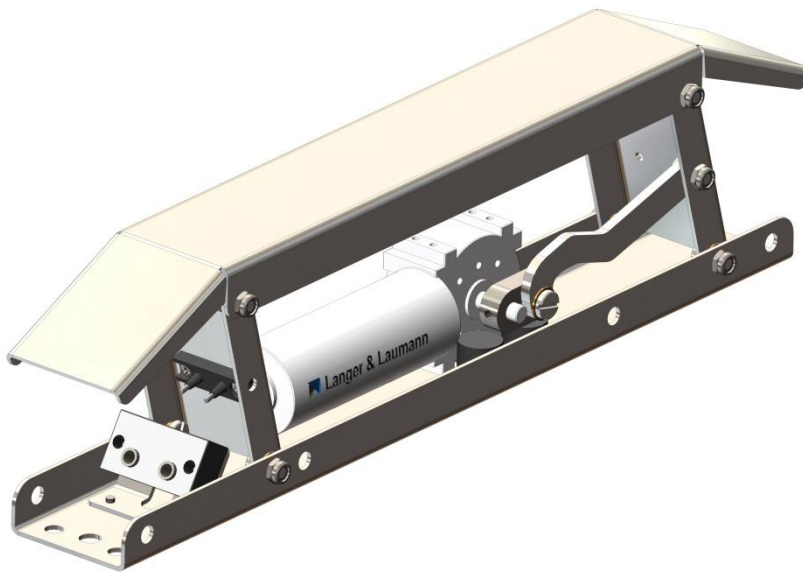


Manual

L&L retiring cam

B=64mm



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1 About this manual

1.1 General

Before installing and commissioning the L&L retiring cam, read this manual thoroughly. Chapter 2 General safety regulations/page 5 must be observed. Keep this manual within easy reach for future reference.

This manual is intended to facilitate installation and commissioning of the L&L retiring cam and its components. This manual contains important information for the safe and proper installation and commissioning of the L&L retiring cam.

Following the instructions in this manual will help to avoid hazards, repair costs and downtimes, and increase the reliability and service life of the L&L retiring cam.

In addition to this manual, the regulations for accident prevention and environmental protection applicable in the country of use and at the place of use must be observed. This manual only describes the door control modules supplied by Langer & Laumann Ing.-Büro GmbH. Refer to the user information provided by the manufacturer or supplier for information relating to the door control components not manufactured and supplied by Langer & Laumann Ing.-Büro GmbH.

For reasons of clarity, this instruction manual does not contain all detailed information relating to all types of the product and cannot take into account every conceivable case of installation, operation or maintenance. If further information is required or specific problems are encountered, which are not described in detail in this instruction manual, please contact us by telephone:
+49 (2552) 92791 0.

1.2 Explanation of symbols



WARNING:

Indicates a potential imminent danger that can result in serious injuries or death.



CAUTION:

Indicates a potential danger that can result in minor injuries. This sign also warns of potential property damage.



NOTICE:

Indicates actions to be taken and other useful information.

2 General safety regulations

The L&L retiring cam is designed exclusively for the automatic operation of locks on sliding doors. The manufacturer accepts no liability for use other than that specified. The L&L retiring cam conducts dangerous electrical voltages and controls moving mechanical parts. Failure to observe the instructions in this instruction manual may result in death, serious bodily injury or considerable damage to property.

The L&L retiring cam is built according to the state of the art and recognised safety regulations and is only intended for normal industrial use. If used for any other purpose, the manufacturer must be consulted in any event, otherwise no liability will be accepted for personal injury or damage to property. Use for any other purpose is considered improper and may result in personal injury to the user or third parties as well as damage to the system.



WARNING:

When operating electrical devices, certain parts of these devices carry dangerous voltages. Failure to observe the operating instructions can result in serious injury or damage to property! The warnings in this manual must be observed in any event. When commissioning the L&L retiring cam, door movements cannot always be influenced from the outside. During commissioning, an authorised person must stand at the door to keep other persons away from the door. The permissible forces and energies must be checked by the specialist carrying out the work after commissioning the door.

