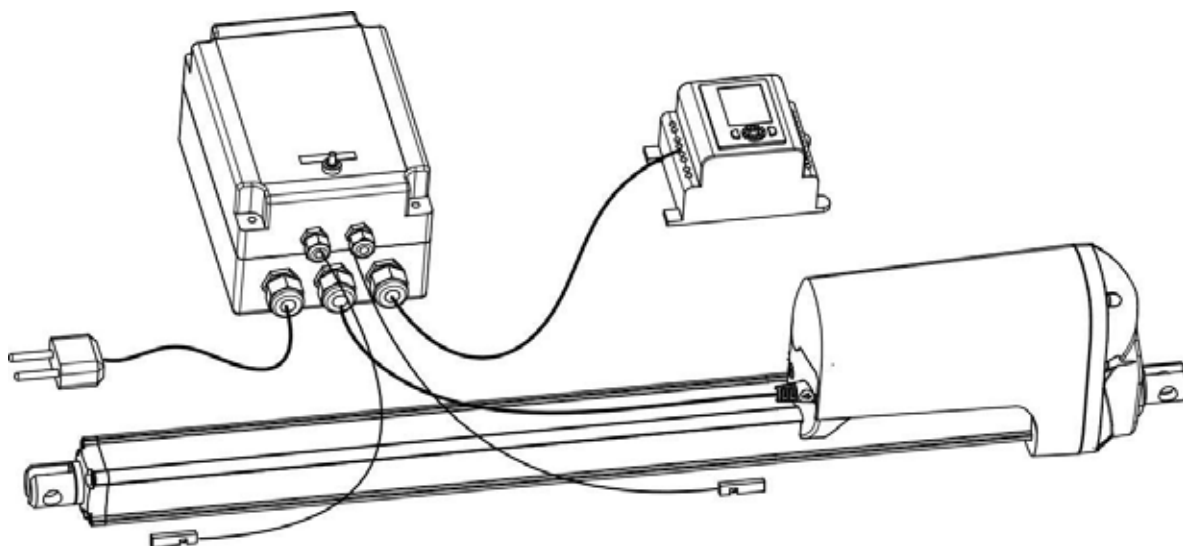


INSTALATION INSTRUCTION



ACO FUNKI A/S
Kirkevænget 5
DK-7400 Herning

Tel. +45 9711 9600
www.acofunki.com
www.egebjerg.com

Introduction

Dear machine fitter,

Thank you for choosing an actuator system from LINAK®. LINAK systems consist of hi-tech products based on many years of experience in the development and manufacture of actuators, electric control boxes, control systems and chargers.

TECH-systems comprise LINAK actuators and a motor control unit developed and produced by a third party manufacturer. The function and operational reliability of TECH-systems have been tried and tested in a wide range of situations. In addition we continuously improve our products and systems so as to accommodate customer requirements.

These Instructions for Installation and Use describe how to install, connect and operate a LINAK TECH-system in order to ensure a trouble-free, user-friendly final product.

Before our products leave the factory, they are subjected to a battery of function and quality tests. In the unlikely event that you have difficulties with your systems, please call
ACO Funki A/S on (+45) 97 11 96 00

LINAK provides a warranty on all its products and systems. However, this warranty is issued on condition that the product is used in accordance with the specifications, that maintenance is performed correctly, and that any repairs are carried out at a workshop that is authorised to repair LINAK products.

Any alterations to the installation and use of LINAK systems may affect their operability and durability. The products must not be opened by unauthorised persons.

ACO Funki A/S
Kirkevænget 5
7400 Herning

Important information

Important information concerning LINAK products is given under the following headings:



Warning! Failure to comply with these instructions may result in accidents leading to serious personal injury.



NB! Failure to comply with these instructions may result in damage to or destruction of the product.

Warranty

The LINAK warranty covers manufacturing faults in the products, calculated from the date of production. For additional information about the warranty period, please contact LINAK Danmark A/S. The warranty is limited to the value of the LINAK product.

The LINAK warranty is only valid if the system is unopened and has been used correctly. The control box and control unit must not be subjected to rough handling, as this will void the warranty.

Safety instructions

Please read the following safety information carefully. Everyone who is to connect, install or use the system must have received the necessary information and have access to these instructions.

LINAK recommends that the actuator is used for pressure applications rather than tension applications.

It is essential that everyone who is to connect, assemble or operate the systems receives the necessary information and has access to these instructions.

Before fitting, removal or troubleshooting:

- Stop the actuator.
- Disconnect the power supply or remove the mains plug from the socket.
- Relieve the actuator of any load that may be released during the work.

Before start-up:

- Make sure that the system has been installed as described in these instructions.
- Make sure that the voltage to the motor control unit is correct before connecting the system to the power supply
- System connection. The individual parts must be connected before the motor control unit is connected to the mains.

During operation:

- If the motor control unit emits unusual sounds or smells, disconnect the mains power and any external battery.
- Make sure that the cables are intact.
- Disconnect the mains cable to mobile equipment before it is moved.
- The products are suitable for use both indoors and outdoors. However, you should always check that individual products have the appropriate IP sealing class. (See product label.)

Installation Instructions for TECH-system Feed Management



Warning!

The following applies if the actuator is used to apply tension in a machine that carries a risk of personal injury:

As the manufacturer of the final machine, you are responsible for implementing suitable safety measures to prevent the risk of personal injury in the event of actuator failure.



