

APERTO[®] baseline



Garagentorantriebe

Ⓜ Installation and Operating Instructions

1

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General Information

Symbols



Exclamation mark:
Indicates a potential risk!
Failure to follow instructions may result in serious injuries or even death, and serious damage to property!



Note symbol:
Information, useful advice!

1

(1) Refers to the relevant illustration in the introduction or main text.

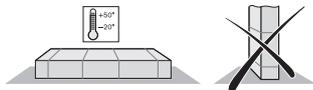
Safety Instructions

General

- These installation and operating instructions must be read, understood, and complied with by all persons involved in the installation, operation and maintenance of the door operator system.
- Only specialised personnel may assemble, connect, and commission the operator.
- Only install the operator to correctly aligned and weight-balanced doors. An incorrectly aligned door can cause serious injury or damage to the operator.
- The manufacturer cannot be made liable for any damage or disruptions to operation occurring due to non-compliance with the installation and operating instructions.
- Ensure that these installation and operating instructions are located in the garage in an easily accessible place.
- Observe and comply with accident prevention directives and applicable standards in the respective countries.
- Observe and comply with the directive on 'Power-driven Windows, Doors and Gates – BGR 232' issued by the Employers' Liability Insurance Association (valid in Germany).
- Always disconnect (unplug) the operator from the mains supply before performing any work on the operator.
- Use only manufacturer's original replacement parts, accessories, and mounting material.

Storage

- The operator may only be stored indoors, in a dry, enclosed environment at an ambient temperature between -20°C and +50°C.
- The operator must be stored horizontally.



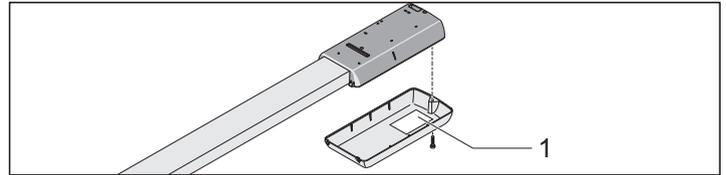
Operation

- The drive mechanism may only be operated, if a risk-free force tolerance has been set. The force tolerance must be adjusted in such a way that the door cannot cause injury when it is being closed.
- Keep your hands clear of a moving door or any moving parts.
- Keep children, disabled persons, and animals away from the door.
- Only drive into and out of the garage when the door is fully opened.
- There is a risk of persons getting trapped or cutting themselves in/on the door system's moving parts or the edges where it closes.
- If the door is not equipped with a small door, or if there is no alternative access to the garage, install an emergency release system (emergency release lock or control cable) that can be activated from the outside.
- If damaged, it is not possible to replace the power mains line separately. In this case, contract a qualified electrician to replace the mains line with the transformer.

Remote control operation

- The radio remote control may only be used for equipment and systems where defective remote operation of the transmitter or receiver does not constitute a risk to people, animals or objects, or in cases where this risk is eliminated by means of additional safety features.
- All persons operating the system must be instructed in the safe use. If there is a risk of injury or damage to property, or if the operated device is not fully visible to the user, the system may not be operated by remote control.
- Radio remote control may only be used if door travel can be supervised, and if there are no persons or objects in the travel range.
- Store the hand-held remote control so that there is no risk of it being accidentally used by, for instance, children or animals.
- The operator of this radio-controlled equipment is in no way protected from interference from other telecommunications systems and facilities (e.g. other radio-controlled equipment that is licensed to operate at the same frequency range). Should serious interference be encountered, please contact your nearest telecommunications office with interference measuring facilities (radio signal localisation)!
- Do not use the remote control transmitter near locations or installations that are susceptible to radio interference (such as airports or hospitals).

Rating plate



The rating plate (1) is located on the inside of the cover of the control unit housing.

Exact type designation and date of manufacture (month/year) of the operator are to be found on the rating plate (1).

Proper use

- ⚠ Attention! Risk of serious damage to operator!**
Do not open or close the door using the operator without first adjusting the balance weight (springs tensioned). Otherwise, the motor (transmission system) might be seriously damaged.
- ⚠ Caution, risk to life and limb!**
Remove all ropes, handles and loops used for the manual operation of the door.

- The operator is designed for the exclusive purpose of opening and closing light swing and sectional doors. Any other use does not constitute intended use. Manufacturer is not liable for damages that arise due to non-intended use. The risk is borne solely by the operator. Non-intended use renders the warranty null and void.
- Doors operating automatically with an operator must comply with the standards and directives valid at the given time: e.g. EN 13241-1.
- The operator may only be used in a technically perfect condition, as intended, in a safety-conscious and hazard-conscious manner, in compliance with the installation and operating instructions.
- Malfunctions that can impair safety must be eliminated immediately.
- The door must be stable and warp-proof, i.e. it should not bend or warp during opening or closing operations.
- The operator is unable to compensate for any defects in the door or for its incorrect installation.
- Only use the operator in a dry, indoor environment where there is no risk of explosion.
- Do not use the operator in rooms where a hostile environment prevails (e.g. salty air).

General information

Maximum door dimensions*

max. width:		
- Swing door:	3000	mm
- Sectional door:	3000	mm
Height (approx.)		
- Swing door:	2550	mm
- Sectional door:	2300	mm

* door conforming to EN 13241-1.

Technical data

General

Rated voltage:	220 ...240	V/AC
Rated frequency:	50/60	Hz
Operating temp. range:	-20 - +50	°C
Protection class	IP 20	
maximum traction and pressure force:	400	N
Rated traction:	120	N
Rated current consumption:	0.35	A
Rated power consumption:	80	W
Maximum speed:	140	mm/s
Power consumption, stand-by:	~ 3	W
Weight:	15	kg
Duration of operation:	KB 2	
Workplace-specific emission value < 75 dBA - operator only		
Packaging (L x W x H):	1080 x 190 x 180	mm

EU Manufacturer's Declaration

The company

SOMMER Antriebs- und Funktechnik GmbH
Hans-Böckler-Strasse 21-27
D-73230 Kirchheim/Teck

herewith declares that its operator:

- Aperto baseline

complies with the following directives:

- Machine Directive 98/37/EC
- Low-Voltage Directive 93/68/EEC
- EU Directive on Electromagnetic Compatibility 2004/108/EC

The following standards/draft standards were specifically applied:

- EN 12 453:2000, EN 12 445:2000, EN 60204-1:1997
- EN 60335-1:2002

Note:

The door system may not be commissioned until such time as it has been established that the system in which the above operator is to be installed, meets the requirements of all relevant EU directives.

Kirchheim, 01.03.2005

Frank Sommer
Managing Director



EU Declaration of Conformity

The company

SOMMER Antriebs- und Funktechnik GmbH
Hans-Böckler-Strasse 21-27
D-73230 Kirchheim/Teck

herewith declares that the product named below, if operated properly, conforms to the general requirements according to article 3 of the R&TTE Directive 1999/5/EC and fulfils the requirements of the standards listed below:

Product: RF Remote Control for Doors & Gates
Type: RM02-868-2, RM02-434-2

Applicable guidelines and standards are:

- ETSI EN 300220-1:09-2000, -3:09-2000
- ETSI EN 301489-1:07-2004, -3:08-2002
- EN 60950-1:03-2003

Kirchheim, 04.08.2004

Frank Sommer
Managing Director



EU Declaration of Conformity

The company

APERTO Torantriebe GmbH
Hans-Böckler-Strasse 29
D-73230 Kirchheim/Teck, Germany

herewith declares that the product named below, if operated properly, conforms to the general requirements according to article 3 of the R&TTE Directive 1999/5/EC and fulfils the requirements of the standards listed below:

Product: RF Remote Control for Doors & Gates
Type: TX02-868-2, TX02-434-2

Applicable guidelines and standards are:

- ETSI EN 300220-1:09-2000, -3:09-2000
- ETSI EN 301489-1:07-2004, -3:08-2002
- EN 60950-1:03-2003; EN 50371:11-2002

Kirchheim, 04.08.2004

Frank Sommer
Managing Director



Preparations for installation

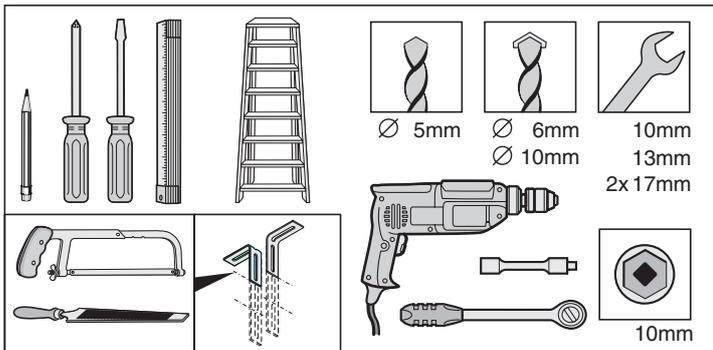
Safety instructions

- The power cable supplied as standard may neither be shortened nor lengthened.
- The voltage of the power source must correspond to that indicated on the operator's rating plate.
- All devices requiring external connection must be equipped with safe contact separation as per IEC 364-4-41, in order to isolate them from the mains voltage supply.
- Live parts of the operator (voltage-carrying parts e.g. C-rails) may not be connected to earth or to the live parts or protective conductors of other circuits.
- IEC 364-4-41 must be observed when laying the external device conductors.

