GDO 500/700

Antriebssystem für Garagentore

Operator system for Garage Doors

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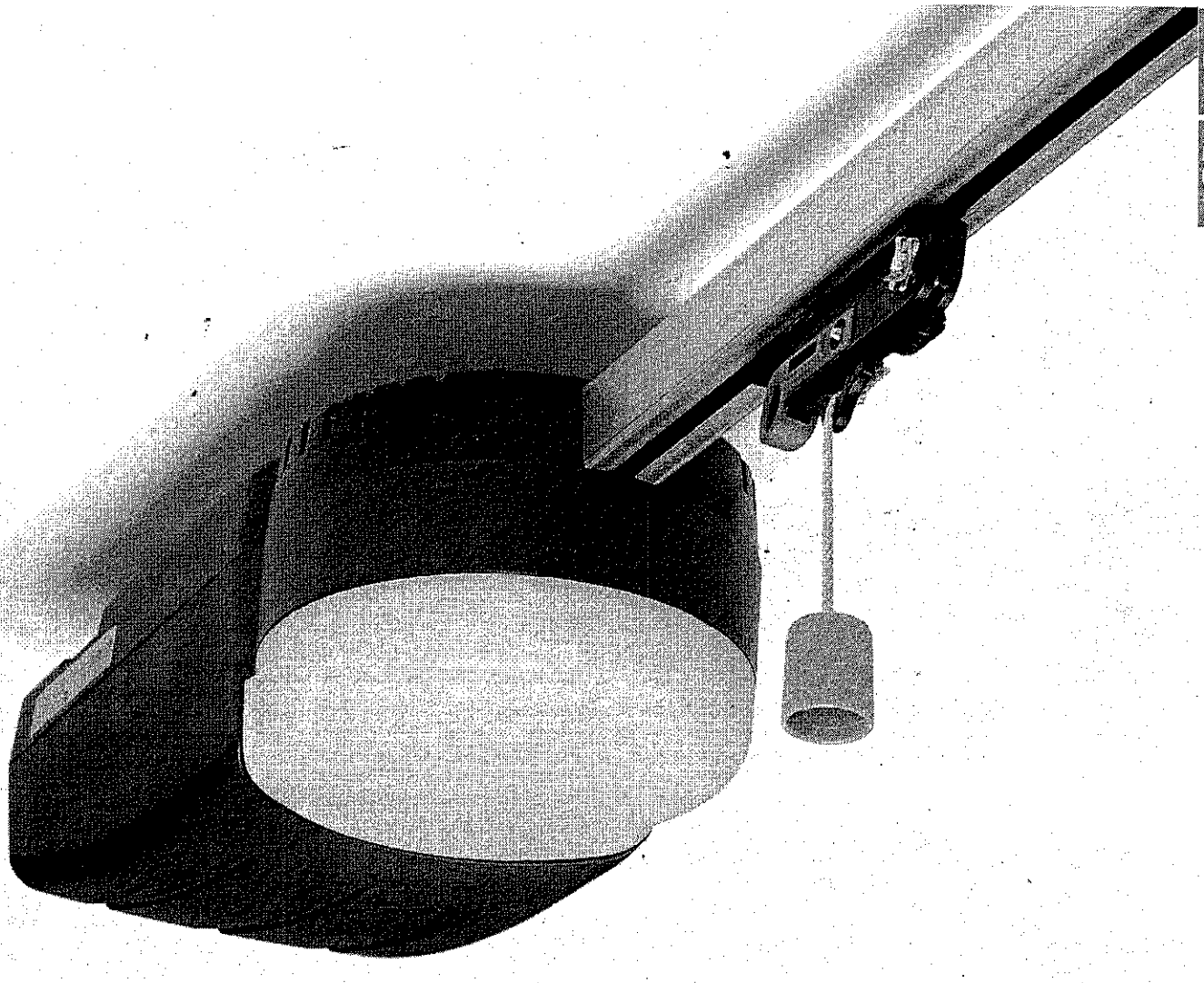

