (max. torque 1 Nm).
- 4. Slide the BA002 onto the mounting bracket.

Note:

The surface to which the battery box is mounted should have an evenness better than ±0.5 mm

Audio indication overview

The BA002 has an audio indication system which indicates battery levels, pairing, and charging.





Charging the BA002

The BA002 can be charged via the Switch Mode Power Supply SMPS001 or SMPS006 using a DC cable with 2-poled Mini-Fit plug. LINAK offers various cables with straight plug which can be used (e.g. 0705894-200).

Notes:

- Charging will not start if the capacity is above 80 %.
- The BA002 has a built-in protection to ensure battery and system lifetime.
- The battery limits the discharge current to approx. 6 A.
- The battery can go into a deep sleep mode. See <u>Deep sleep mode</u> to see what that means and how to exit this mode.

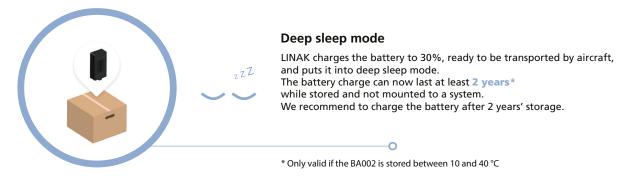


Transportation by plane is not allowed for batteries that are more than 30 % charged.

Deep sleep mode

The battery is designed to reduce the risk of deep discharge. To make it possible for the battery to be stored for a long period of time without being discharged, it goes into sleep mode when not used for more than four weeks.

• All BA002 batteries will be in deep sleep mode during transportation.



- To wake the battery up, connect the charging cable.

 If already connected, remove the charging cable, wait 60 seconds, and plug it back in.
- When not connected to a system, the BA002 will go in deep sleep mode after 65 minutes.
- When the BA002 is connected to a system, it will go in deep sleep mode when not used for 30 days.

LINAK® will remedy defective Li-Ion batteries built into LINAK products in accordance with the terms stipulated in the LINAK Li-Ion battery disclaimer available on the LINAK website. LINAK explicitly disclaims all other remedies and liability.



Mounting the Charging Point CP002/CP003

No screws are needed to mount the charging point.

The CP002 requires a hole of 24 mm in diameter and the CP003 a hole of 30 mm in diameter.

1. From the front, simply push the charging point through a hole in the fabric. From the back, click the ring on and tighten until the charging point is properly fixed.

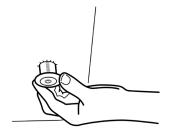


Figure 4 Front

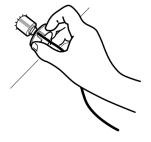


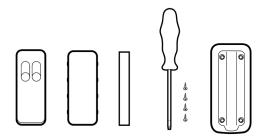
Figure 5 Back

Mounting the BP10 bracket

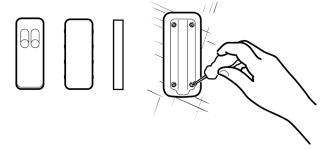
The bracket consists of four parts. A screwdriver and four screws are needed for mounting the bracket.

Screw specifications:

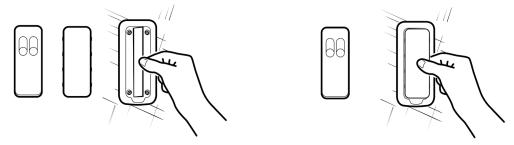
Countersunk 45°, flat head, max. ø3.5 mm.



1. Use four screws to mount the main part of the bracket on the recliner.



2. Place the metal plate in the bracket first and then click the plastic top into the bracket.



3. Place the control unit in the bracket.



The control unit is attached to the bracket via a built-in magnet. It can easily be removed from the bracket and used as a remote hand control.

Pairing the control unit

When connecting the system to power, it will automatically be in pairing mode for three minutes. The pairing mode stops when a paired control unit sends a command.

1. Press the two upper buttons of the control unit to pair it with the system. For BP11: press the 'up' and the 'down' buttons.





If you need to get the system into pairing mode, unplug the system, wait for 10 seconds, and plug the power cable back in.



There is no need to initialise the system when setting it up the first time. You just need to connect it and pair the control.