Warning!

Please note that in all machines in which an actuator is to be involved, steps must be taken to prevent personal injury – such as the risk of crushing fingers.



Warning!

The plastic components in the system cannot withstand the effects of cutting oil.

Classification:

The equipment is not suitable for use in the immediate vicinity of a flammable, anaesthetic mixture containing air, oxygen or laughing gas (nitrous oxide).

Environmental conditions

Storage and transport	
Operating:	
Temperature	5 °C to 40 °C
Relative humidity	20% to 90% @ 30 °C - not condensing
Atmospheric pressure	700 to 1060 hPa
Storage:	
Temperature	10 °C to 50 °C
Relative humidity	20% to 90% @ 30 °C - not condensing
Atmospheric pressure	700 to 1060 hPa

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Installation Instructions for TECH-system Feed Management

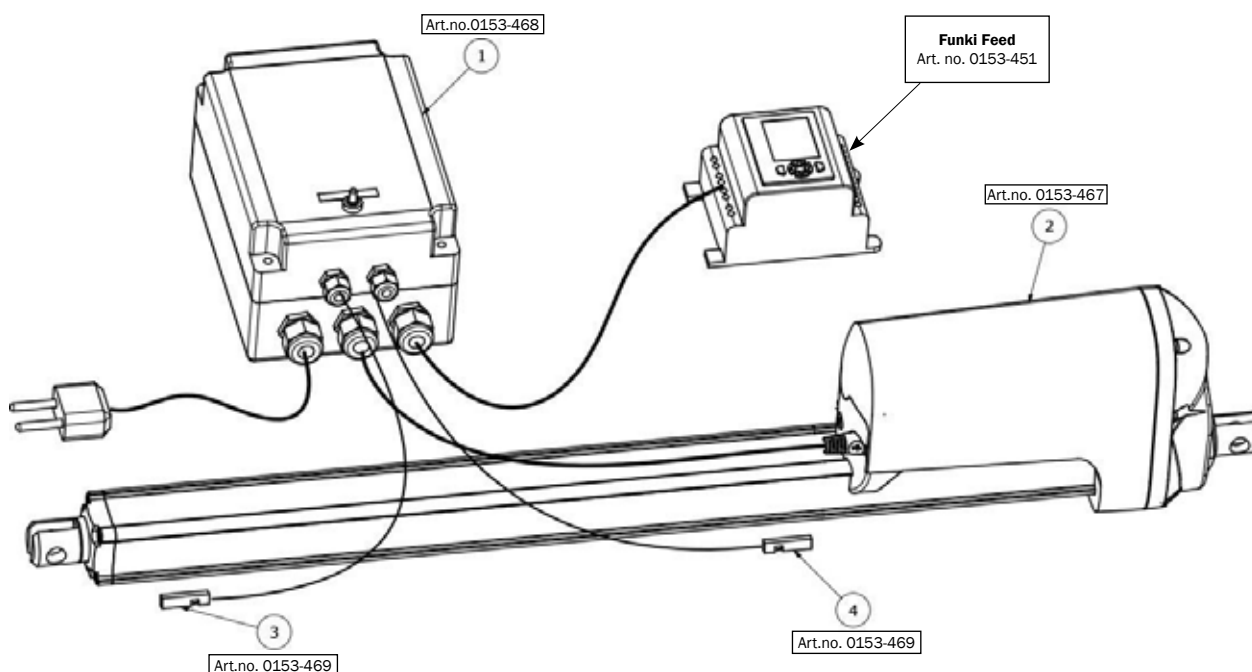
Technical data

TECH-system Feed Management is comprised of a motor control unit and a LINAK Type LA36 /LA37 Actuator.

Description of the system

The system is designed for automatic livestock feeding in stables. Using a weekly timer or timer- controlled program, the system sends a signal to the feed management system to indicate when feeding is required. The system is comprised of 1 motor control unit and 1 actuator, which are designed for integration into a feed management system. The actuator activates a damper which opens to allow a specific quantity of animal feed to pass. The quantity of feed passing the damper is determined by the length of time the damper is open.

Using 12 adjustable parameters, the feed management system can be set to ensure that the actuator movements correspond with the feeding system in question. The parameters can only be changed using a TR-EM-236 portable serial interface handset. Changes are usually made before the complete system is commissioned and when it is subsequently readjusted. (See below).



Motor control unit: (pos.1)

Type designation:	0153-468
Actuator connection:	1 actuator
Actuator power limit:	15 A duty cycle 100%
	30 A at start
Actuator voltage:	24 V DC
Supply voltage to PCB:	10–35 V DC smoothed voltage
Power limit, setting:	0.1-20 A
Ramp times (start/stop):	0-5 seconds
PWM frequency:	2 kHz
Controller input:	0-5.5 V; 0-11 V; 0...20 mA
Operating temperature (Ta):	-40 to 60 °C

Motor control unit fitted in box with power supply: Order no.: **0153-468**

Actuator (pos. 2)

The system is compatible with the LINAK type LA36/LA37 actuator, which is available with stroke lengths from 50-999 mm.