Installing the slip-door safety mechanism or release lock

- If your garage door is fitted with a slip door but with no slip-door safety facility, you need to have one installed (see 'Accessories').
- If your door has no slip door and your garage has no separate entrance, install a release lock or control cable to facilitate drive mechanism release from the outside (see 'Accessories').

Required Tools

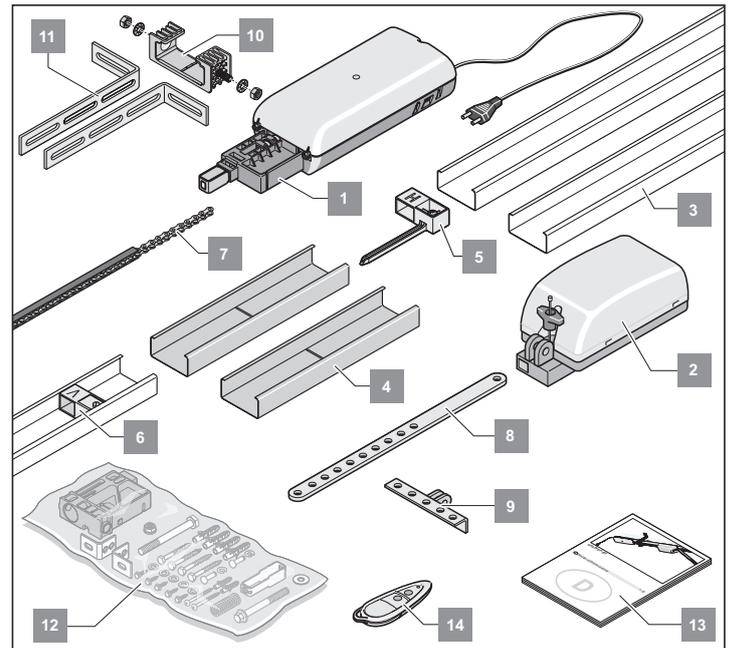


Personal protective equipment



Scope of delivery

- The scope of delivery may vary according to the type of operator supplied.



Contents of package

- 1x control housing with power cable
- 1x trolley
- 3x C-rails
- 2x upper connecting element
- 1x switch-trigger 'H' with screw
- 1x switch-trigger 'V' with screw
- 1x Chain (including 3x chain cases mounted on chain)
- 1x connecting rod
- 1x door fitting bracket
- 1x ceiling suspension fitting (plastic)
- 2x anchoring brackets for suspension from ceiling
- 1x Installation kit
 - 1x tensioning bolt
 - 1x spring
 - 5x washers
 - 1x tensioner
 - 1x screw
 - 1x M10 nut
 - 2x angle pieces
 - 2x retainers
 - 1x long bolt
 - 1x short bolt
 - 4x screws
 - 4x S10 plugs
 - 5x screws
 - 2x M8 nuts
 - 2x circlips
 - 2x lock screws
- 1x installation and operating instructions
- 1x remote control transmitter

General Installation Information

Safety instructions

⚠ Caution! Incorrect installation may result in serious injury. Always adhere to all installation instructions!

- After installation, remove or disable all equipment (e.g. cables and chains) that is not required for the operation of the door.
- Installation, connection and initial operation of the operator may only be carried out by qualified specialists.
- Do not operate the door if people, animals or objects are in its range of travel.
- Keep children, disabled persons, and animals away from the door.
- Safety goggles should be worn when drilling the mounting holes.
- Cover the operator when drilling to ensure that no grime penetrates the unit.

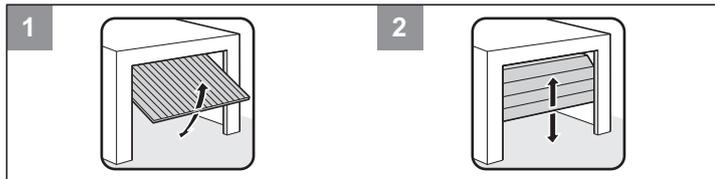
⚠ The walls and ceiling must be solid and stable. Only fit the operator to a correctly aligned door. A door that has not been aligned correctly can cause serious injuries.

- Doors must be stable because they are subjected to high traction and pressure forces. Light doors made of plastic or aluminium must be reinforced before installation if necessary. Ask your dealer for advice.
- Remove door locking system or disable same.
- Only use approved fixing material (e.g. plugs, screws). The fixing materials must be suitable to the wall and ceiling material.
- Check that the door runs easily.
- The door must be balanced.

Test: Manually open the door half-way. It must stand still in this position. If the door moves downward or upward, mechanically readjust it. Ask your dealer for advice.
- Check the clearance between the door's highest up-position (DHP, see fig. 15) and the ceiling. The minimum clearance is 35 mm and the maximum clearance is 100 mm; the push arm can be at a max angle of 30°. If clearance is less than that specified, the operator must be shifted towards the rear and an extended operator rail must be fitted. Ask your local dealer for advice.

Door types and special accessories*

* Accessories are not included in the delivery



Door type	Accessories
1 Swing door	No special accessories required
2 Sectional door with single guide rail	Sectional door fitting with boomerang *
2 Vertical sectional door with double guide rail	Sectional door fitting without boomerang *
2 Rolling shutter door	No special accessories required

Installation tips

- Installation work can be carried out quickly and reliably by two persons.
- The operator can be installed to one side of the door if it cannot be installed at the centre. Ensure that the door does not become distorted or bent jamming in the guide rails.

Check: Open and close the door several times by hand holding it at the point where you intend fitting the door operator. If the door can be moved in this way without difficulty (in compliance with the above forces), the operator can be fitted at this point.

• Emergency release:

If the garage has no separate entrance (e.g. slip-door), the user must be able to operate the emergency release mechanism from the outside. This is why the emergency release should be run to the outside where it can be activated via a control cable or a release lock.

• Swing doors

As the mechanical lock of a door with an operator must be dismantled or deactivated, it is possible to open the door manually to approx. 50 mm depending on the door design.

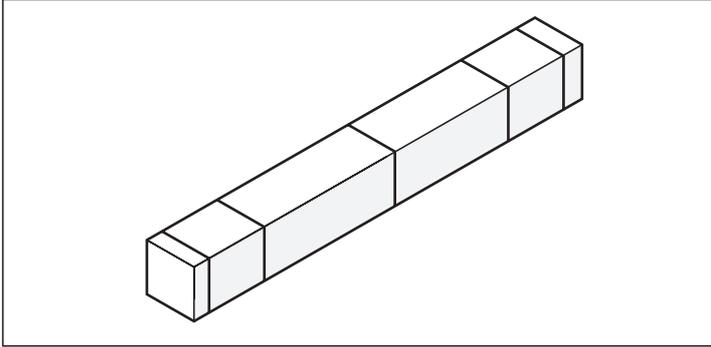
To counter this situation, spring latches can be installed that lock the door, in addition to the operator. These spring latches are connected to the operator via a locking set in order to first unlock the spring latches before the operator opens the door.

i Other pulse generators include: remote control transmitters, funkody, radio-operated interior switches and key-operated buttons. A connection line to the operator does not need to be installed for radio transmission, ask your dealer.

Installation

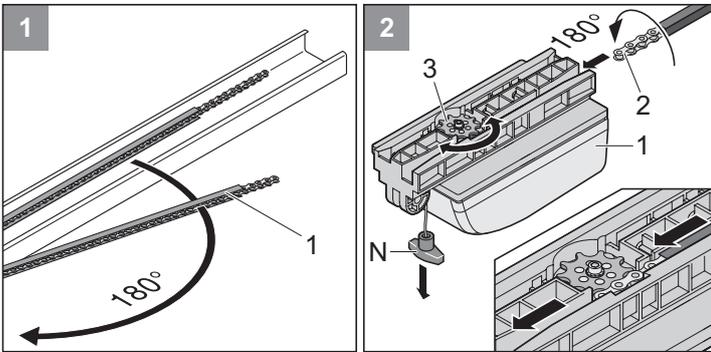
Pre-assembly of operator

⚠ Caution, risk of short circuit!
Do not dismantle chain case. A short circuit occurs if the chain touches the C-rail, and can damage the operator.