Initialising the system

- 1. Push the "down" button on the control unit for the actuator that must be initialised and drive the actuator to its inner position.
- 2. Release the button on the control unit.

If more than one actuator is connected, the same must be done with the other channels by pressing the matching "down" button on the control unit. The system is now ready for use.

Re-initialising the system

If the system needs to re-initialised, please follow this procedure:

1. Press and hold the "down" button for 10 seconds to make the actuator initialise – the actuator can now drive outwards.

Replacing the battery



Caution/Warning



Contains coin battery



Warning

This product contains a coin battery. A coin battery can cause serious internal chemical burns if swallowed. Swallowing or insertion of a battery into the body may lead to serious injury or death in as little as 2 hours, due to chemical burn and potential perforation of the esophagus.



Warning

Keep new and used batteries out of the reach of children. If you think a battery might have been swallowed or placed inside any part of the body, seek immediate medical attention.

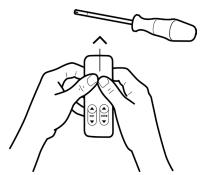


Warning

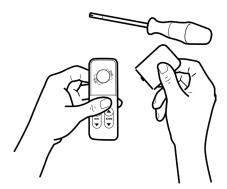
Dispose of used batteries immediately and safely.

The CR2032 battery can be replaced when needed.

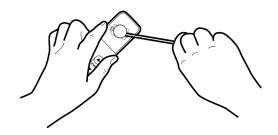
1. Press the battery cover down and slide to loosen it.

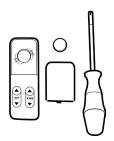


2. Remove the battery cover.

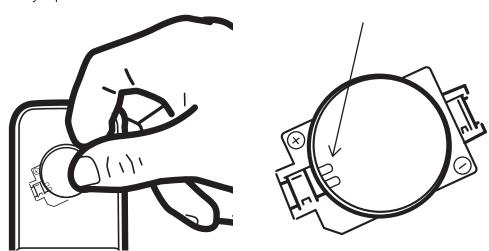


3. Use a screwdriver to remove the old battery.

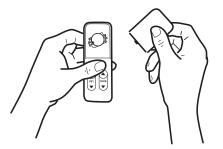


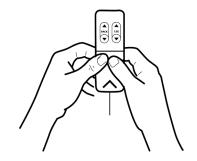


4. Insert a new CR2032 battery. Ensure that the battery is placed under the positive battery terminal and that the terminal is visible after the battery replacement.



5. Put the battery cover back in place.





Disposal of LINAK products

As our 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
Column / actuator	Spindle and motor	Metal scrap
	Plastic housing	Plastic recycling or combustion
	Cable	Cable scrap or combustion
	PC boards	Electronics scrap
Control box	PC boards	Electronics scrap
	Plastic housing	Plastic recycling or combustion
	Cable	Cable scrap or combustion
	Transformer	Metal scrap
Control	Plastic housing	Plastic recycling or combustion
	Cable	Cable scrap or combustion
	PC boards	Electronics scrap

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

Main groups of disposal

Product main groups	Metal scrap	Cable scrap	Electronics scrap	Plastic recycling or combustion	Comments
Linear Actuator LA10	X	X	X	X	
Bluetooth® dongle BLE2DC			X	X	
Control Unit BP11/BP12/BP13			X	X	
Charging Point CP001/002/003		Х	Х	X	
Battery Box BA002			Х	Х	
Switch Mode Power Supply SMPS			Х	Х	



Disposal of batteries

Details regarding safe disposal of used and leaking batteries:

Batteries should be disposed in accordance with appropriate federal, state and local regulations. LINAK recommends that used or leaking batteries are disposed through local recycling systems. Please do not throw used or leaking batteries in normal household waste or in nature. This will cause damage to the environment.

How to deal with leaking batteries

Leaking batteries should be disposed as described above.

If leaking batteries are discovered in the product, the batteries must be removed at once to minimise damage to the product. If leaking batteries are left in the product, it might become defective.

It is recommended to use plastic gloves when handling leaking batteries. The contents of leaking batteries can cause chemical burns and respiratory irritation.

If exposed to the contents of a leaking battery, please wash with soap and water. If irritation persists, please seek medical attention. In case of eye contact, please flush eyes thoroughly with water for 15 minutes and seek medical attention.

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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