(see the appropriate product data sheet at www.linak.com for additional information)

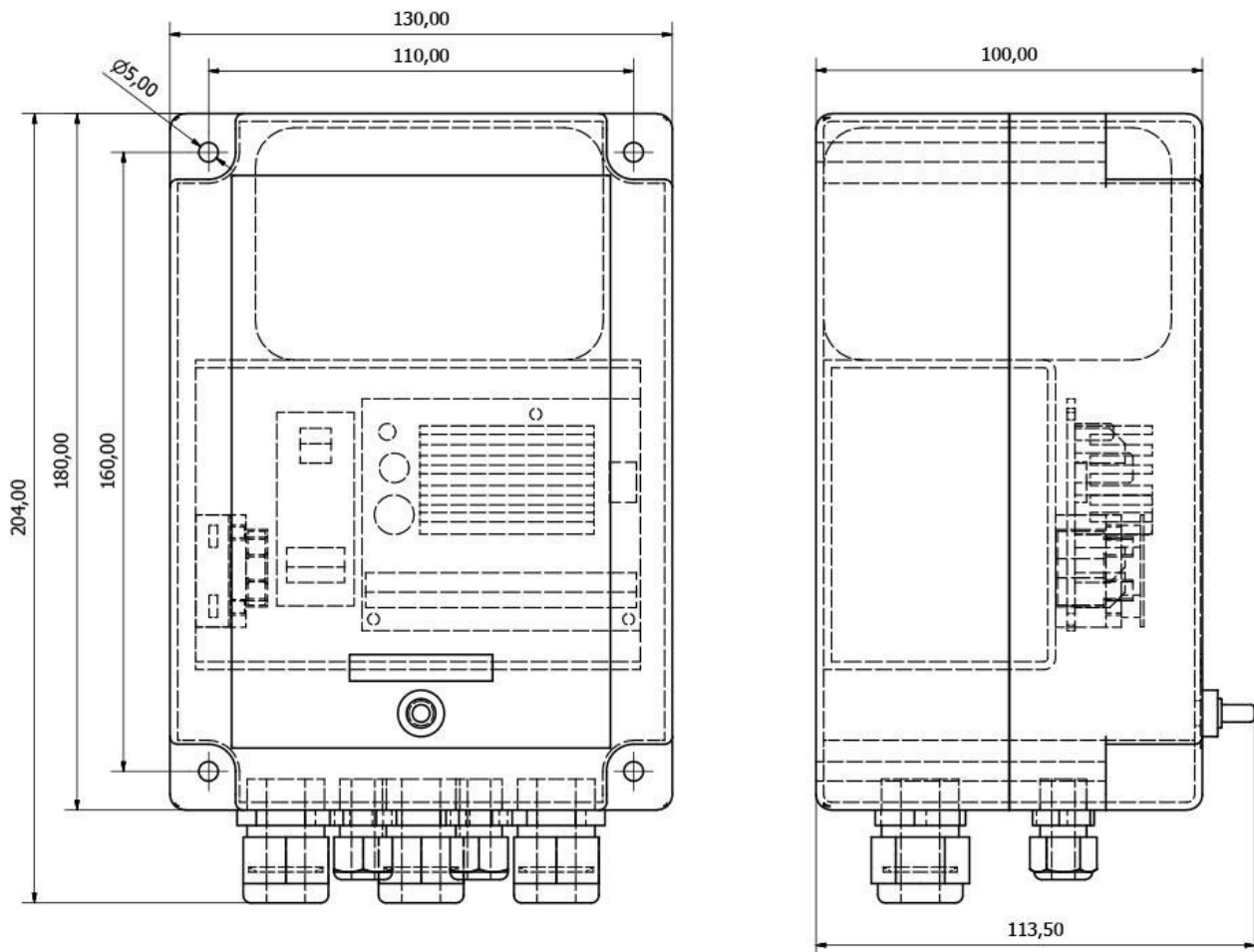
Reed switch: (pos. 3 + 4)

The actuator must be fitted with external reed switches to indicate the open/closed positions. Reed switches should be ordered separately: Order no.: **0153-469**

Dimensions

The 0153-468 motor control unit fitted in a plastic box with integrated power supply

Weight: 2.5 kg



Installation Instructions for TECH-system Feed Management

TRANSLATED FROM DANISH ORRIGINAL DOCUMENT

Declaration of Incorporation for partly completed machinery

Machinery Directive 2006/42 / EC Annex II B

The undersigned manufacturer, and is authorized for the preparation of the technical documentation for partly completed machinery and, extradition upon duly motivated request from the technical file:

LINAK Denmark A / S
Mønstedsvvej 9
8600 Silkeborg

The undersigned hereby declares that:

Description: **Feeding management**

Type: TREM-0000-0044-GB

Consists of the following:

LINAK Actuator Type: **LA36** and

Engine management: TREM-0000-0044-DK

Operation:

Manual: Internal switch

Auto: Time management

Is in compliance with the following essential health and safety requirements of the Machinery Directive 2006/42 / EC Annex I:

1.2.1 operating system; 1.2.2 Operation; 1.2.3 Commissioning; 1.2.4.1-Stop; 1.2.5- Selecting the operation mode;
1.2.6-Failure of the power supply; 1.3.2-risk of breakage during operation; 1.3.7- Prevention of risks related to moving parts;
1.3.8-Selecting protection ifb.m. moving parts.

Is in compliance with the following EC directives:

- EMC Directive 2004/108 / EC

Partly completed machinery must not be put into service until the final machinery which it will be assembled, has been consistent assessed and found to comply with all relevant health and safety in 2006/42 / EC and other relevantdirektiver.