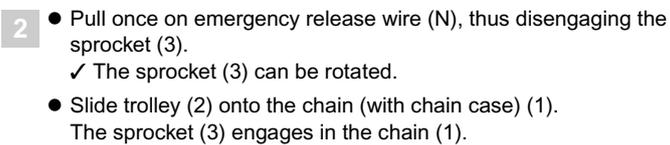


- Remove the operator from its packaging.
- Check delivery to ensure that it is complete.

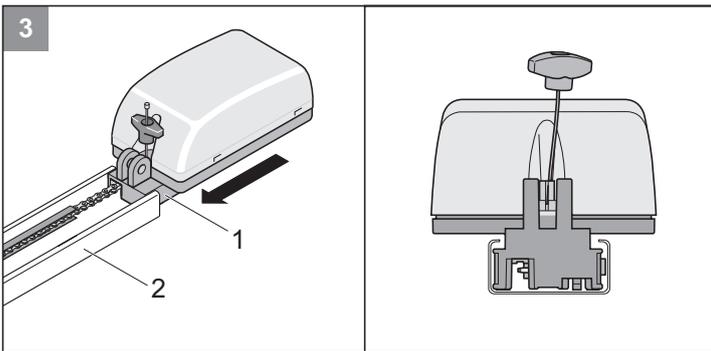
i Dispose of the packaging correctly in accordance with local statutory regulations.



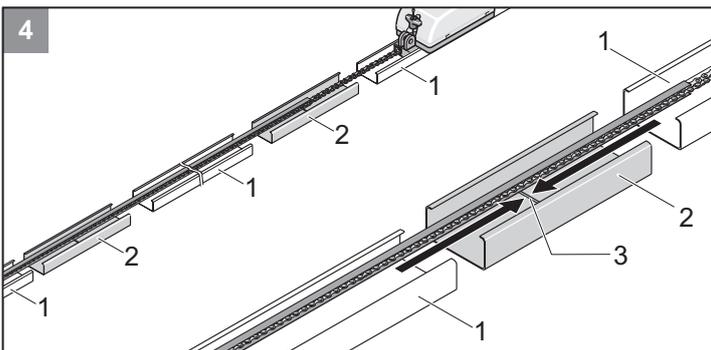
1 ● Pull out chain (with chain case) (1).



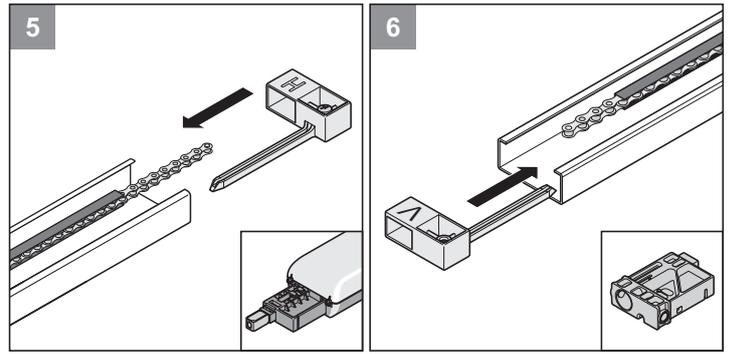
- 2** ● Pull once on emergency release wire (N), thus disengaging the sprocket (3).
✓ The sprocket (3) can be rotated.
● Slide trolley (2) onto the chain (with chain case) (1). The sprocket (3) engages in the chain (1).



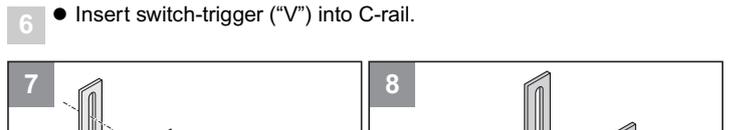
3 ● Push trolley (1) onto C-rail (2).



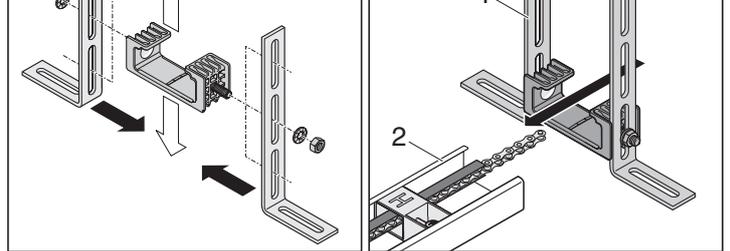
4 ● Slot two C-rails (1) into the connecting element (2) and push together to the stop (3).



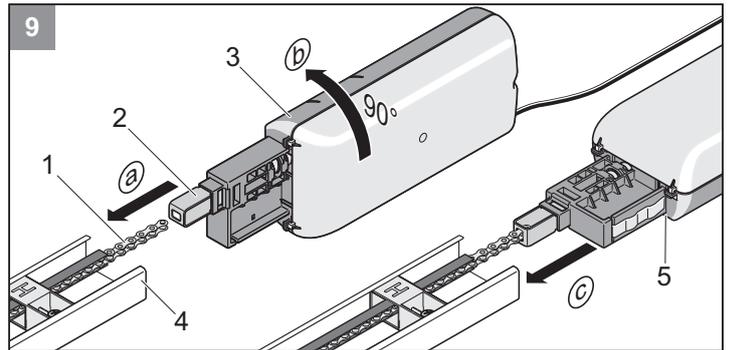
5 ● Insert switch-trigger ("H") into C-rail.



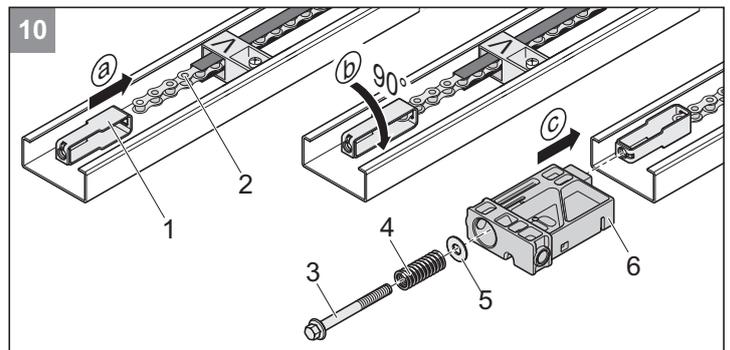
6 ● Insert switch-trigger ("V") into C-rail.



8 ● Push ceiling suspension fitting (1) onto C-rail (2).

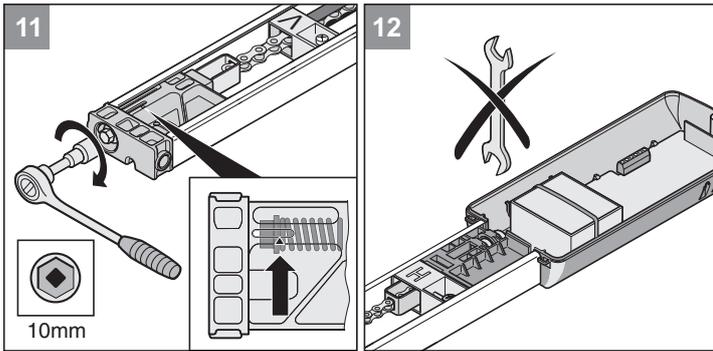


9 ● Insert chain (1) in tensioner (2) and turn drive head (3) by 90°. Push drive head (3) into C-rail (4) to the stop (5), pulling chain into the unit (1).

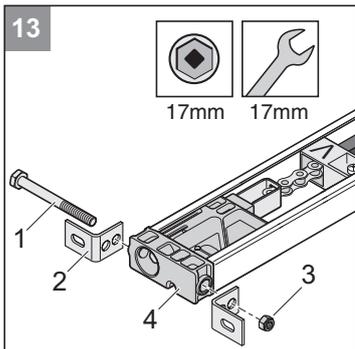


10 ● Hook tensioner (1) to chain (2) and turn it by 90°. Insert connecting element (6) and push tensioner (1) through it. Place washer (5) and spring (4) onto the tensioning bolt (3) and screw the bolt into the tensioner (1).