2.1 Delivery

Check that all components have been delivered based on the delivery note and manual. At the same time, visually inspect the delivery for damage. When unpacking, check the following:
whether there is any visible mechanical damage to the components,
whether the supplied cables are of the required length.



CAUTION:

Electrostatic discharges, mechanical stress, moisture and dirt can damage or destroy electronic assemblies.

Electronic assemblies must be left in their original packaging until installation.

Any transport damage must be reported to the forwarding agent immediately.

Any missing components must be reported to the supplier immediately.

2.2 Safety and accident prevention regulations

In addition to the instructions in this instruction manual, the statutory safety and accident prevention regulations must also be observed. The persons responsible for the safety of the system must ensure the following:

- Only appropriately qualified personnel may work on and with the L&L retiring cam.
- All personnel working with the L&L retiring cam must be familiar with all warnings and measures specified in this description for the installation, operation and use of the L&L retiring cam.
- Unqualified personnel must not be allowed to work on the L&L retiring cam.
- Personnel must be familiar with first aid measures and local lifesaving equipment.

2.3 Qualified personnel according to VDE 0105

Qualified personnel are those persons who, on the basis of their training, experience, instructions received and knowledge of relevant standards, regulations, accident prevention rules and operating conditions, have been authorised by the person responsible for the safety of the installation to carry out the required activities.

2.4 Exclusion of any warranty in the event of modifications or conversions

The L&L retiring cam must always be disconnected from the mains voltage before any intervention in the electrical or mechanical part of the system. Unauthorised modifications or alterations to the L&L retiring cam, its components or accessories will automatically invalidate any warranty. These safety instructions do not claim to be complete. The manufacturer accepts no liability for damage or malfunctions that may result from failure to observe this instruction manual.



WARNING:

Unauthorised modifications to the drive system and the installation of non-original spare parts will invalidate the manufacturer's liability for any resulting damage.

2.5 Safety contacts

The relay outputs of the TSG door control unit must not be used as safety contacts in the safety circuit of the higher-level control!



CAUTION:

When installing and commissioning the L&L retiring cam on/in a lift car, it must be ensured that the permissible total weight of the lift car is not exceeded at maximum rated load!



WARNING:

In the event of an emergency stop or emergency shutdown of the higher-level control, it must be ensured that the L&L retiring cam does not make any unintended, dangerous or uncontrolled movements.

2.6 Further important safety instructions

The customer, engineer and/or installer of the L&L retiring cam and related components is responsible for its correct and safe use. He must ensure that all state or local laws and regulations regarding the safety of power-operated doors as well as the relevant state health and safety regulations are observed.

Langer & Laumann Ing.-Büro GmbH is not responsible for accidents and/or consequential damage that may arise from the application or use of the L&L retiring cam and its components. Our maximum obligation and warranty is limited to the reimbursement of the cost of the product sold.

Langer & Laumann Ing.-Büro GmbH makes no specifications or suitability recommendations for specific safety door concepts. The customer, engineer and/or installer of the L&L retiring cam must decide whether the drive is suitable for a given application. Langer & Laumann Ing.-Büro GmbH also accepts no responsibility for damage or injury resulting from modifications to the drive, including changes to software parameters. Langer & Laumann Ing.-Büro GmbH employees are not authorised to change these conditions without the written consent and legally binding signature of the responsible authorities.



CAUTION:

After installing and commissioning the TSG sinus drive on/in a lift car, it must be ensured that the landing door bolts close as intended and that, for example, no hook can scrape against the locking plate and be subject to wear.

3 Area of application of the L&L retiring cam

The L&L retiring cam is an additional drive for car and landing door locks on lifts. The manufacturer accepts no liability for use other than that specified.

