

# TWINDRIVE<sup>®</sup> TD1 280 (Analogue)



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# Preface

Dear User,

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

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.

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

We are sure that your LINAK product/system 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 LINAK product/system, you are always welcome to contact your local dealer.

LINAK subsidiaries and some distributors situated 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 products/systems can affect their operation and durability. The products are not to be opened by unauthorised personnel.

The User Manual has been written based on our present technical knowledge. We are constantly working on updating the information and we therefore reserve the right to carry out technical modifications.

**LINAK A/S**

## Important information

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



### Warning!

Failure to comply with these instructions may result in accidents involving serious personal injury.



Failing to follow these instructions can result in the product being damaged or being destroyed.

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## 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.



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

### **Before installation, reinstallation, or troubleshooting:**

- Stop the TD1
- Switch off the power supply and pull out the mains plug.
- Relieve the TD1 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 is correct before the system is connected to the mains. (See TD1 label on page 10).
- System connection. The individual parts must be connected before connection to the mains.

### **During operation**

- 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, which corresponds to their IP protection.
- 

## **Repairs**

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



#### **Warning!**

If any of the TWINDRIVE® products are opened, there will be a risk of subsequent malfunction. Furthermore the warranty will not cover, when the product has been opened by unauthorised personnel.



#### **Warning!**

The TWINDRIVE® systems do not withstand to cutting oil.



#### **Warning!**

If the supply cable is damaged the product must not be used or connected to the mains. The product has to be replaced by a new to avoid a safety hazard.

## Misc. on the TWINDRIVE® TD1 280 system

This system is a TWINDRIVE system developed for leisure beds and for indoor use in private homes.



We advise children and disabled persons not to use the TD1 system without supervision.

### Warranty

There is 36 months' warranty on the TWINDRIVE® products TD1 and HB10/HC10/HB20 against manufacturing faults calculated 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 system must only be cleaned with a firmly wrung cloth. The cleaners and disinfectants must not be highly alkaline or acidic (pH value 6-8).**



**It is not allowed to use solvents for cleaning up.**

## Description of the TWINDRIVE® TD1 280 system

Each TWINDRIVE® TD1 unit consists of 1 - 2 internal motors and a built-in control box function which makes it a very compact unit. The mains cable is fixed. Only the handset and optional 1 - 2 external actuators must be connected.



### Application of the TWINDRIVE® TD1 280 system:

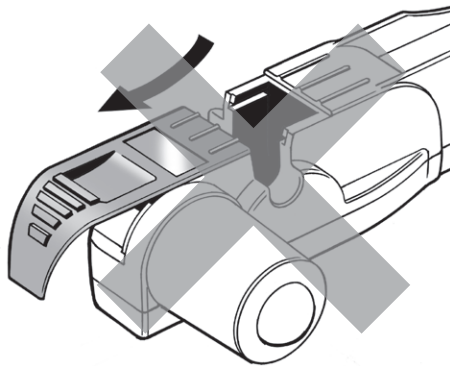
Irrespective of the load the **duty cycle 10% ~ 6 min./ hour or max. 2 min. at continuous use** stated in the data sheets, must **NOT** be exceeded as this will result in a superheating of the motor and the spindle nut. Exceeding the duty cycle will result in a dramatic reduction of the life of the system.



Do not turn the system if it is not mounted in a bed.



Do not open the closing device on the TD1 during operation as this may cause malfunction and possibility of personal injuries.



Be sure that the closing devices are in place before the TD1 is used.

The TWINDRIVE® TD1 system range contains the following products:

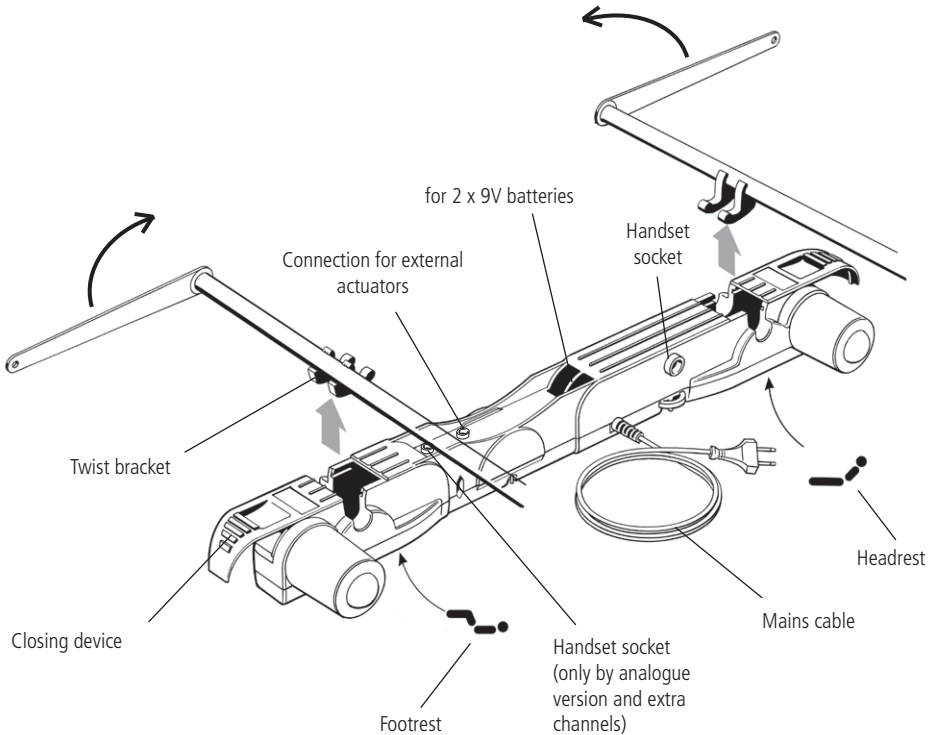
- 1 TD1
- 1 HB10/HC10/HB20

Optional

- 9V batteries
- 1 - 2 actuators (LA27 or LA31)
- Mains cut-off



## Mounting guidelines for the TWINDRIVE® TD1 280 system



Connect the cable from the 2 x 9V batteries to the TD1 when connecting the mains.

Figure 1  
(Assembly overview)

## Mounting the handset

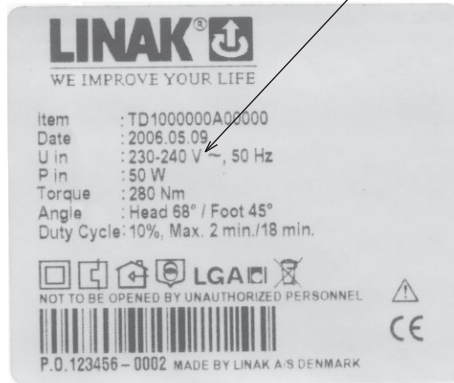


Recommended usage of the strain relief the PCB. Otherwise the DIN-plug and print might be damaged when overstraining the cable.

## Connection to the mains

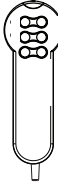
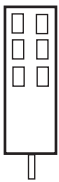


Please note that the TD1 must only be connected to the voltage stated on the label.



## The HB10/HC10/HB20 with cable

Use of the handset



up/down operational  
(1-2 channels)

common operation up/down (option)

the up/down operation is only activated when holding the button down.

### DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

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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 jk@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

# Emergency lowering via 9V batteries

## Purpose of the function:

The system is equipped with 2 x 9V batteries with the purpose of being able to lower the backrest and footrest one time of a TD1 in case no mains supply is available.



**To ensure the optimum operation, run the backrest and footrest individually and only downwards. Simultaneous drive will in most cases not be possible.**

## Correct way to use the functionality:

- Be sure always to use new alkaline batteries of good quality.
- Run one motor at a time, and only downwards (upwards drive will discharge the batteries unnecessary and the bed will not drive due to load)
- Press backrest down key and keep it pressed until it is in the flat position
- Release the key and wait 60 sec in order to let the battery recover
- Press the footrest down key and keep it pressed until it is in the flat position
- Release the key.
- If the key is released during the lowering, always wait 60 sec before pressing the key again.
- Replace the batteries after having used the emergency lowering function. Batteries that have not been used must be changed after approx. 3 years.



**The emergency lowering function is designed to work in normal living room temperature of approx. 15-25°C. At lower temperatures it might not be possible to use it.**

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## Exchange/connection of 9V batteries (Type 9V 6F22 or 6LR61)

1. Remove the clamps from the battery (Figure 3).
2. Use a blunt instrument with a diameter of Ø6 mm to remove the battery (Figure 4).
3. Push the battery upwards via the two holes in the bottom of the unit (Figure 5).