Installation



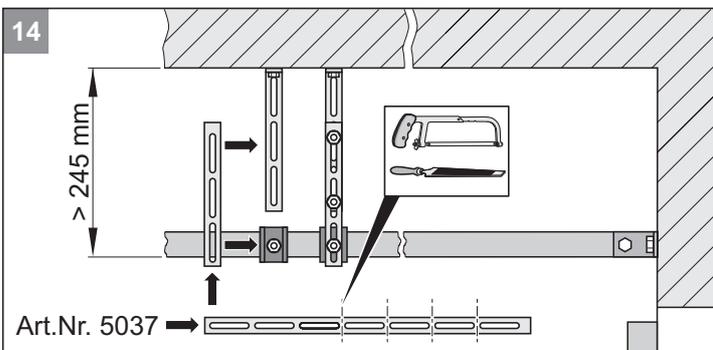
- 11 • Tighten chain until the mark (arrow) is reached.
- 12 • Do not tighten on this side, as the unit is supplied pre-tensioned.



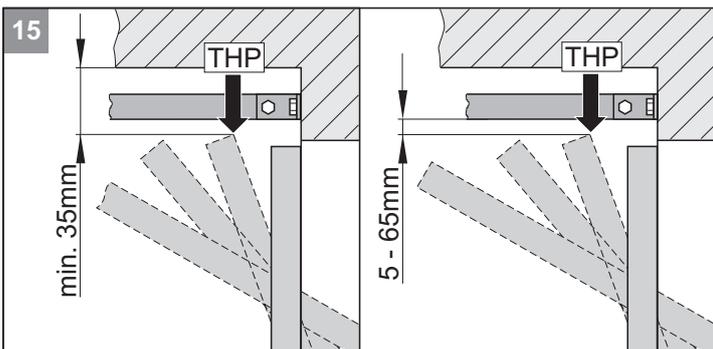
- 13 • Mount bracket (2) with screw (1) and nut (3) onto the connecting element (4).

Installation

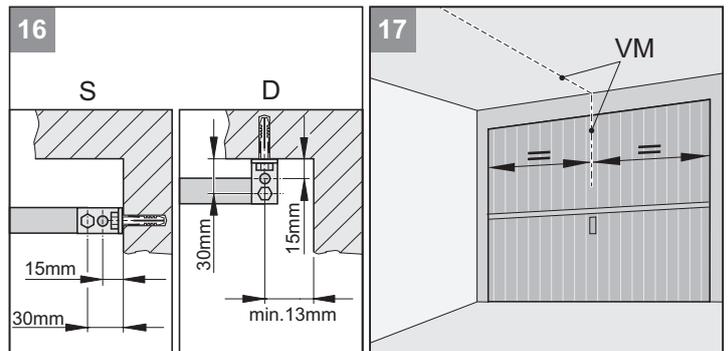
- i** If the distance between the ceiling and the lower edge of the C-rail is greater than 245 mm, extend the suspension bracket (with perforated steel strip).



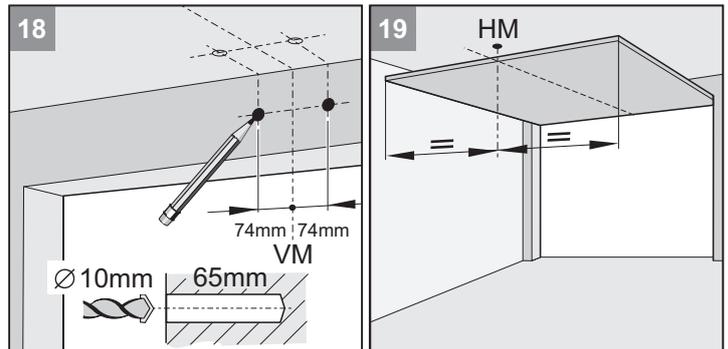
- !** Caution! Risk of damage to operator or door!
Also observe position of door handle to prevent it touching the C-rail when the door is being opened. Install operator in a higher position or remove the door handle.



- 15 • Determine the door's highest up-position (DHP) :
Open door and measure smallest clearance (min. 35 mm) between top edge of door and ceiling. The distance between the highest up-position and the bottom edge of the C-rails has to be minimum 5 mm and maximum 65 mm, whereby the drive arm must be at an angle of maximum 30°! (see fig. 25)!

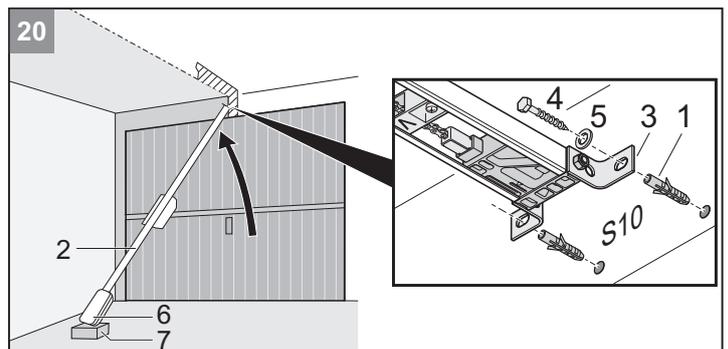


- 16 • The operator can be mounted on the lintel (S) or ceiling (D).
- i** Mark indicating the centre of the door, sometimes already applied by the door manufacturer.
- 17 • Determine the front centre point (VM) of the door and mark it on the door and on the lintel or ceiling.



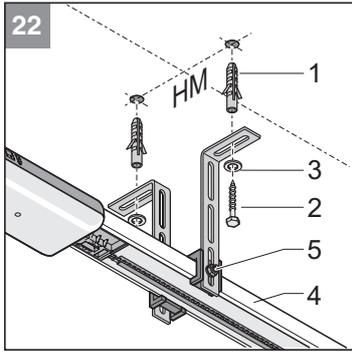
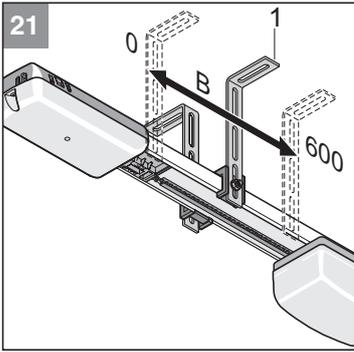
- !** Wear safety goggles when drilling!
Check thickness of ceiling, particularly in prefabricated garages!

- 18 • Mark points 74 mm to the right and left of the centre of door (VM), and at the same height on the lintel or the ceiling (see Fig. 17).
• Drill holes (2x $\varnothing 10 \times 65$ mm).
- 19 • Open the door. Transfer door centre mark (HM) to ceiling.
Close door.

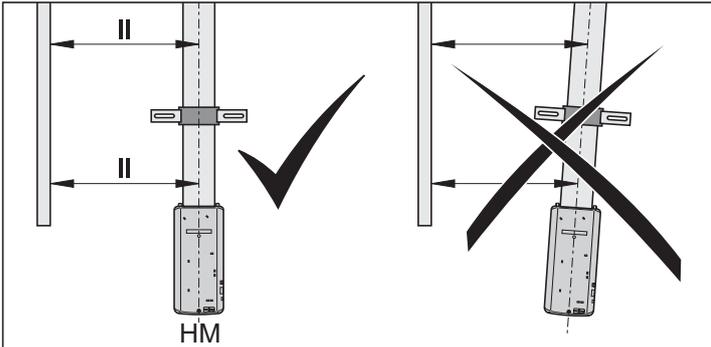


- !** Protect control unit housing (6) from damage, using the pad (7)!
- 20 • Insert plug (1). Lift up operator (2) at front. Secure lintel fitting (3) at the front with two screws (4) and plain washers (5).

Installation



Attention !!
Always install operator parallel to the guide rails of the door.



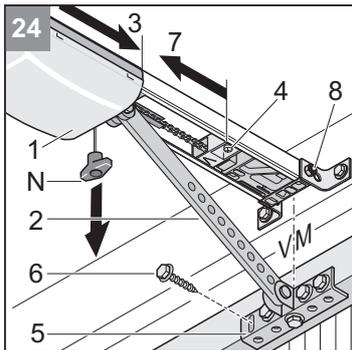
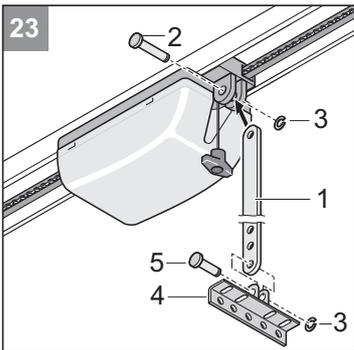
Use a non-slip, stable stepladder!

- 21**
- Lift up operator.
 - Align ceiling bracket (1). It should be located within a range of (R = 0 ...600 mm).

- 22**
- Align operator mechanism horizontally to rear centre of door (HM). Mark position of holes. Drill two holes (Ø 10 x 65 mm).