Einbau- und Bedienungsanleitung

Installation and Operating Instructions

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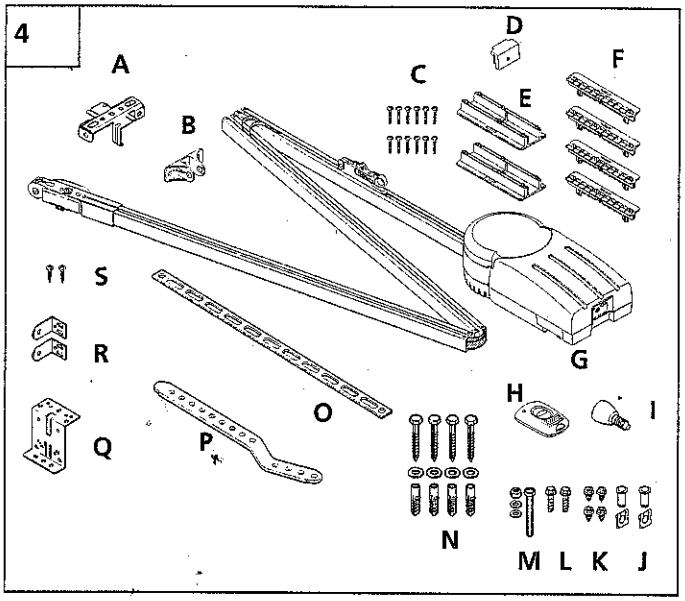
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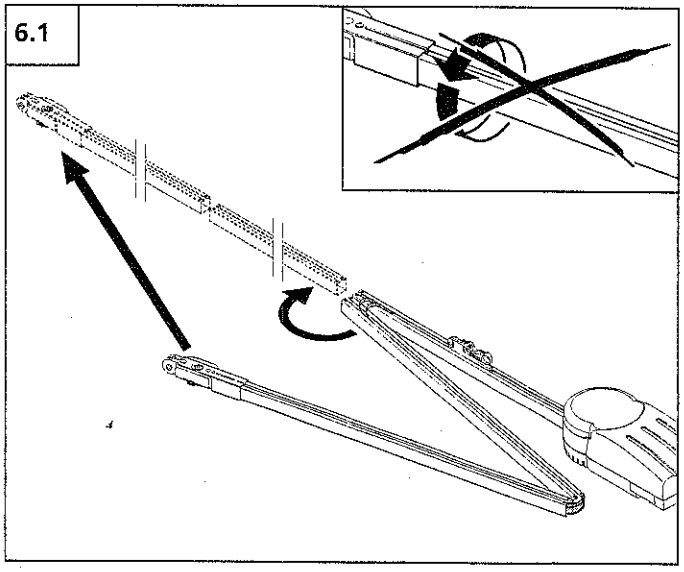
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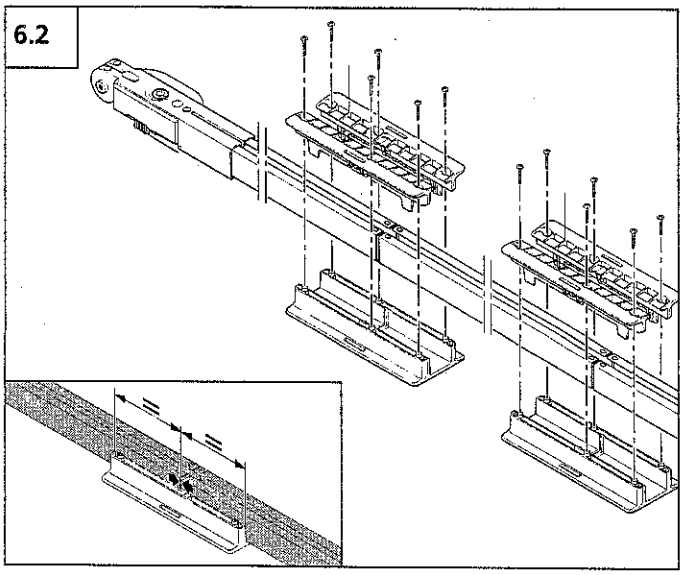
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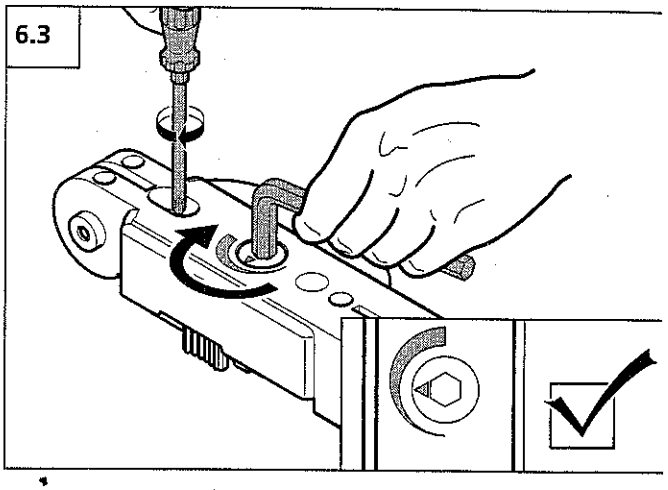