4 Illustrations, technical drawings and dimensions



Fig. 1: L&L retiring cam closed

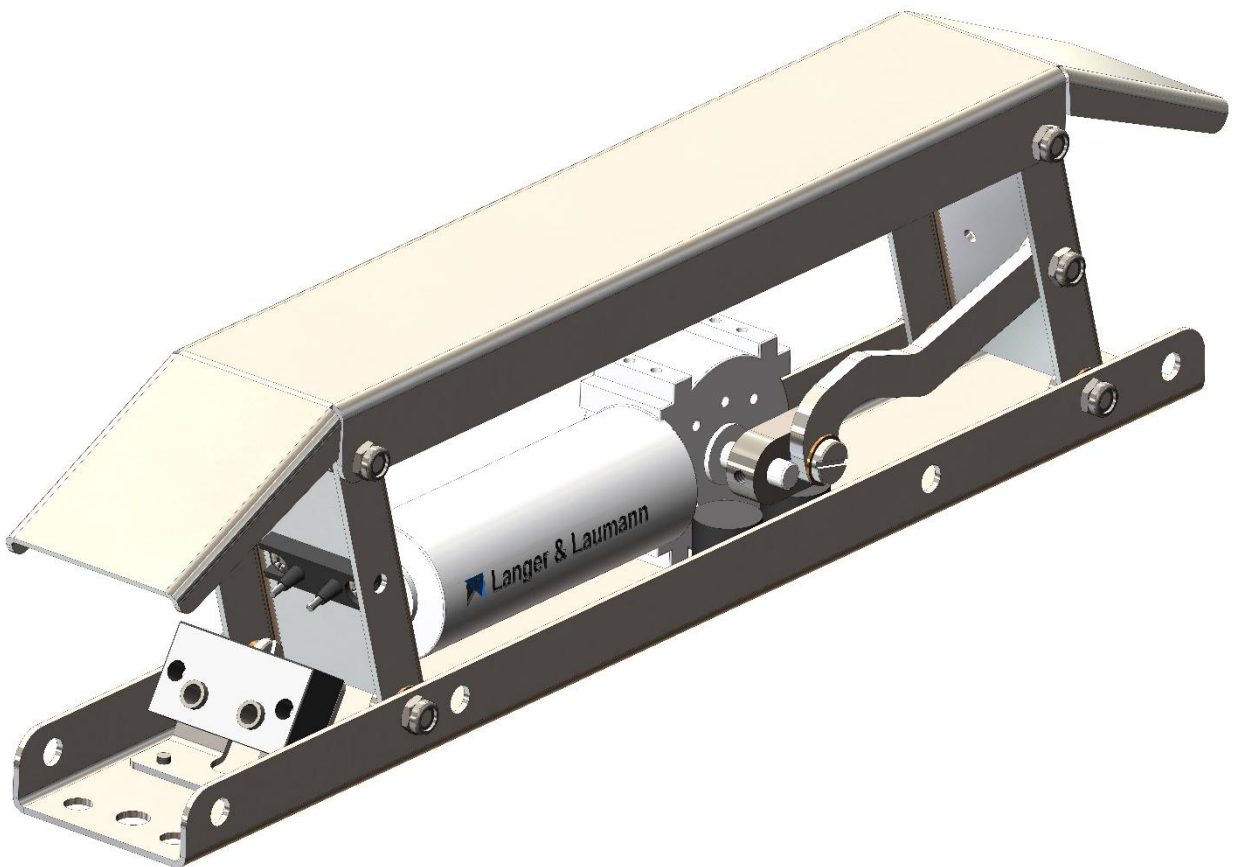


Fig. 2: L&L retiring cam open

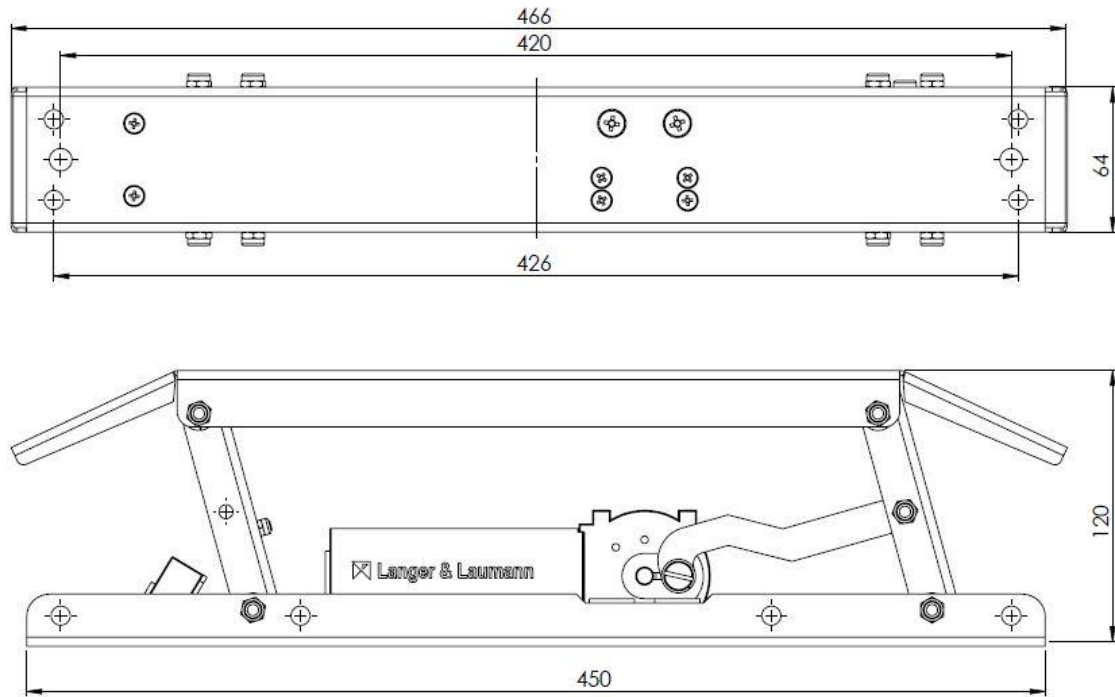


Fig. 3: L&L retiring cam open

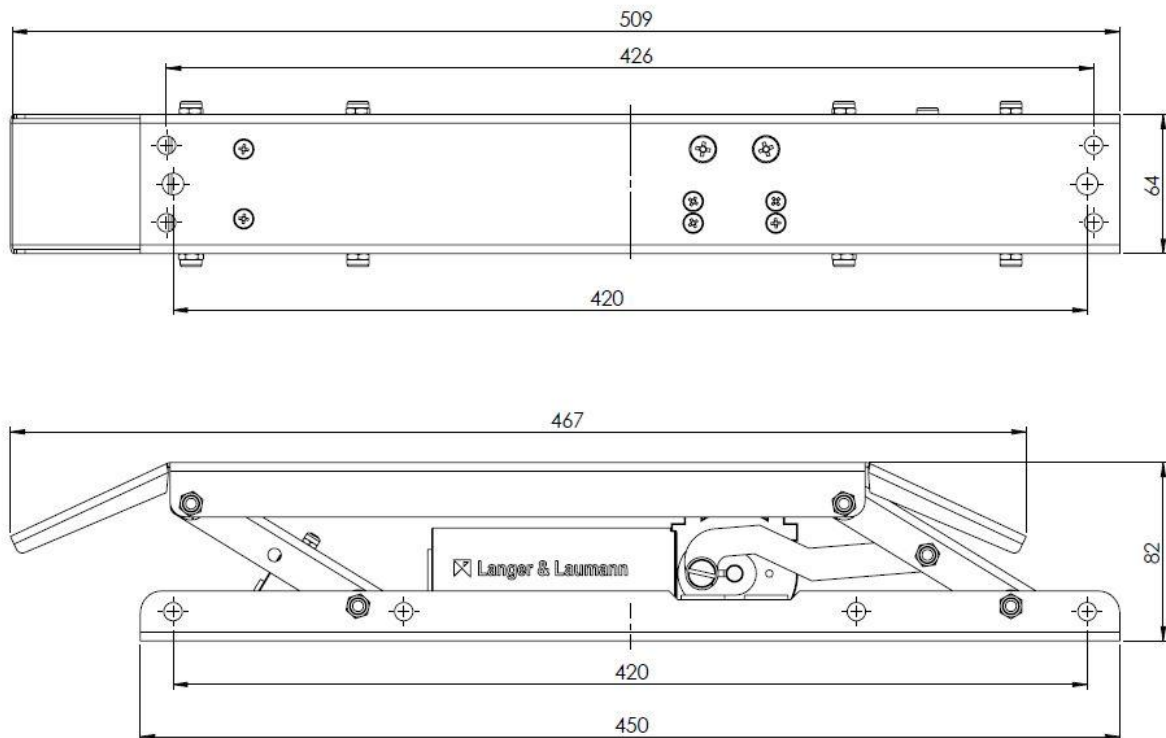


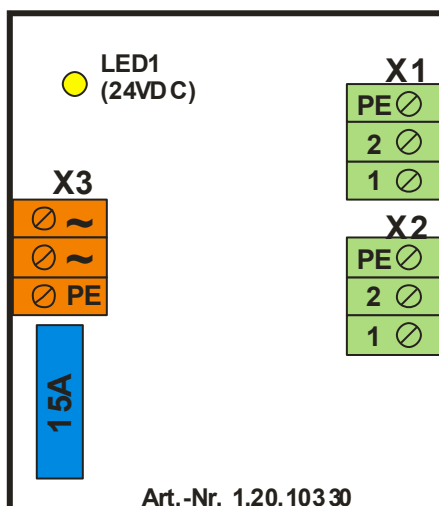
Fig. 4: L&L retiring cam closed

5 Technical data TSG electronics

5.1 Overview TSG drive expansion board



Fig. 5: TSG electronics with expansion board for L&L retiring cam control



X1: Drive 1 connection

X2: Drive 2 connection

X3: AC connection

LED 1: 24[VDC] ok

5.2 Terminal assignment TSG drive expansion board

Table 1: TSG expansion board X1 – drive 1

X1 drive 1 (3-pin screw/plug):		
1	Connection 1	
2	Connection 2	
PE	PE	

Table 2: TSG expansion board X2 – drive 2