Date

Silkeborg

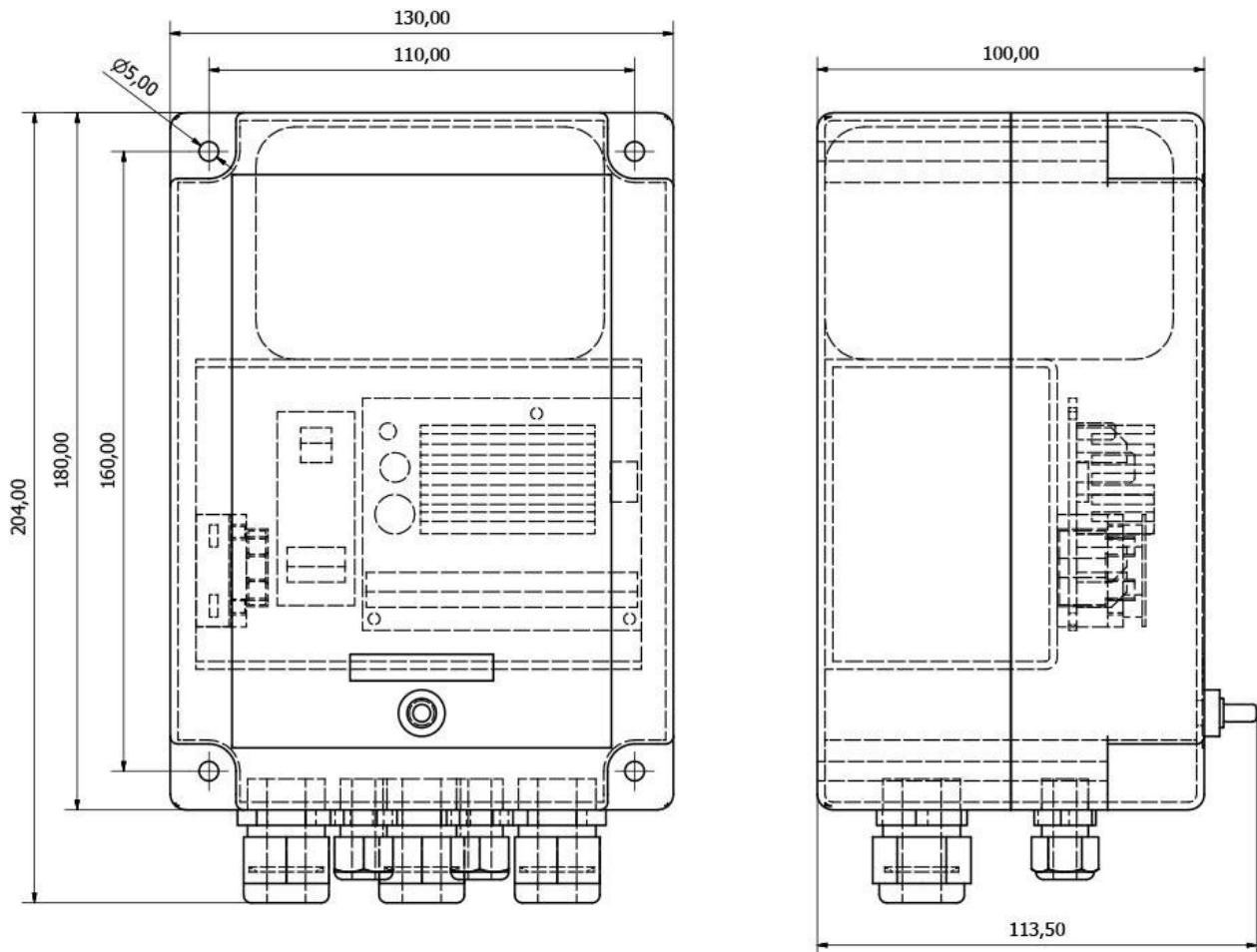
Name of signatory and position
technical manager
Lars Omme