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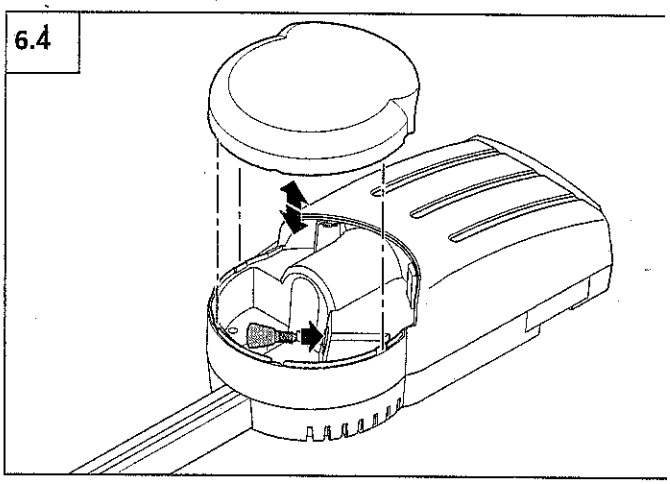
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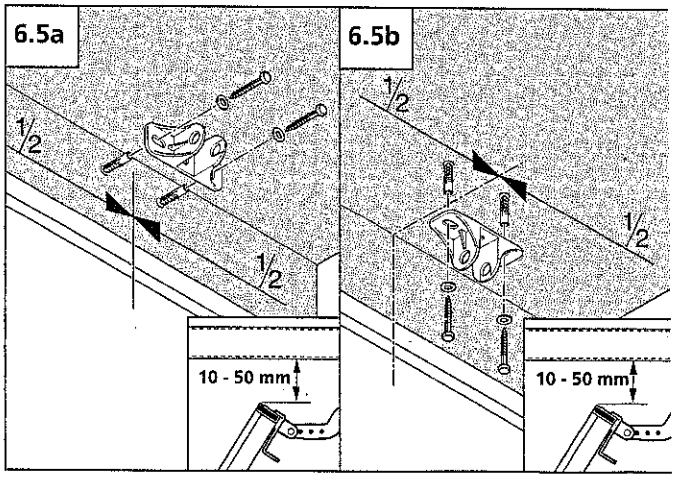
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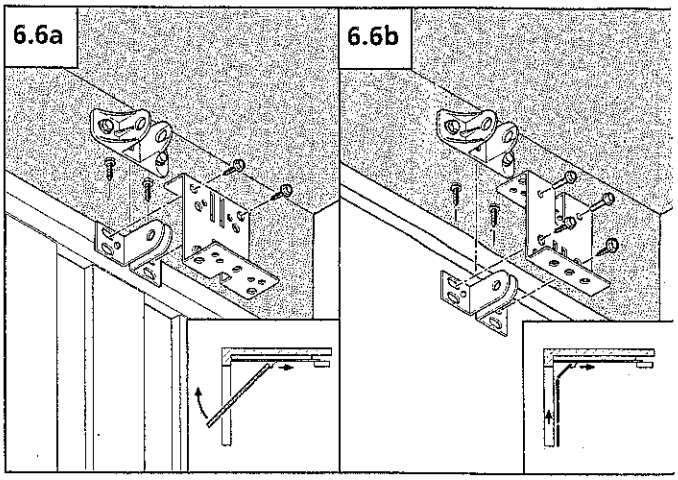
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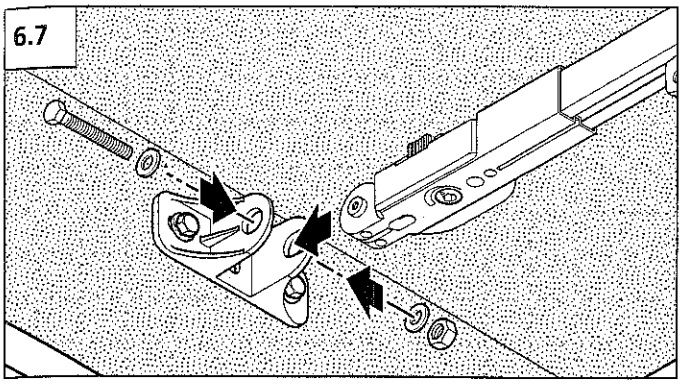