Figure 3

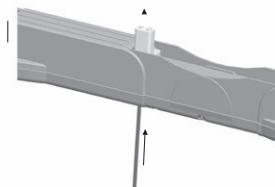


Figure 4

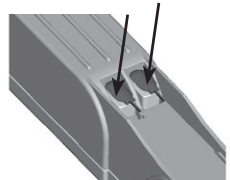


Figure 5

## 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 recommend that used or leaking batteries are disposed through local recycling system. 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 minimize damage to the product. If leaking batteries are left in the product it might become defect.

It is recommended to use plastic gloves when handling leaking batteries. The contents of a 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."

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## Accessories and repair

### Ordering accessories

Order from your nearest LINAK® dealer or subsidiary.

### Accessories

Please contact your nearest LINAK dealer for information.

### Repairs

Systems should only be repaired by an authorised LINAK servicecentre or engineer. Systems to be repaired under warranty must be sent to an authorised LINAK service centre.



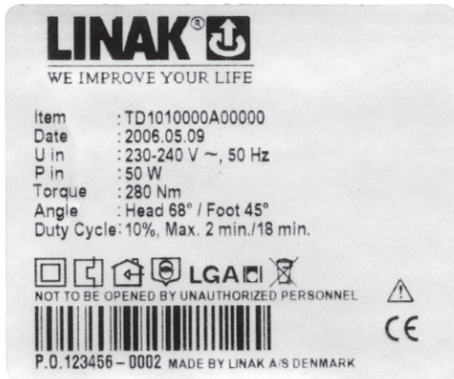
#### **Warning!**

By unauthorised opening of the system there is a risk that it may malfunction at a later date. Furthermore, the warranty will not cover, when the product has been opened by unauthorised personnel.

### Spare parts

Please contact your nearest LINAK dealer for information on spare parts.

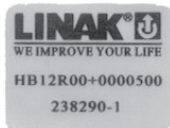
Label for the TWINDRIVE® TD1 System:



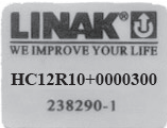
Label for the LA27



Label for the Handset HB10:



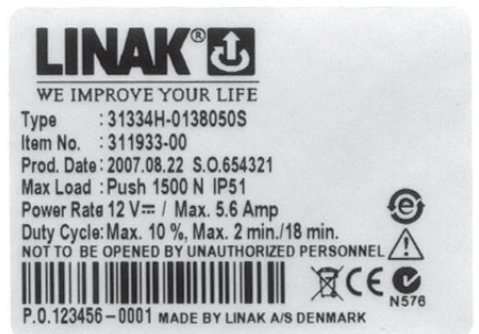
Label for the Handset HC12:



Label for the Handset HB20:



Label for the LA31



## 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 to disassemble our product into as many fractions as possible at the disposal and try to make it recyclable. As examples of main groups within waste fractions we can mention:

Metal, plastic, cable shoe, combustible waste, and collection for recovery.

Some of these main groups can be subdivided, e.g. metal can be divided into iron, stainless steel and aluminium, and alloy steel. Plastic can e.g. be divided into ABS, PA, PE, and PP.

As an example of sorting, please find below a list stating in which recycling groups the different components of LINAK's products ought to be placed:

Product	Components	Recycling group
<b>Actuator:</b>	Spindle and motor Plastic housing Cable	Scrap Plastic recycling or combustion Cable scrap or combustion
<b>TWINDRIVE:</b>	PCB Plastic housing Cable Trafo Batteries Spindle and motor	Electronics scrap Plastic recycling or combustion Cable scrap Scrap Recovery Scrap
<b>Handset/Control:</b>	Plastic housing Cable PCB	Plastic recycling or combustion Cable scrap 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	Scrap	Cable scrap	Electronics scrap	Plastic recycling or combustin	Comments
LA27	X	X		X	The metals can be sorted for steel or aluminum
LA31	X	X	X	X	The metals can be sorted for steel or aluminum
TD1	X	X			The metals can be sorted for steel or aluminum
HB10		X	X	X	
HC10		X	X	X	
HB20		X	X	X	

## Mains cut-off (optional)

The mains cut-off function disconnects the power to the TD1 system, if the system is not used. The mains cut-off is 100% maintenance-free.

The mains cut-off is available in 2 versions - an external version or an internal version.

The external version is a small box placed on the plug of the mains cable.

The internal version is integrated in the TD1 and thereby not visible. TD1 systems with internal mains cut-off are labelled TD1XXXXXXXXXX2XX.