Connection and installation

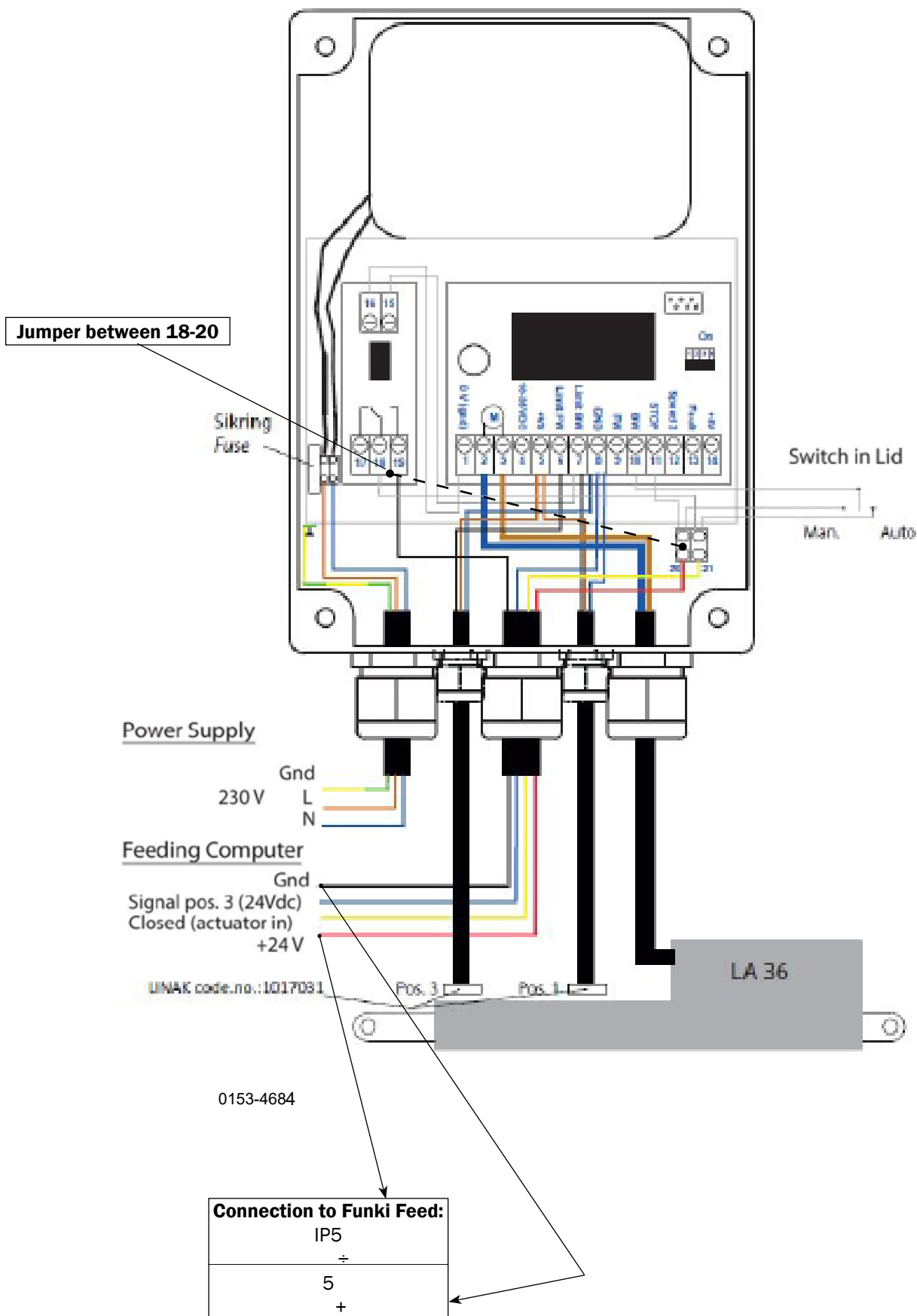
Screw terminals are used to connect the motor control unit. To connect a feeding computer and/or weekly timer, see following pages.

Fitting the motor control unit

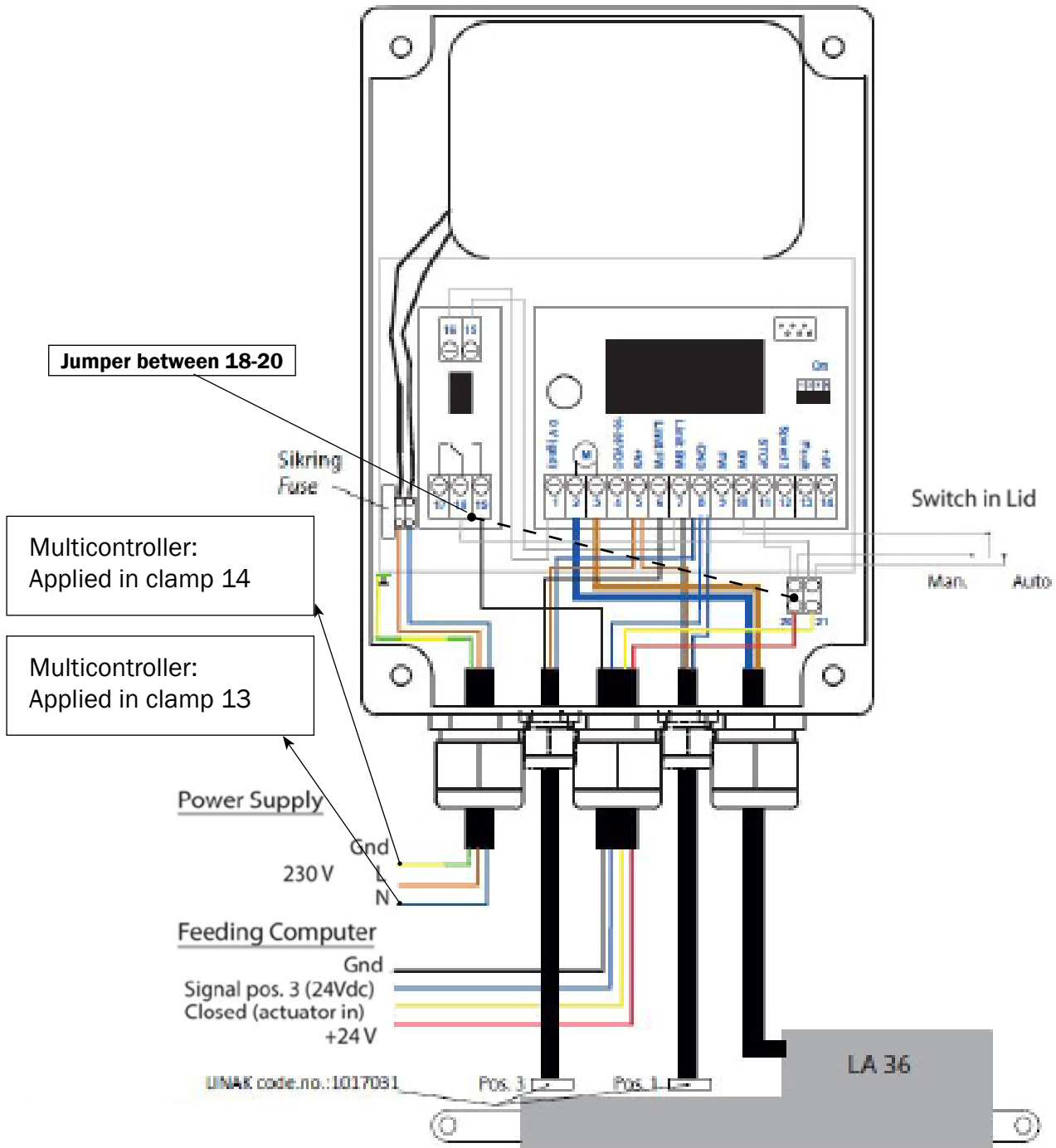
Taking into account the safety issues associated with operating the actuator manually, the motor control unit is best fitted using 4 screws on a level surface as close to the actuator as possible.