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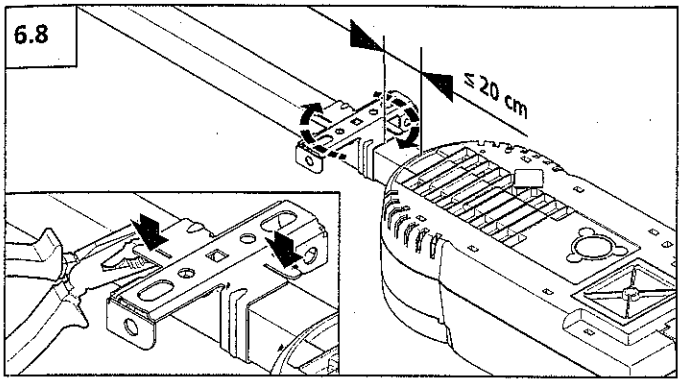

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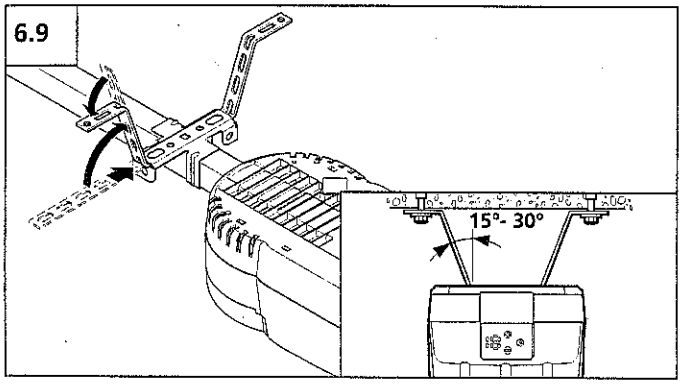

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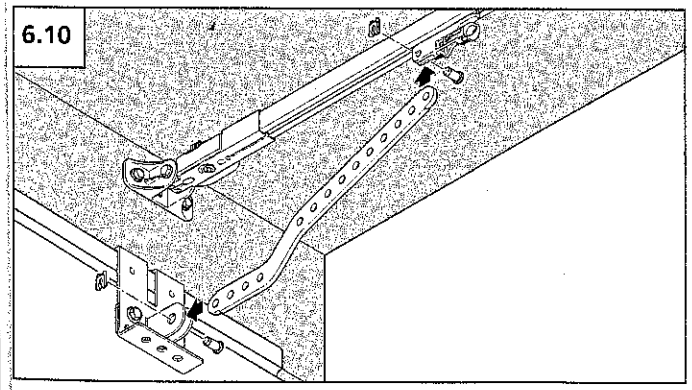

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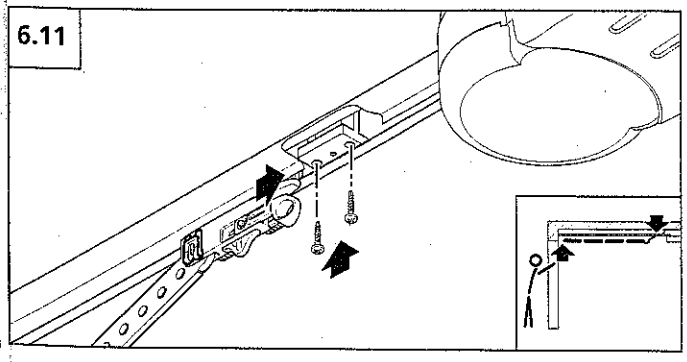

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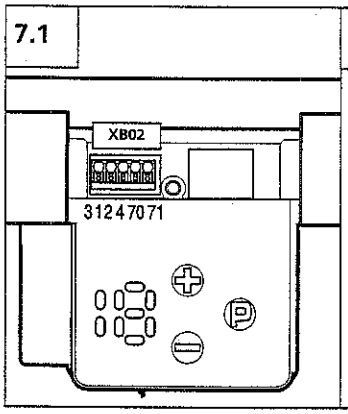

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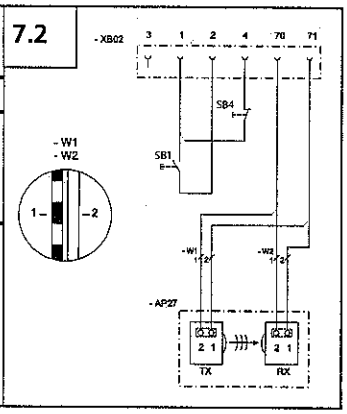

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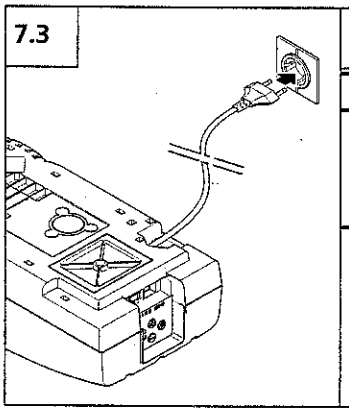

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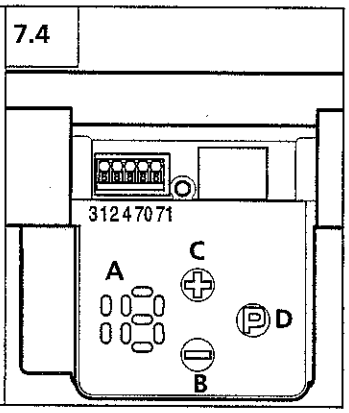

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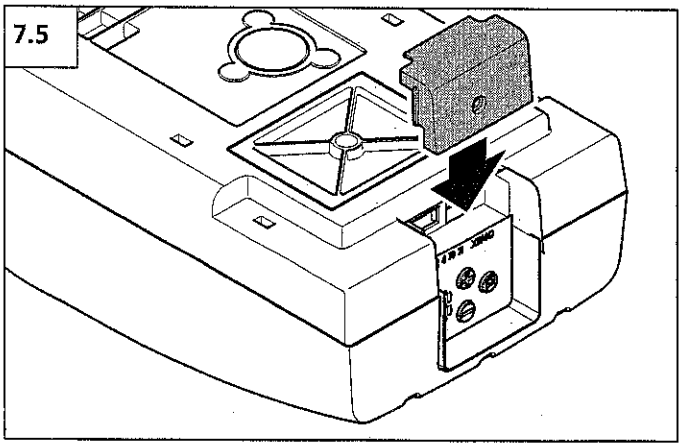