X2 drive 2 (3-pin screw/plug):		
1	Connection 1	
2	Connection 2	
PE	PE	

Table 3: TSG expansion board X3 – mains connection

X3 supply voltage (3-pin screw/plug):		
~	Connection 1	
~	Connection 2	
PE	PE	

6 Electrical connection and commissioning

1. Electrical connection takes place with the supplied cable (see Fig. 5: TSG electronics with expansion board for L&L retiring cam control/page 10)
2. If the direction of rotation of the L&L retiring cam is incorrect, the motor polarity must be reversed.



WARNING:

When operating electrical devices, certain parts of these devices carry dangerous voltages. Failure to observe these operating instructions can result in serious injury or damage to property! The warnings in this manual must be observed in any event. When commissioning the TSG, door movements cannot always be influenced from the outside. During commissioning, an authorised person must stand at the door to keep other persons away from the door. The permissible forces and energies must be checked by the specialist carrying out the work after commissioning the door.

7 Description

The L&L retiring cam performs a linear movement that can be used to operate a lock on a lift landing door. Control takes place via the TSG electronics. The stroke is not adjustable.

The TSG expansion board can control and operate up to two L&L retiring cams and is connected to the control section of the TSG main board. On the TSG main board, parameters can be set for activating the function (hA), opening time (h7), closing time (hb) of the L&L retiring cam, and the time delay between the drive opening and door opening (hC).