Wear safety goggles when drilling!
Check thickness of ceiling, particularly in prefabricated garages!

- Insert plug (1). Fit two screws (2) with plain washers (3). Tighten screws (2) securely.
- Align C-rail (4) at correct height. If necessary, move screws (5). Tighten screws (5).

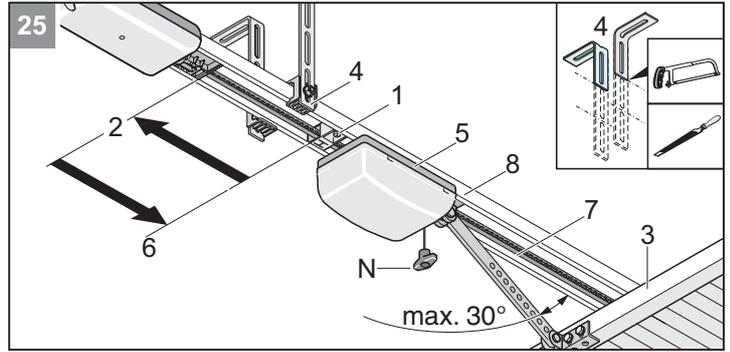


- 23**
- Mount connecting rod (1): Introduce bolt (2) and attach the retainer (3).

- 24**
- Pull once on emergency release cord (N). This unlocks the trolley (1). Tighten screw (8) on lintel fitting.
 - Use connecting rod (2) to push trolley (1) as far forward as possible (3). If necessary, release switch-trigger (4).

Wear safety goggles when drilling!
Check thickness of ceiling, particularly in prefabricated garages!

- Align angle of door fitting with centre of door (VM) and mark 5 drill holes. Drill 5 holes (Ø 5 mm).
- Insert 5 hexagon-head screws (6) and tighten securely.
- Release switch-trigger (4) and push right up to trolley (7).
- Tighten switch-trigger screw (4) securely.



Caution! Risk of injury!
Trim projecting part of ceiling bracket (4) (e.g. saw off and deburr).

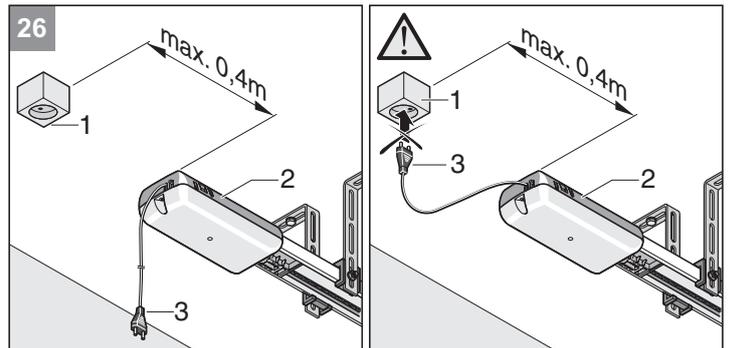
- 25**
- Release rear switch-trigger (1) and push right back to stop (2). Open door (3) by hand.
 - Push switch-trigger (1) right up to trolley (5). Securely tighten screw on switch-trigger (1).

Installing the socket outlet

i Socket outlet may only be installed by a qualified electrician. Protect socket with a fuse (16 A slow-blow).

Always comply with the applicable statutory regulations, standards and rules!

- If damaged, it is not possible to replace the power mains line separately. In this case, contract a qualified electrician to replace the mains line with the transformer.



- 26**
- Install socket (1) on ceiling at a distance of max 0.4 m to the control unit housing (2).
 - Install and connect the power cable from the socket to the mains power supply. **Do not yet plug the connector (3) into the socket outlet!**

Commissioning

Safety instructions

i After installing the operator, the person responsible for installation of the operator according to Machine Directive 98/37/EC must issue an EC Declaration of Conformity for the door system and affix the CE mark as well as a rating plate.

This also applies to doors installed for private purposes and in cases where the operator has been retrofitted to a manual door. These instructions, as well as the operator's installation and operating instructions should be kept by the user for reference purposes.

⚠ **Caution! Risk from injury!**
When operating the emergency release, it is possible that the door may open or close on its own due to the spring breaking or the weight balance being set incorrectly. The operator or the door might be damaged or destroyed.

- Ensure that no part of the door extends out onto a public area such as footpaths or roads.

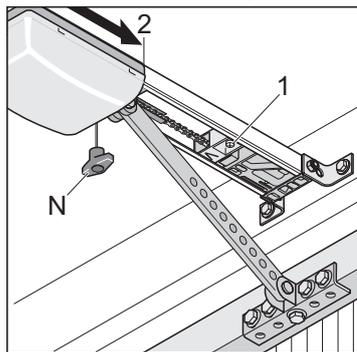
Adjusting door OPEN + CLOSED end positions

i While adjusting the settings, open and close the door manually. Do not operate it with the operator engaged.

The distance that the operator moves the door can be increased/reduced by using the switch-triggers (1 + 4).

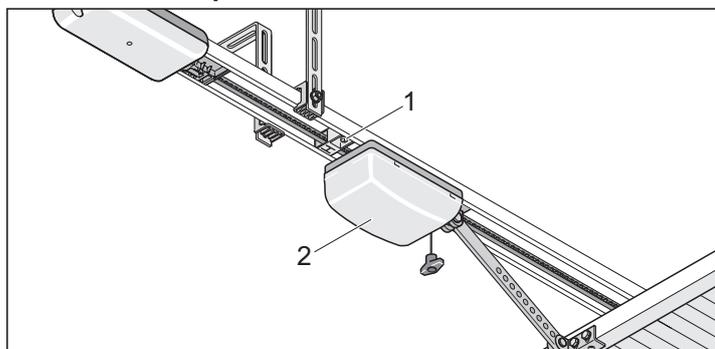
Check that the door opens and closes completely. If it does not, its travel must be adjusted.

Door CLOSED end position

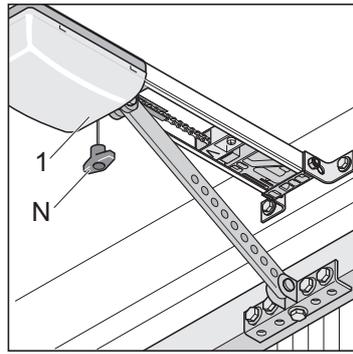


- Unlock the trolley if it is not unlocked. Pull once on emergency release cord (N). You should be able to move trolley back and forth manually.
- Shut the door manually.
- Loosen the switch-trigger (1) and push it towards the trolley (2) until it clicks into place (end switch tripped); secure the switch-trigger (1).

Door OPEN end position



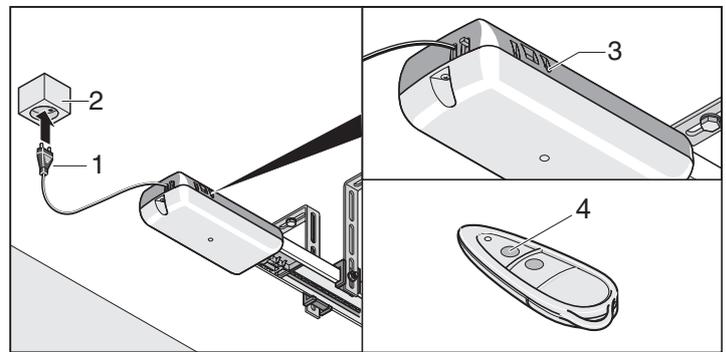
- Open the door manually.
- Loosen the switch-trigger (1) and push it towards the trolley (2) until it clicks into place (end switch tripped); secure the switch-trigger (1).
- Shut the door manually.



- Lock trolley (1):
Pull once on the emergency release cord (N) if trolley (1) is unlocked. Push the trolley a short distance manually, until the sprocket audibly clicks into place (loud click).

'Teaching' operator

The control unit is equipped with an automatic force setting facility. Whenever the door opens or closes, the control unit automatically reads in the force required and memorises it when the end position is reached.



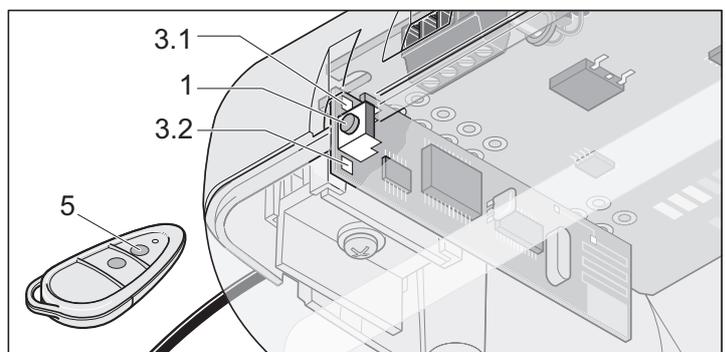
- Plug power plug (1) into the socket (2).
- ✓ LED (3) flashes once or continuously.

i The first movement of the operator after applying voltage must always be door OPEN. If this is not the case, swap the cables on terminals 3 + 4.