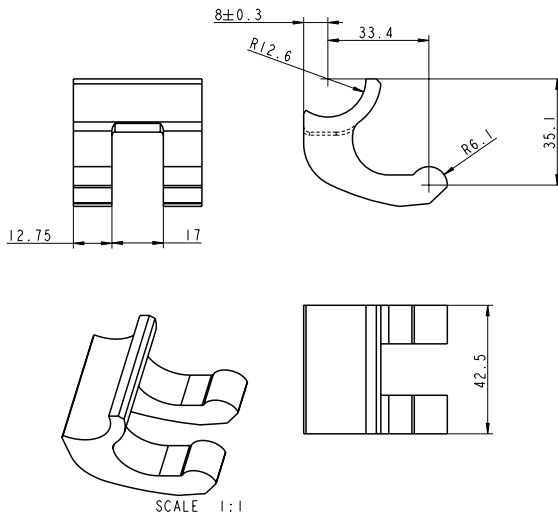


**Please observe that TD1 systems with mains cut-off do not work in houses with "Hausfreischaltung".**

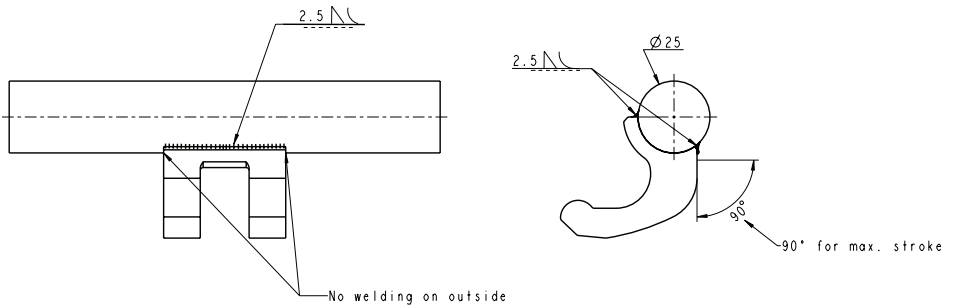
## How to mount (in chronological order):

### Welding the twist bracket on the frame (0701030)

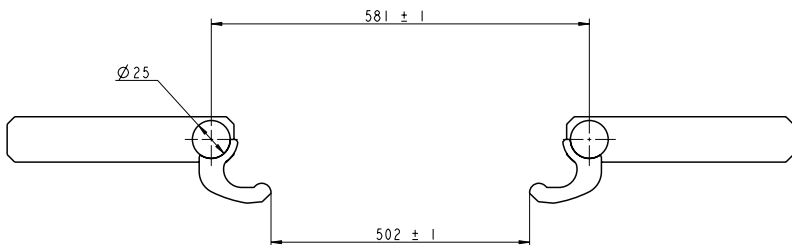
1) For the TD1 it is important that one does not weld on the outside of the twist bracket because there is not space for a welding seam in the motor housing. One may weld the bracket along the whole length of its ends.



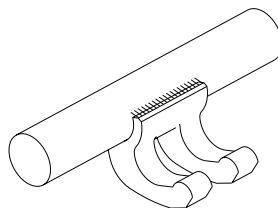
2) To maintain the correct angle of rotation of the headrest and the footrest it is important that the twist bracket is welded according to the above instructions. Non-compliance with the instructions could lead to a smaller angle of rotation or in a worst case damage to TD1.



It is very important that the axle distance is kept.



Example for correct welded twist bracket to the bedframe.