Table 4: h-parameters

Parameter	Function	Min. value	Default value	Max. value	Factor	Unit
hA	Only with appropriately equipped optional add-on board (valid from version TSG V4). 00: Add-on board deactivated 01: Locking or skate drive (e.g. QKS9, can be used with add-on board additional drive) 02: Door lock solenoid (e.g. KONE ADC, can be used with add-on board 4E/4A relay) 03: Locking with NSG (e.g. Koch, can be used with add-on board additional drive). 06: Locking drive for hinged landing door (can be used with add-on board additional drive).	00	00	32		
h7	L&L retiring cam opening time	00	50	80		[1/100 second]
hb	L&L retiring cam closing time sec	01	50	80		[1/100 second]
hC	Time delay between drive opening and door opening	01	50	499		[1/100 second]



NOTICE:

For further information on parameter settings, see also TSG door control unit manual.

7.1 Function activation

To use the TSG drive expansion board function, the parameter **hA** must be set accordingly. This is only possible with an optionally equipped add-on board.

hA = 03: Locking with NSG (e.g. Koch, can be used with add-on board additional drive).
 (first the additional drive then the car door)

hA = 06: Locking drive for hinged landing door
 (first the car door then the additional drive)

* (valid from version TSG V4.60.06)



CAUTION:

The setting hA = 01, 02, 04 or 05 is not suitable for the L&L retiring cam.



NOTICE:

If hA = 00, the L&L retiring cam is not activated.



NOTICE:

For further information on parameter settings, see also TSG door control unit manual.

7.2 Opening and closing time of L&L retiring cam

The opening and closing time of the L&L retiring cam can be adjusted via parameters **h7** and **hb**. The values can be changed in increments of 0.01 seconds. A time of 0.50 seconds can be assumed as the default value for both the retraction and extension of the L&L retiring cam. This value must be checked and adjusted according to local conditions.

Max load	Parameter h7 L&L retiring cam opening time	Parameter hb L&L retiring cam closing time
5.0kg	51	46



CAUTION:

The values must not be set higher than the time actually required to retract or extend the L&L retiring cam. Otherwise the L&L retiring cam may fail!



NOTICE:

If a value is changed and confirmed, the value is permanently stored, i.e. the changed value will not be affected by a power failure.



NOTICE:

For further information on parameter settings, see also TSG door control unit manual.

7.3 Time delay between door drive and L&L retiring cam

The system can be set so that when the TSG door control unit receives an open command from the lift control, the L&L retiring cam drops out and the door subsequently opens. The parameter **hC** can be set for this purpose. The value can be changed in increments of 0.01 seconds.



NOTICE:

For further information on parameter settings, see also TSG door control unit manual.

7.4 Special function emergency power supply

The emergency power supply function is required in the event of a power failure. In this case, with the aid of the battery pack, the TSG electronics open the L&L retiring cam after about 3 seconds, which opens the door lock and allows the car door to move freely.

The L&L retiring cam must be installed so that the landing door is unlocked in a de-energised state. During the power failure, no further input commands are accepted by the lift control.



NOTICE:

In the event of a fault in the lift system that causes the lift to stop, the TSG must be automatically disconnected from the power supply.



NOTICE:

A1 appears in the seven-segment display and the dot in the second display flashes.



CAUTION:

The emergency power supply and the battery must be checked at regular intervals (at least once a year) and replaced if necessary.



NOTICE:

For further information on the emergency power supply, see also TSG door control unit manual.

8 Maintenance and repair

Maintenance of the L&L retiring cam is limited to a minimum due to its structural design. Components that are subject to operational wear and tear are to be included in regular maintenance and repair activities.



WARNING:

During maintenance work, it is essential to ensure that the drive cannot be switched on and that no exposed parts can inadvertently be subject to electrical power. After completing these measures, the existing protective and safety devices must be reinstalled on the drive.

9 Contact

If you have any questions or concerns, we can be reached at the following address:

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