- Press button (4); the door opens until it reaches the door OPEN end position.
- Close door, press button (4).

'Teaching' remote control transmitters

i Always delete the radio receiver completely prior to the initial 'teaching' of hand transmitters.



Clearing radio receiver memory

- Press and hold the 'Learn' button (1).
 - After 5 seconds, the LED flashes (3.1 or 3.2) - after an additional 10 seconds, the LED (3.1 or 3.2) lights up.
 - After a total of 25 seconds, all LEDs light up (3.1 + 3.2).
- ✓ Release the 'Learn' button (1) - delete process is completed.

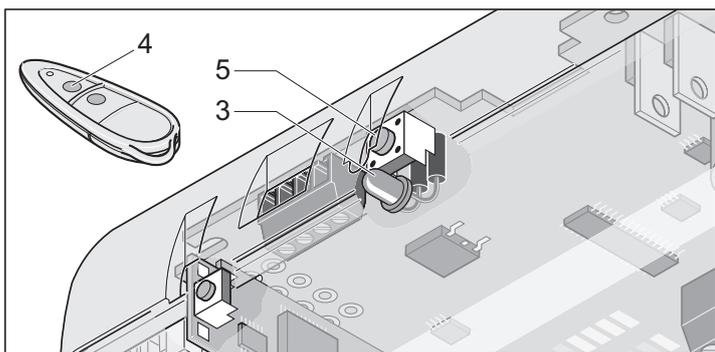
Commissioning

'Teaching' remote control transmitters

- Press 'Learn' button (1)
 - Press 1x for channel 1; LED (3.1) lights up
 - Press 2x for channel 2; LED (3.2) lights up
- If no radio code is transmitted within 10 seconds, the receiver switches back to normal operating mode.
- Aborting 'Teaching' mode: Repeatedly press 'Learn' button (1) until all LEDs are off (3.1 / 3.2).
- Press and hold desired hand-held transmitter button (5) until the LED (3.1/3.2) is off, depending on the selected channel. The respective code is transmitted to the radio receiver.
- ✓ LED is off - 'Teaching' process is completed.

To teach additional remote transmitters, repeat the above steps. The control system is equipped with 112 memory slots.

Reset the control unit



- Press button (5); LED (3) flashes.
- ✓ LED (3) is off - force values are deleted, release button (5).

Perform the following sequence 2x:

LED (3) flashes until the operator has executed 2 complete cycles (cycle = 1x open + 1x close) without interruption.

- Press button (4) 1x
 - Door opens to the switch-trigger (H, door OPEN)
- LED (3) flashes
- Press button (4) 1x
 - Door closes to switch-trigger (V, door CLOSED)
- LED (3) flashes

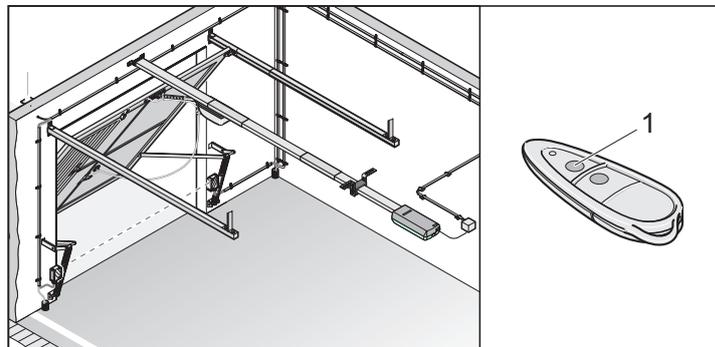
✓ When LED (3) ceases to flash, the force values are read in and saved.

✓ The operator has been 'taught' successfully!

Checking OPEN + CLOSED end positions

Operator travel can be increased/reduced by using the switch-trigger (1 + 4).

Check that the door opens and closes completely. If it does not, its travel must be adjusted.

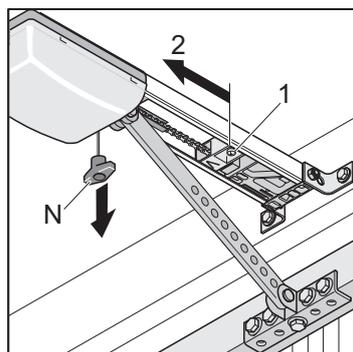


- Press button (1); the door opens/closes until it reaches the door OPEN/CLOSED end position.

If the door does not reach the desired door OPEN + CLOSE end positions, readjust the end positions. See chapter 'Adjusting OPEN + CLOSED end positions'.

Checking emergency release

i The backjump is always active, protecting the operator and door mechanisms against excessive strain. It also facilitates the activation of the emergency release.



- Close the door.
- Pull the emergency release (N) 1x.
 - If the emergency release cannot be operated, loosen the end switch (1) and move it in direction (2).
- Open the door with the operator and close it again. Test emergency release again.

Checking force settings

Whenever the door is opened or closed, the control unit compares the memorised force setting with the force actually needed and automatically adjusts the memorised setting accordingly when the end positions are reached.

Check See chapter 'Maintenance'.

Operation and handling

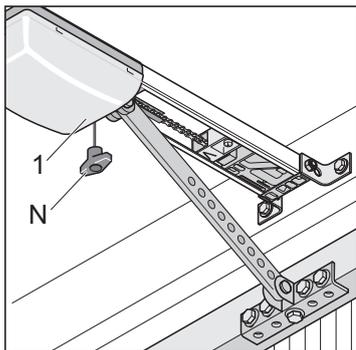
Safety instructions

- Keep children, disabled persons, and animals away from the door.
- Keep your hands clear of a door in operation and any moving parts.
- Only drive into and out of the garage when the door is fully opened.
- There is a risk of persons getting trapped or cutting themselves in/on the door system's moving parts or the edges where it closes.

Emergency release

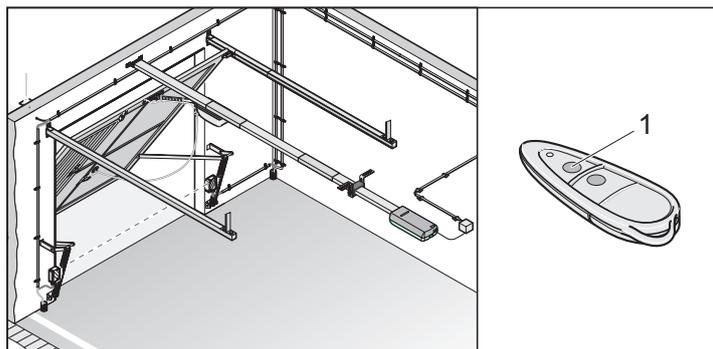
⚠ Caution! Risk from injury!
When operating the emergency release, it is possible that the door may open or close on its own due to the spring breaking or the weight balance being set incorrectly. The operator or the door might be damaged or destroyed.

i The operator can be engaged or disengaged in any door position.



- Pull once on the emergency release cord (N): the operator disengages and the door can be opened manually.
- Pull on the emergency release cord (N) once again: the operator locks into position and the door can only be moved using the drive mechanism.
- Door is fitted with a slip-door but no safety mechanism for the slip door: retro-fit slip-door safety mechanism (see chapter 'Accessories').
- Door has no slip-door and there is no second entrance: install release lock or control cable providing access to the release mechanism from the outside (see chapter 'Accessories').

Opening door



- Press button (1) 1x.
- The door stops moving, if this button is pressed again while the door is opening.
If the button is pressed again, the door closes.

Closing door

i The backjump is always active, protecting the operator and door mechanisms against excessive strain. It also facilitates the activation of the emergency release.

- Press button (1) 1x.
- The door stops moving, if this button is pressed again while the door is opening.
- If this button is pressed again, the door opens.

Pulse sequence of door movement

- Open - Stop - Close - Stop - Open - etc.

Interim stop

If an interim stop occurs due to the operation of a push-button or the hand-held remote control, the operator stops immediately. At the next command, the operator moves the door in the opposite direction. See also chapter 'Pulse sequence of door movement'.

Safety stop and obstacle detection

If the door strikes an obstacle (force switch-off) or if the safety input is interrupted (e.g. someone trips the light barrier), the operator recognises this and reacts accordingly.

Obstruction with door OPEN

Safety input 1 Terminals 7 + 8	No response from operator; door is opened.
Power switch-off	Operator stops. At the next command, the operator closes the door.