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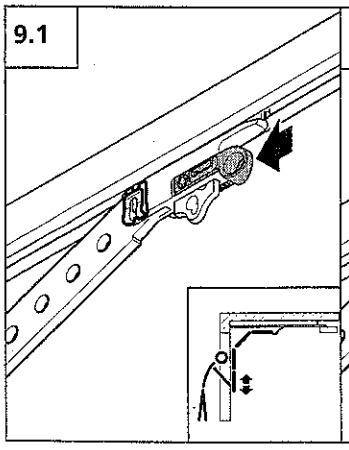

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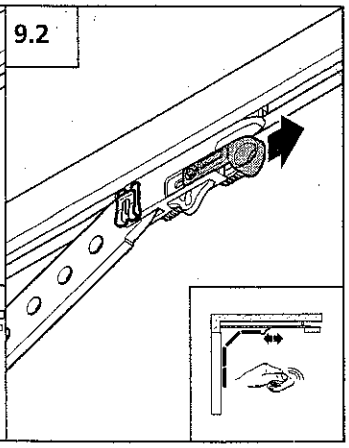

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1. Table of contents

Reference:
The manual comprises a written section and an illustrated section. The illustrated section is in the centre of the manual on pages 8 and 9.

2. Meaning of symbols

Caution!
Danger of personal injury!
The following safety advice must be observed at all times so as to avoid personal injury!

Attention!
Danger of material damage!
The following safety advice must be observed at all times so as to avoid personal injury!

Advice / Tip

Check

Reference

3. General safety advice

Please read carefully!

Target group
This operator system may only be installed, connected and put into operation by qualified and trained professionals!
Qualified and trained specialist personnel are persons
- who have knowledge of the general and special safety regulations,
- who have knowledge of the relevant electro-technical regulations,
- with training in the use and maintenance of suitable safety equipment,
- who are sufficiently trained and supervised by qualified electricians,
- who are able to recognise the particular hazards involved when working with electricity,
- with knowledge regarding applications of the EN 12635 standard (installation and usage requirements).

Warranty
For an operations and safety warranty, the advice in this instruction manual has to be observed. Disregarding these warnings may lead to personal injury or material damage. If this advice is disregarded, the manufacturer will not be liable for damages that might occur.

Batteries, fuses and bulbs are excluded from warranty.

To avoid installation errors and damage to the door and operator system, it is imperative that the installation instructions are followed. The system may only be used after thoroughly reading the respective mounting and installation instructions.

The installation and operating instructions are to be given to the door system user, who must keep them safe.
They contain important advice for operation, checks and maintenance.

This item is produced according to the directives and standards mentioned in the Manufacturer's Declaration and in the Declaration of Conformity. The product has left the factory in perfect condition with regard to safety. Power-operated windows, doors and gates must be checked by an expert (and this must be documented) before they are put into operation and thereafter as required, but at least once a year.

Correct use
The drive system is designed exclusively for opening and closing up-and-over garage doors and sectional garage doors.
The operator must be used in a dry place.
The maximum push and pull force must be observed.

Door requirements
The door must:
- stand still alone (by balance of springs),
- run smoothly.

Beside the information in this manual, you must also take into account the information in the door system installation manual and current general accident prevention and safety regulations! Our sales and supply terms and conditions are effective.

Information on installing the operator system
- Ensure that the door is in good mechanical condition.
- Ensure that the door can stop in any position.
- Ensure that the door can be easily moved in the OPEN and CLOSE directions.
- Ensure that the door opens and closes properly.
- Remove all unnecessary components from the door (e.g. cables, chains, brackets).
- Render any installations inoperable that will no longer be needed after the operator system has been installed.
- Before commencing cabling works it is very important to disconnect the operator system from the electricity supply.
  Ensure that the electricity supply remains disconnected throughout the cabling works.
- Adhere to the local protection regulations.
- Lay the electricity supply cables and control cables; these MUST be laid separately. The controls voltage is 24 V DC.
- Install the operator system with the door in the CLOSED position.
- Install all the impulse transmitters and control devices (e.g. remote control buttons) within sight of the door and at a safe distance from the moving parts of the door. A minimum installation height of 1.5 m must be observed.
- Permanently fix the warning signs, which advise of the danger of becoming trapped, at conspicuous locations.
- Ensure that no part of the door extends across public footways or roads when the installation is complete.