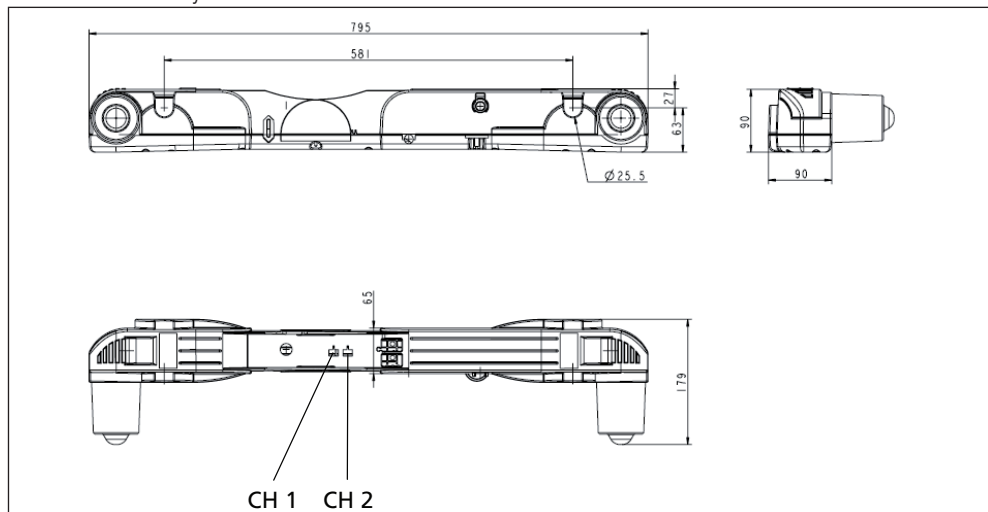


3) Before mounting, both mounting brackets must be pulled out to their outer position by pushing them back. This gives freedom of movement to the bed bracket. Mounting is done by pushing the bed bracket into the TD1 unit and thereafter pushing the mounting brackets back again.

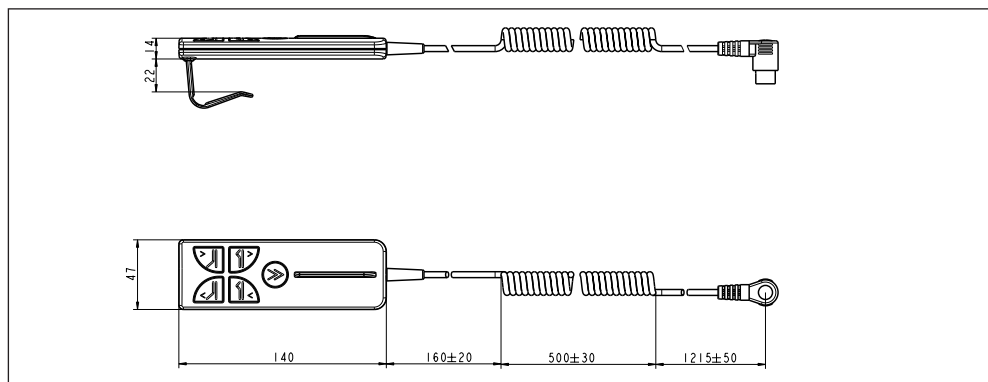


# DRAWING APPENDIX

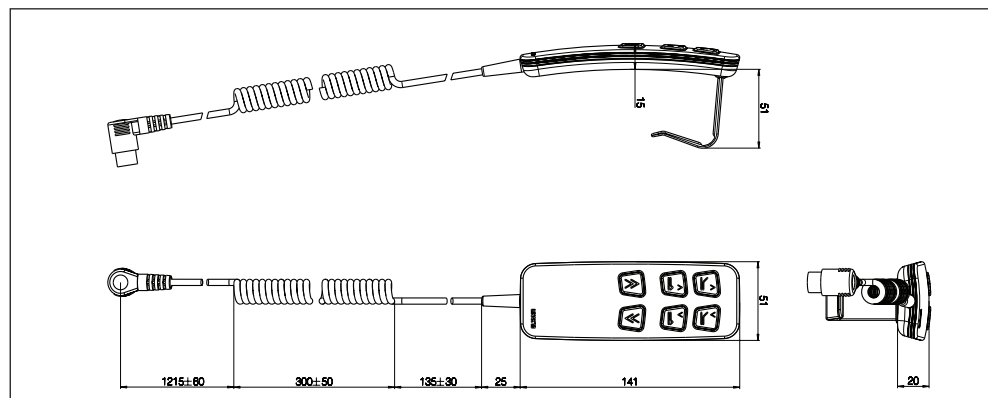
TWINDRIVE® TD1 System:



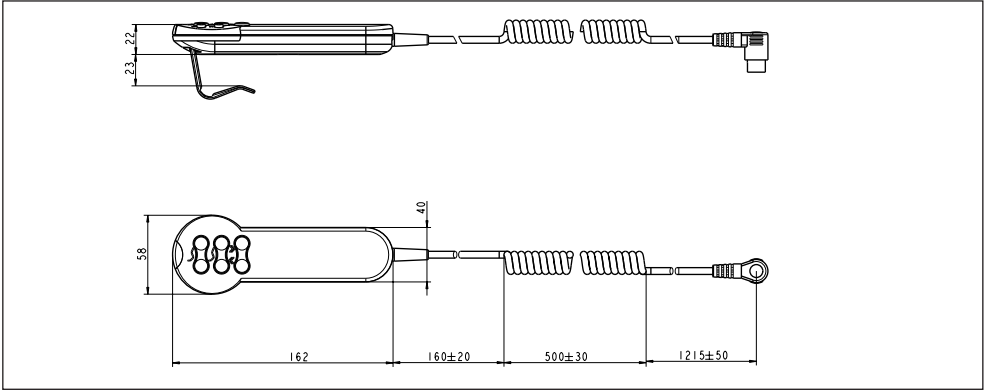
HB10



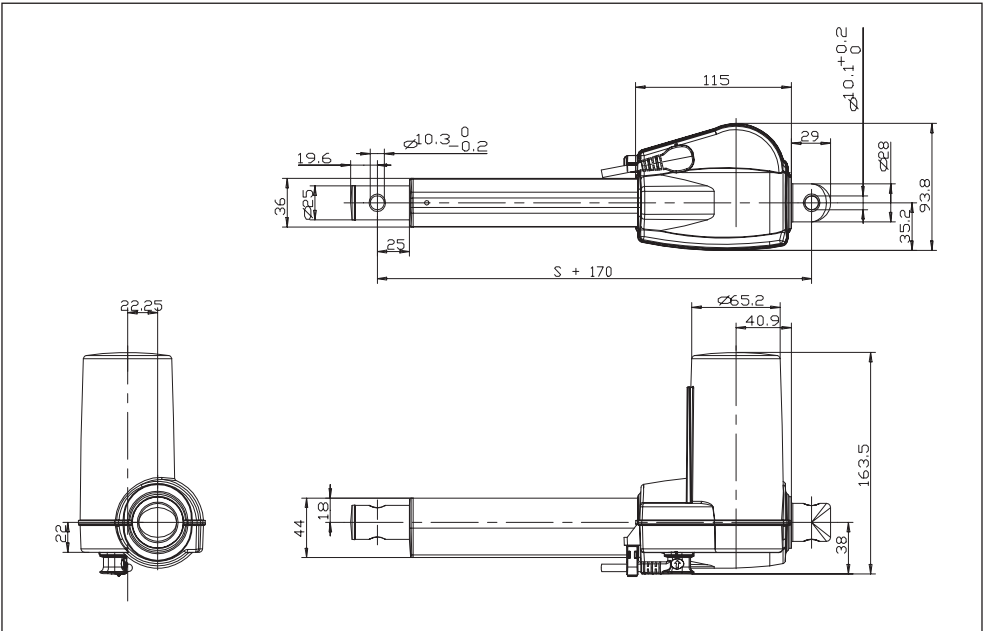
HC12RF

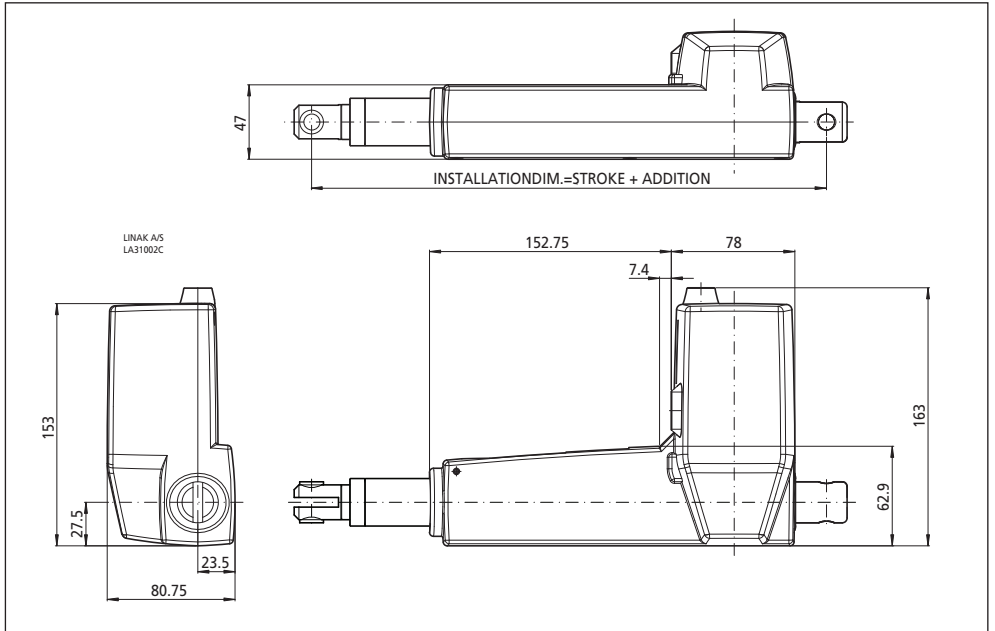


HB20



LA27





## 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, as 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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