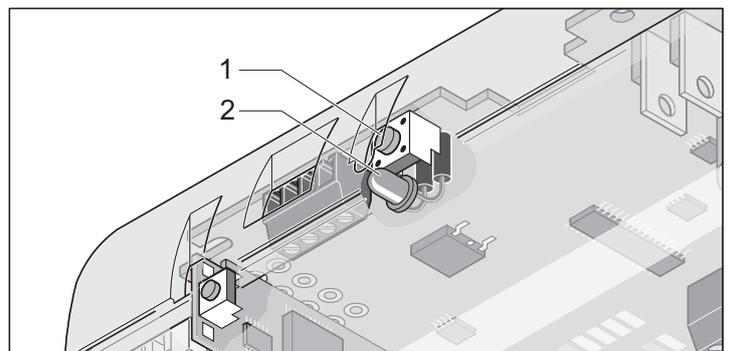
Obstruction with door CLOSE

Safety input 1 Terminals 7 + 8	Operator stops and opens door fully.
Power switch-off	Operator stops and opens door fully.

Backjump

This feature is used to relieve the door and operator mechanism from excessive strain. The operator travels briefly backwards in door OPEN direction once it has reached the door CLOSED end position, thus relieving the strain on the mechanism.

Control reset



- Press button (1); LED (2) flashes.
- LED (2) is off - force values are deleted, release button (1).

Overload protection

If the operator is subjected to excessive strain when opening or closing the door, this is recognised by the control unit which then stops the operator. After approx. 20 seconds or upon a control reset, the control unit deactivates the overload protection mechanism.

The operator can now recommence normal operation.

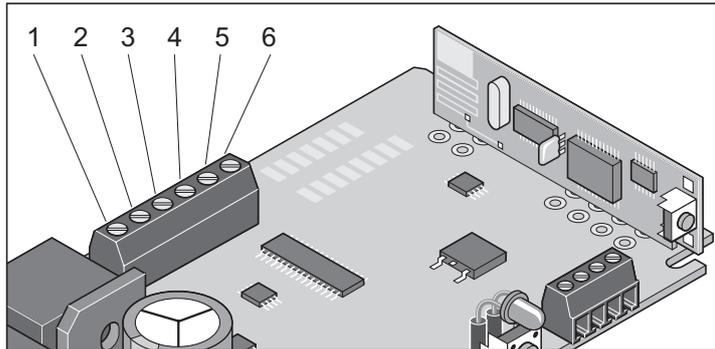
Operation following power failure

The force values remain in memory even during a power failure. The first movement of the unit following a power failure is always door OPEN.

Functions and connections

Connection strip

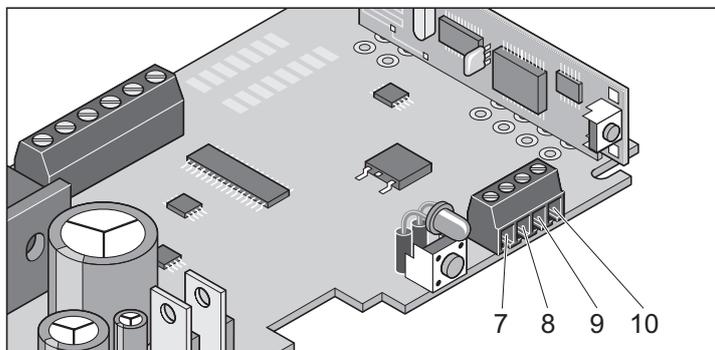
- Permissible cable cross-section: max. 1.5 mm².



Terminals	1 + 2	Transformer
Terminal	3	C-rail
Terminal	4	Chain
Terminals	5 + 6	Buttons

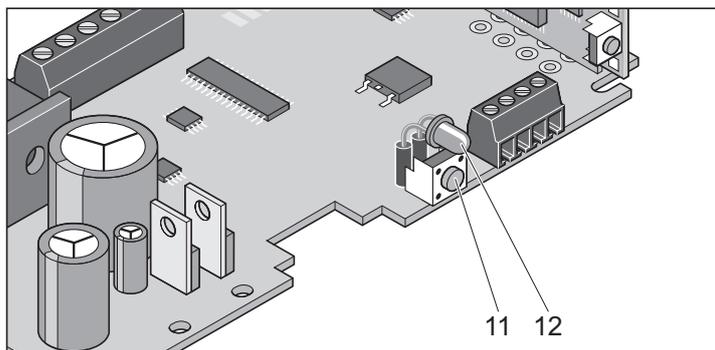
Connecting light barrier

- Permissible cable cross-section: max. 0.75 mm².



Terminals	7 + 8	Safety connection
Terminals	9 + 10	Regulated 24 V/DC, max. 0.1 A
Terminal	9:	24 V/DC
Terminal	10:	Ground

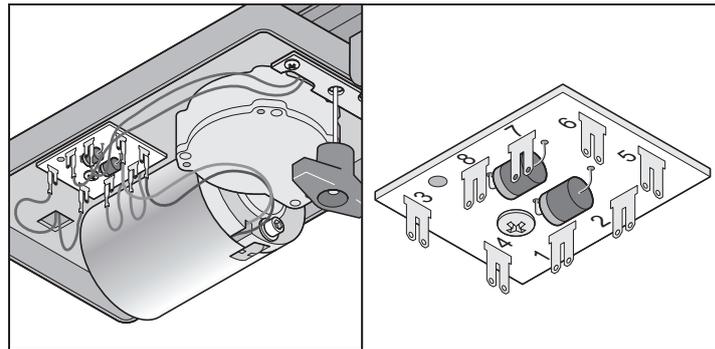
Buttons and LEDs



Button	11	Press button to reset control
LED	12	Indicates operator status

LED behaviour	Operator behaviour	Explanation
Flashes	- Operator is halted. - Operator is moving.	- No force values taught. - Force values taught; door is being opened or closed.
OFF	- Operator is halted.	- No force values taught.

Trolley board



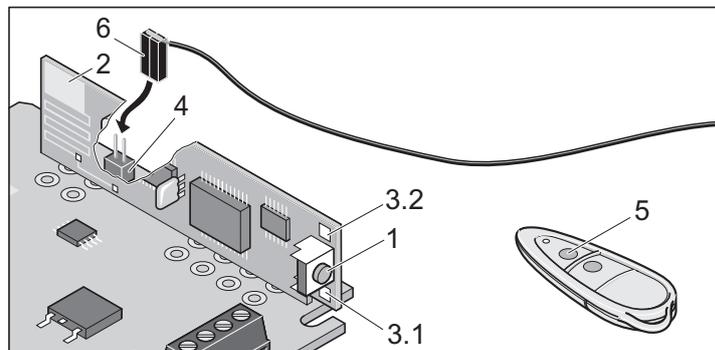
Terminals	1	Power supply to chain
	2	Power supply to rail
	3 + 4	End switch door OPEN
	5	Motor cable
	6	Motor cable
	7 + 8	End switch door CLOSED

Radio receiver

Safety instructions

- Ensure that the installation and operation of the system complies with the applicable statutory safety regulations! Information is provided by electrical power utilities, VDE (Association of German Engineers) and Employers' Liability Insurance Associations (or similar institutions).
- The operator of this radio-controlled equipment is in no way protected from interference from other telecommunications systems and facilities (e.g. other radio-controlled equipment that is licensed to operate at the same frequency range).
- Try replacing the batteries should reception problems be encountered.

Description of display and buttons



1. 'Learn' button
Switches the radio receiver into different operating modes: Learn, delete, and normal mode
2. Internal aerial
3. LEDs
Indicate the selected radio channel.
Channels 1 + 2 are assigned the same function.
3.1 LED channel 1
3.2 LED channel 2
4. Connection for external aerial (6)
If the transmission range is not sufficient with the internal aerial (2), you can use an external aerial (6).
5. Hand-held remote control button
6. External aerial

Functions and connections

'Teaching' remote control transmitters

- Press 'Learn' button (1)
 - Press 1x for channel 1; LED (3.1) lights up
 - Press 2x for channel 2; LED (3.2) lights up
- If no radio code is transmitted within 10 seconds, the receiver switches back to normal operating mode.
- Aborting 'Teaching' mode: Repeatedly press 'Learn' button (1) until all LEDs are off (3.1 / 3.2).
- Press and hold desired hand-held transmitter button (5) until the LED (3.1/3.2) is off, depending on the selected channel. The respective code is transmitted to the radio receiver.
- ✓ LED is off - 'Teaching' process is completed.

To teach additional remote transmitters, repeat the above steps. The control system is equipped with 112 memory slots.