Connecting the motor control unit to a feeding computer

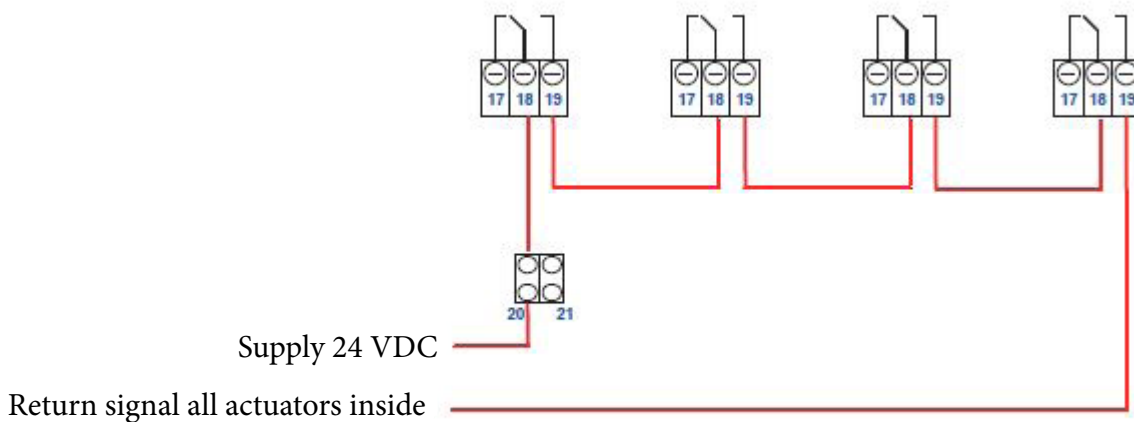


Connecting the motor control unit to a multicontroller



0153-4684

Installation Instructions for TECH-system Feed Management






Function description

A weekly timer or feeding computer gives the start signal to the feed management system. The actuator runs forward until it reaches the reed switch which registers the damper's open/closed position. If the control signal is lost, the actuator returns automatically to its start position. The actuator returns to the reed switch to activate closed position, which in turn sends a signal to a potential-free relay to the feeding computer. To ensure against faulty use, the control unit is engineered with integrated safety measures. The start signal must be ON for 2 seconds before the actuator moves into position and there must always be supply voltage to terminal 11. If there is no input to terminal 11, the motor control unit will stop. This function ensures that the motor control unit stops if the feeding computer is closed down. If the control signal is lost during movement forward to the open position, the motor control unit will stop and the actuator will not return before it has been fully extended and has activated the reed switch (open position).

Start/operation

Select operating mode on the switch in the lid. Select Manual, Stop or Automatic mode.

-  STOP.
If the switch is in the middle position, the system will stop and the actuator will return to the CLOSED position (actuator in).
-  MAN.
If the switch is in the MAN. position, the actuator moves forward into the OPEN position (actuator out) and remains there until the switch is switched to the STOP -position.
-  AUTO.
When the switch is in the AUTO. position, the 24-hour clock timer will activate the actuator automatically.

Maintenance

For maintenance and repair instructions, including setting the motor control unit's parameter values, refer to the Feed management instruction manual.