Information on commissioning the operator system
After initial operation, the persons responsible for operating the door system, or their representatives must be familiarised with the use of the system.
- Make sure that children cannot access the door control unit.
- Before moving the door, make sure that there are neither persons nor objects in the operating range of the door.
- Test all existing emergency command devices.
- Never insert your hands into a running door or moving parts.
- Pay attention to any parts of the door system that could cause crushing or shearing damage or accidents.
  The EN 13241-1 regulations must be observed.

Information on servicing the operator system
To ensure proper operation, the following items must be checked regularly and repaired if necessary.
Before any works to the door system are undertaken, the operator system must be disconnected from the mains.
- Check once a month to ensure that the operator system reverses if the door encounters an obstacle.
  Depending on the operational direction of the door, place a 50 mm high/wide obstacle in its path.
- Check the settings of the OPEN and CLOSE automatic cut-out function.
- Check all movable parts of the door and operator system.
- Check the door system for signs of wear or damage.
- Check whether the door can be easily moved by hand.

Information on cleaning the operator system
Never use water jets, high pressure cleaners, acids or bases for cleaning.

4. Product overview

Supply package

A Suspension cramps
B Lintel support
C Screw 4 x 18 (12x)
D Cover cap
E Rail connector, bottom part (2x)
F Rail connector, top part (4x)
G Motor unit with rail
(Preassembled limit stop enclosed)
H Hand transmitter
I 25 W light bulb E14 (pear-shaped)
J Bolt with locking plate (2x)
K Self-tapping screw 6.3 x16 (4x)
L Hexagonal head screw M6 x 20 (2x)
M Screw set for lintel support
N Plug and screw set A10 (4x)
O Support plate
P Door link
Q Door connector element
R Door link bracket (2x)
S Screw set for limit stop 9 x 19 (2x)

5. Preparation for mounting

Attention!
In order to guarantee correct mounting, carry out the following checks before installing.

Supply package

- Check the package to ensure that all the parts are included (fig. 4).
- Check that you have all the additional components that are necessary for your particular installation requirements.

Garage

- Check whether your garage has a suitable mains connection and a mains disconnection facility.

Door system

Attention!
For garages without a second entrance: the garage door must be fitted with a release system to allow access to the garage if a fault occurs.

- Dismantle or disable the door locks.
- Check that the door to be operated fulfils the following conditions:
  - the door must be easily moveable by hand,
  - the door should automatically remain in every position into which it was moved.

Reference:
When using and installing accessories, always observe the specific instructions included with the equipment.

6. Installation

6.1 • Place the drive head and the rail on a dry surface.

Attention!
To ensure proper operation, the toothed drive belt must not be twisted.

• Pull the rail sections apart.

6.2 • Screw the rail to the rail connectors.

6.3
- Tighten the toothed drive belt with the Allen key until the arrow is in the centre position.
- Fix the position of the tension straining screw with the fixing screw.
  This tensioning device allows the toothed drive belt to be retightened at a later time if necessary.

6.4 • Insert the bulb into the motor unit.

Attention!
To ensure that the door travels correctly, at the highest point of the opening movement, the upper edge of the door leaf must lie 10 - 50 mm below the horizontal lower edge of the drive rail.

6.5
- Screw the lintel support
  - to the wall (6.5a) or
  - to the ceiling (6.5b).

6.6
- Screw the door connector to the
  - up-and-over door (6.6a) or
  - sectional door (6.6b).

Caution!
- The drive system must be prevented from falling before it has been properly fixed.
- The screw through the rail and the lintel support must be tightened only until the nut is flush with the screw thread.

6.7 • Attach the motor unit, together with the rail, to the lintel support.

6.8
- Mount the suspension cramp.
- Determine the distance (max. 20 cm from the drive head).

6.9
- Slide a support plate into the suspension cramp.
- Bend the support plate as required for fixing to the ceiling.
- Screw the drive system to the ceiling.

6.10 • Fit the door link.

Reference:
The unlocking function of the door is described in point 9.

6.11
- Release the door.
- Move the door by hand into the desired OPEN position.
- Position and fit the limit stop directly behind the carriage on the rail.
- Tighten the screws.
- Move the door by hand into the CLOSED position.
- Lock the door.

7. Initial operation

Caution!
Danger of electric shock:
Before cabling works commence, a check must be carried out to ensure that the cables are at zero voltage. Measures must be taken to ensure that the cables remain dead for the duration of the works (e.g. prevent the power supply from being switched back on).

Attention!
In order to avoid damaging the controls:
- The local protection regulations must be complied with at all time.
- It is very important that mains cables are laid separately from control cables.
- The controls voltage must be 24 V DC.
- If external voltage are applied at terminals X802, the entire electronic system will be destroyed.
- Only potential-free normally open contacts may be connected to terminals 1,2 and 4.

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Reference:
- When installing external control elements or safety and signal equipment, the relevant instructions must be observed.
- The safety elements that are installed are activated by the express programming.

7.1 Connection of control elements

• Connect any available accessories.