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

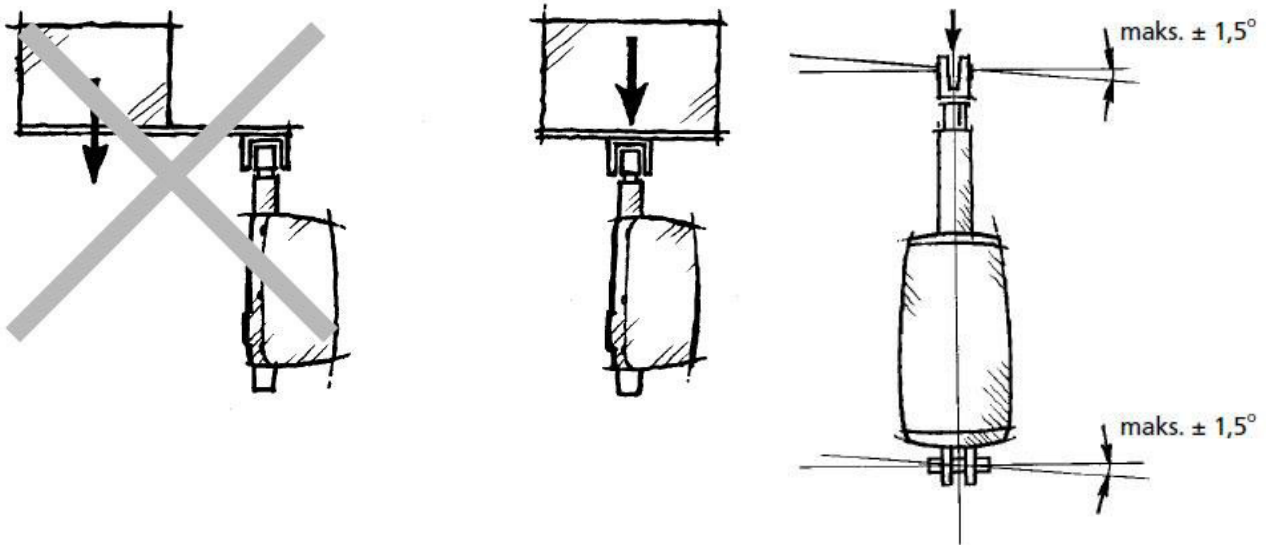
Fitting an actuator

When fitting the actuator, it is important to make sure that the actuator can move freely along the full stroke length and that it is not without constricted by the mechanical construction. It is also important to ensure that the machine is subject neither to uneven twisting and traction nor to unevenly distributed load.



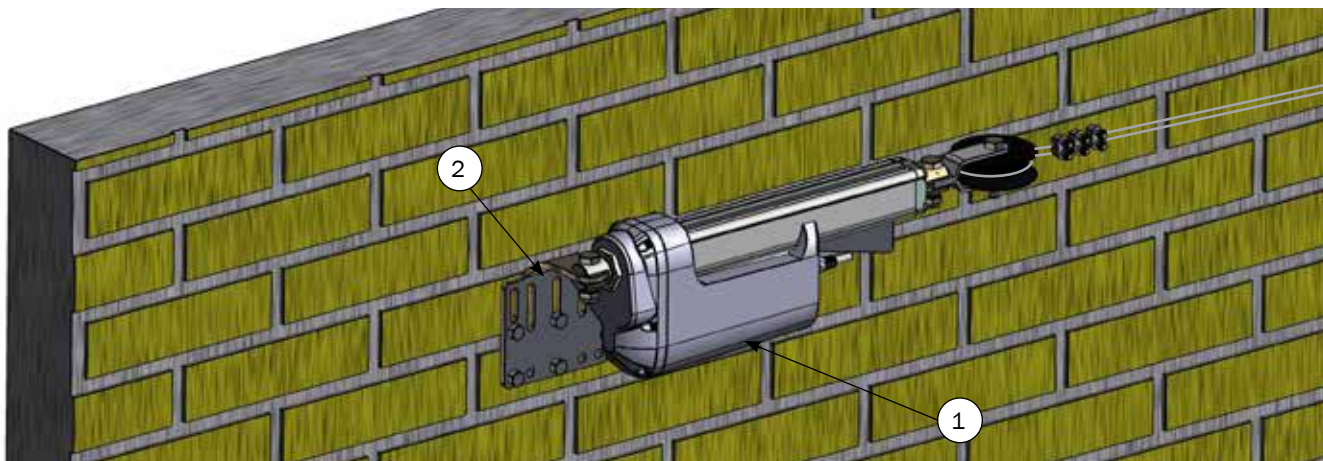
NB! The actuator must only be secured using the piston end and rear fastening plate – never the outer tube of the spindle or the motor housing.

For additional information, please refer to the data sheet for the actuator in question.

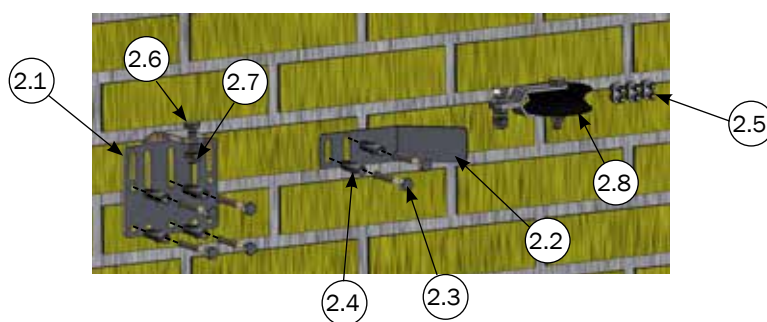


WARNING! Never turn the actuator's spindle for possible adjustment during assembly. This results in immediate errors on positioning, when the actuator is subsequently connected to the control and started up.

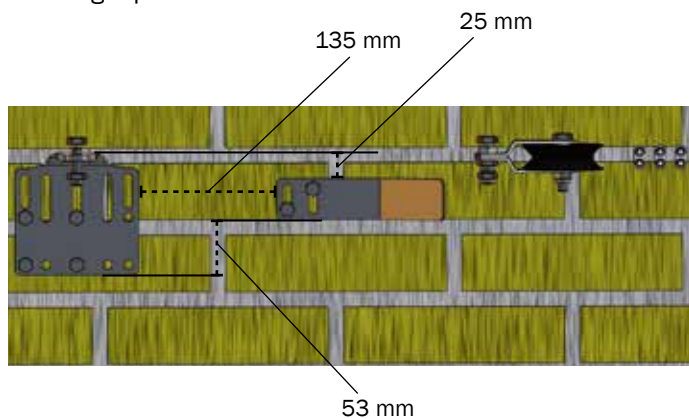
Wall bracket assembly for Linak Actuator



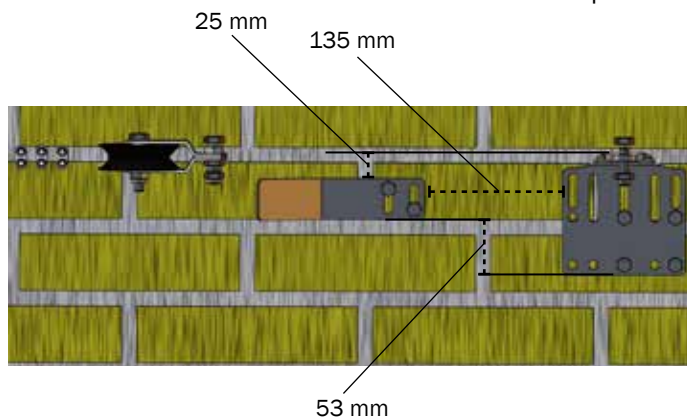
Wall bracket assembly



Bracket assembly for Linak right position



Bracket assembly for Linak left position



Nº	QTY.	Part Nº	Description
1	1,00	0153-467	LINAK ACTUATOR TYPE LA36
2	1,00	0153-460	BRACKET FOR LINAK ON WALL
2.1	1,00	0153-455	FITTING FOR LINAK ACTUATOR
2.2	1,00	0153-456	SUPPORT FOR LINAK ACTUATOR
2.3	6,00	34900033	PULLEY WHEEL TYPE G
2.4	6,00	39900120	WIRE LOCK 5 MM ST
2.5	2,00	30310040	SET SCREW M10X40 A2 DIN 933
2.6	2,00	33900029	LOCK NUT M10 A2 DIN 985
2.7	1,00	0156-004	COUCH SCREW M8X70 A2 DIN 571
2.8	3,00	0591-174	WALL PLUG 10X50MM

Key to symbols



NB! Not all of the symbols described here can be found on the products in question.

	Type B equipment, as per EN 60601-1		Lock function
	Protection against contact/foreign matter (first character) and water (second character) as per EN60529		Release function
	Class 2 equipment		Charge indicator
	For indoor use		Safety switch/enable button
	Safety isolating		
	Protective earth		
	Alternating Current		
	Direct current		
	Attention, consult accompanying documents		
	Denko approval		File E97199 UL file number
	Fimko approval		File E175209 UL file number
			File E151104 UL file number
			CSA
	Australian approval mark		PSE-Mark
	Australian approval mark		Product with a thermofuse
	Recognized - Component Mark		For indoor use (House)
	Canadian Recognized - Component Mark		Safety isolating transformer
	Recognized Component Mark for Canada and the United States		Electronics scrap
	T-Mark		Equipment K1.2 (Double square)
	RW-TÜV approval		Patient part of type B (Mand)
	TUV Rheinland		Patient part of type BF
			Earth protective
	TUV Product Service		Equipment class 1
	ETL		Earth
	C-ETL		CE Mark
	CS95145V		C-TICK
	LGA		
	UL Listing Mark		
	C-UL Listing Mark		
	C-UL US Listing Mark		
	UL Listing Mark		

Maintenance

- Clean the surface of the systems at appropriate intervals to remove dust and dirt, and check for signs of damage and breakage.
- Check all connections, cables, housing and connectors, and check that the system functions correctly.
- With the exception of motor control units with PCB or those prepared for mounting in an electrical panel, the control boxes are sealed and maintenance-free.
- Check all connections, cables, housing and connectors.
- For actuators with sealing class IPX6 rating and better: If cleaned using water, these units should only be washed when the piston rod (spindle) is fully extended.

Disposal of LINAK products

To dispose of LINAK products, start by sorting them into different categories for recycling or incineration. We recommend that you dismantle your product as fully as possible for disposal, and that the parts are recycled. Sorting categories may include:

- metal
- plastic
- cables
- flammable material
- reuse

It is possible to subdivide within some of these categories. For example, “metal” can be subdivided into steel and aluminium, while “plastic” can be divided into ABS and PP. As an example of sorting, the categories in which the various LINAK components must be placed are shown below:

Product	Component	Recycling group
Actuator:	Spindle and motor Plastic housing Cable	Metal scrap Plastic recycling or combustion Cable scrap or combustion
Control box:	PC-board Plastic housing Cable Transformer Batteries	Electronics scrap Plastic recycling or combustion Cable scrap or combustion Metal scrap Recoverable resources
Control:	Plastic housing Cable PC-board	Plastic recycling or combustion Cable scrap or combustion Electronics scrap