XB02 External control elements and safety equipment

7.2 Terminal XB02:

SB1	Impulse button
SB4	Opening contact for hold circuit (e. g. stop button, wicket door contact)
1	24 V DC (max. 50 mA)
2	Connect potential-free impulse button
3	0V / GND
4	Hold circuit
70	Two-wire photocell connection
71	Two-wire photocell connection

Advice:
An opening contact that is connected is activated after a power interruption. An activated opening contact can only be deactivated by a reset.

7.3

• Connect the drive system to the mains power supply.

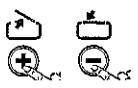
7.4 Overview of the control unit

A	Seven segment display
B	MINUS button (e.g. to decrease parameters when programming)
C	PLUS button (e.g. to increase parameters when programming)
D	P-button (e.g. to save parameters)

Displays in operating mode

	Photocell beam or bottom safety edge device interrupted
	Door moves in OPEN direction
	Door is in OPEN position
	Door moves in CLOSE direction
	Door is in CLOSED position
	Continuous activation of an external control element
	Remote control unit is used
	Ready for operation

Express programming

	Operator system is in operating mode
	Start express programming / programme OPEN door position
	Drive door to OPEN position as far as the limit stop
	Save OPEN door position / programme CLOSED door position
	Drive door to CLOSED position
	Correct the CLOSED door position with (+) and (-)
	Save CLOSED door position / programme remote control unit
	Use the hand transmitter
	Release the hand transmitter button
	Save the remote control settings / End the express programming procedure

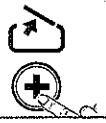
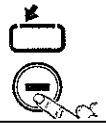
Function test

Learning run for determining the driving power

Check:
After express programming and after making changes to the programming menu, the following learning runs and checks must be carried out

• Operate the operator system (with the door coupled) to drive the door once from the CLOSED position to the OPEN position and back to the CLOSED position without interruption.

Test:

	After pressing the (+) button: The door must open and travel to the saved OPEN end position.
	After pressing the (–) button: The door must close and travel to the saved CLOSED end position.
	After pressing the hand transmitter button: The operator system must move the door in either the OPEN or CLOSE direction.
	After pressing the hand transmitter button while the operator system is running: The operator system must stop.
	When the button is pressed again, the operator system moves in the opposite direction.

Advice:
In the event of a photocell beam failure the door can be closed in deadman operation using the (-) button.

Check the automatic cut-out

Automatic cut-out OPEN
In the case of operator systems for doors with openings in the door leaf (diameter of the opening > 50 mm):
- While the door is running, load the centre of the lower edge of the door with a 20 kg load.

The door must stop immediately.

Automatic cut-out CLOSED
- Place a 50 mm high obstruction on the ground.
- Drive the door towards the obstruction.

The operator system must stop and reverse when it hits the obstruction.

Advice:
- The sensitivity of the automatic cut-out is determined automatically. It can be altered in the extended functions.
- The parameter settings are still saved if the power supply is interrupted.
- Only a reset causes the driving power settings for the OPEN and CLOSE directions to revert to the factory settings.

7.5 Fix the cover cap to the motor unit.

8. Extended operator functions

Caution!
Important factory default settings can be changed using the extended functions.
All the parameters must be set correctly to avoid damage to persons or property.

	The operator system is in operating mode
1x >10s	Call up extended functions / door operator starts a countdown from 13 - 1 / keep P pressed!
	Let go of P / programme **required driving power for OPEN direction**
	Set the required driving power for OPEN direction with (+) and (-) / 16 settings possible
1x <1s	Save required driving power for OPEN direction / programme **required driving power for CLOSE direction**
	Set the required driving power for CLOSE direction with (+) and (-) / 16 settings possible
1x <1s	Save required driving power for CLOSE direction / programme **automatic cut-out for OPEN direction**
	Set the automatic cut-out for OPEN direction with (+) and (-) / 16 settings possible
1x <1s	Save automatic cut-out for OPEN direction / programme **automatic cut-out for CLOSE direction**
	Set the automatic cut-out for CLOSE direction with (+) and (-) / 16 settings possible
1x <1s	Save automatic cut-out for CLOSE direction / programme **start-up warning**

Advice:
The start-up warning can only be used if a signal device is connected (country-specific).

	Set the start-up warning with (+) and (-) / 0 - 7 seconds possible
1x <1s	Save start-up warning / call up **reset function**

Attention!
After a reset all parameters revert to the factory settings.
To ensure correct operation of the control:
- all functions desired must be re-programmed,
- the remote control unit must be re-programmed,
- the operator system must be driven once to the OPEN and CLOSED position.

	Select reset function
	Confirm reset
	Confirm "No reset"
1x <1s	1. Carry out reset / operator system changes to operating mode 0. Carry out "No reset" / call up door cycle counter
	Display number of door cycles: - The display alternates the various digits in the number - the highest digit is shown flashing
	For example 712 door cycles
1x <1s	End programming of the extended functions

Legend:

	LED segment off
	LED segment flashes
	LED segment flashes rapidly
	LED segment lights up

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9. Operation

Open the door / close the door

The garage door operator can be operated using the hand transmitter, the (+) and (-) buttons on the door operator or an external input unit (special accessory.

The door operator has a two-button direction function

1st Press (+):	door OPENS
2nd Press (+):	door stops
3rd Press (+):	door OPENS
4th Press (-):	door stops
5th Press (-):	door CLOSES
6th Press (-):	door stops
7th Press (-):	door CLOSES

The hand transmitter and the external input unit have an impulse function:
1st impulse (button pressed): door OPENS
2nd impulse (button pressed): door stops
3rd impulse (button pressed): door CLOSES
4th impulse (button pressed): door stops
5th impulse (button pressed): door OPENS
...

Advice:
The drive system automatically carries out runs at regular intervals as far as the mechanical stop in the OPEN direction to check internal parameters.

Release mechanism

Release the door (fig. 9.1)
Lock the door (fig. 9.2)

10. Malfunctions

Power interruption

Following a power interruption, at the first impulse the drive system moves the door as far as it will go into the door OPENED position in order to find its reference.

Fault messages

In the event of a fault message, the control displays the fault number which flashes rapidly.

Indicator	Cause	Solution
	If no buttons are pressed within 120 seconds, the programming mode terminates automatically.	
	- RPM detector faulty / anti-blocking device was activated.	- Check drive unit and guide rails.
	- Door movement too stiff. - Door blocked.	- Ensure that the door moves easily.
	- Maximum force is active (linear curve).	- Have maximum force checked by a specialist dealer.
	- Excess travel stop.	- Check drive unit and guide rails.
	- Undervoltage.	- Check the building's electricity supply.
	- Self test of the external photocell barrier not OK.	- Have photocell barrier checked.
	- Faulty force sensor for the automatic cut-out.	- Check drive unit and guide rails.
	- Door movement too stiff or irregular. - Motor is not turning.	- Check the path of the door. - Ensure that the door moves easily.
	- Sensitivity (learned force limitation) was activated.	- Set automatic cut-out for OPEN or CLOSE to a lower setting. - Have sensitivity (learning force curve) checked by a specialist dealer.
	- Electronics are defective.	- Check drive unit.
	- Stop circuit interrupted.	- Connect the stop circuit or reset the door operator.

Legend:

	LED segment off
	LED segment flashes
	ED segment flashes rapidly
	LED segment lights up

11. Attachment

Technical Data

Electrical Data		GDO 500	GDO 700
Nominal voltage	V	230 / 260	
Nominal frequency	Hz	50 / 60	
Power consumption	A	1,1	
Power input - operation	kW	0,2	
Power input - stand-by	W	< 4	
Operating mode (operating time)	Min.	KB 2	
Control voltage	V DC	24	
Protection category, motor unit		IP 20	
Protection class		II	

Mechanical Data		GDO 500	GDO 700
Max. push and pull force	N	500	700

General data		GDO 500	GDO 700
Motor unit dimensions	mm	180x140x380	
Total length	mm	3240	
Weight	kg	9,5	
Temperature range	°C	-20 to +60	

Manufacturer's Declaration

We hereby declare that the product sold by us
and mentioned below corresponds in its design, construction and version to the relevant and basic health and safety requirements of the following EC regulations: EMC Directive, Machinery Directive and Low Voltage Directive.
Product changes made without our consent will render this Declaration void.
Product: GDO 500 / 700
Relevant EC Regulations:
EC EMC Directive (2004/108/EC),
Machinery Directive (98/37/EC)
and Low Voltage Directive (2006/95/EC).

Applied harmonised standards, in particular:
EN 292-1 / EN 61000-6-2 / EN 61000-6-3 / EN 55014 / EN 61000-3-2 / EN 61000-3-3 / EN 60335-1 / EN 60335-2-95 / EN 12445 / EN 12453 / EN 300220-1 / EN 301489-3 / ETS 300683

02.01.2009 ppa. K. Goldstein

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EC Declaration of Conformity

We hereby declare that the product sold by us
and mentioned below corresponds in its design, construction and version to the relevant and basic health and safety requirements of the following EC regulations: EMC Directive, Machinery Directive and Low Voltage Directive.
Product changes made without our consent will render this Declaration void.
Product:
Relevant EC Regulations:
EC EMC Directive (2004/108/EC),
Machinery Directive (98/37/EC)
and Low Voltage Directive (2006/95/EC).

Applied harmonised standards, in particular:
EN 292-1 / EN 61000-6-2 / EN 61000-6-3 / EN 55014 / EN 61000-3-2 / EN 61000-3-3 / EN 60335-1 / EN 60335-2-95 / EN 12445 / EN 12453 / EN 300220-1 / EN 301489-3 / ETS 300683

Date / Signature