Deleting remote control button from radio receiver

If a user of a multi-user garage facility moves house and wants to take his remote control transmitter with him, all the codes of the given user's remote control transmitter must be deleted from the radio receiver.

⚠ For security reasons, each button and/or combination of buttons of the remote control transmitter should be deleted!

- Press the 'Learn' button (1) and hold it for 5 seconds until a LED starts to flash (any LED)
- Release the 'Learn' button (1) - radio receiver is in delete mode.
- Press button to be disabled at the remote control - the LED is off. Delete process is completed.

Repeat procedure for all buttons and combinations of buttons.

Deleting channel from the radio receiver

- Press and hold the 'Learn' button (1).
 - Press 1x for channel 1; LED (3.1) lights up
 - Press 2x for channel 2; LED (3.2) lights up
- LED is on, depending on which channel has been selected. After 5 seconds, the LED starts to flash; after 10 seconds, it remains continuously on.
- ✓ Release the 'Learn' button (1) - delete process is completed.

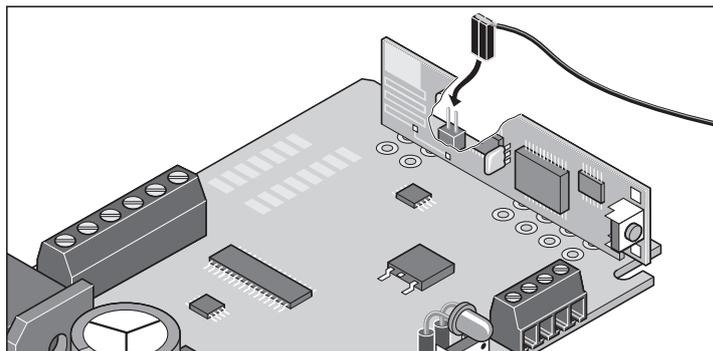
Clearing radio receiver memory

If a remote control transmitter is lost, for security reasons all channels on the receiver must be deleted! After this has been done, all the remote control transmitters must be 're-taught' by the receiver.

- Press and hold the 'Learn' button (1).
 - After 5 seconds, the LED flashes (3.1 or 3.2) - after an additional 10 seconds, the LED (3.1 or 3.2) lights up.
 - After a total of 25 seconds, all LEDs light up (3.1 + 3.2).
- ✓ Release the 'Learn' button (1) - delete process is completed.

Connecting an external aerial

Delivery status: free



Miscellaneous

Dismantling



Observe safety instructions!

Follow the instructions in chapter 'Installation' in reverse order. Adjustment of the equipment is not necessary.

Disposal

Observe applicable statutory regulations!

Warranty and after-sales service

The warranty granted complies with statutory requirements. Contact your local dealer for any warranty claims.

Warranty entitlements only apply in the country in which the given operator was purchased.

Batteries, fuses and bulbs are not covered by the warranty.

If you require customer service, spare parts, or accessories, please contact your dealer.

We have tried to make the installation and operating instructions as clear as possible. If you have suggestions on how the layout of this document could be improved, or if you feel that certain information is missing, please contact us with your ideas:

Fax: 0049 / 7021 / 9447-25

E-mail: info@aperto-torantriebe.de

Maintenance

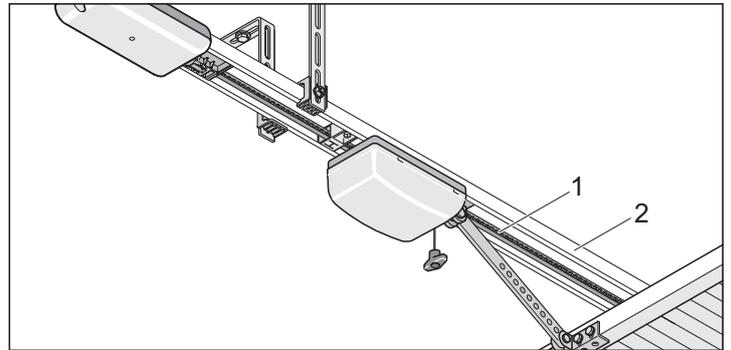
Important information



Never use a hose or a high-pressure cleaner to spray down the operator or the control unit housing.

- Always disconnect the mains plug prior to working on the operator mechanism.
- Never use alkaline solutions or acids for cleaning purposes.
- Wipe operator clean with a dry cloth as required.
- Keep your hands clear of a door in operation and any moving parts.
- There is a risk of persons getting trapped or cutting themselves in/on the door system's moving parts or the edges where it closes.
- All fixing screws on the operator should be checked for firm seat and tightened if necessary.
- Check the door in accordance with the manufacturer's instructions

Cleaning chains and guide rails



- If the chain (1) or guide rail (2) are dirty, clean them using a dry cloth.



Recommended oil types: Ballistol, WD40 contact spray

- If required, apply a little oil to the chain (1) or guide rail (2). Do not use grease!

Maintenance

Regular inspections

Inspect safety devices (e.g. power switch-off) every 4 weeks for proper functioning, see EN 60335-2-95:2001.

Inspection/test	Correct behaviour	yes/no	Possible cause	Remedy
Power switch-off				
To test force switch-off, place a 50 mm high obstacle in the path of the door.	Upon touching the obstacle, the door is halted and its motion is reversed.	yes	• Force switch-off functions properly	• Do not adjust settings.
		no	• Door or operator incorrectly configured.	• Adjust door or operator. Contact specialist!
Emergency release				
Complete procedure as described in the chapter 'Emergency release'.	Emergency release can be activated easily (pull 1x, operator is unlocked)	yes	• Settings OK!	
		no	• Operator pushes the door shut. Door and operator mechanisms are strained. • Emergency release is defective. • Door jams	• Adjust door CLOSED end switch. • Repair emergency release. • Check door, see maintenance instructions for door.
Light barrier (optional)				
Open/close door and trip the light barrier in the process.	Door closing: Operator stops and opens door fully.	yes	• Settings OK!	
	Door opening: No response from operator; door is opened.	no	• Cable break, loose terminal connection • Photoelectric cell dirty • Light barrier misaligned (bent bracket) • Photoelectric cell defective	• Check wiring, tighten terminal connection • Clean photoelectric cell • Adjust light barrier settings • Completely shut down the door operator and ensure that it cannot inadvertently be restarted. Contact after-sales service!

Troubleshooting

More troubleshooting tips



Many problems can be solved by a control reset (deletion of force values) and subsequent reprogramming of the operator!

Should you be unable to find and eliminate the fault with the help of this table, take the following steps:

- Complete control reset (deletion of programmed force values).
- Disconnect any accessories that may have been connected (e.g. light barrier) and reconnect the jumper if there is a safety connection.
- Check all connections to the connection strips and tighten, if necessary.

To eliminate faults, follow the instructions in the table below. If an error persists, contact your stockist or visit the 'Forum' page on our website at www.sommer-torantriebe.de.

Fault	Possible cause	Remedy
Operator moves too slowly (soft run mode only)	Saved force values are not correct	Reset control and repeat teaching procedure
	Operator is not programmed, no force values are saved	Teach operator See chapter 'Commissioning'
Operator does not work	No mains power	Plug in power plug
	No control unit installed	Install control unit
	Fuse in garage circuit has tripped	Replace fuse, use a different device e.g. electric drill, to check the power supply
	Light barrier has tripped	Remove obstacle
Operator does not respond to remote control commands	Battery in remote control transmitter is flat	Change battery
	Hand-held remote control has not been taught to communicate with radio receiver	Teach remote control transmitter
Door stops during closing motion and then opens fully	Obstacle has tripped automatic force switch-off	Remove obstacle
	Incorrect force values programmed	Reset control and repeat teaching procedure
	Switch-trigger set incorrectly	Adjust switch-trigger; see chapter 'Adjusting end switches'
	Door defective or door settings incorrect (e.g. spring shaft)	Have door adjusted or repaired by specialist
Door stops during opening motion	Obstacle has tripped automatic force switch-off	Remove obstacle. Press button to close door fully
	Incorrect force values programmed	Reset control and repeat teaching procedure
	Switch-trigger set incorrectly	Adjust switch-trigger; see chapter 'Adjusting end switches'
Operator fails to close door	Photoelectric cell not powered	Check connection Replace fuse
	Safety input has been tripped (e.g. light barrier defective)	- Remove obstacle from light barrier - Repair light barrier
	Power supply to operator interrupted	The first command issued after the mains supply has been restored results in the operator opening the door
Opening or closing speed varies	Operator starts slowly and then picks up speed	Unit in 'soft run' mode, everything is OK
	Chain rail dirty	Clean rail and re-lubricate, see chapter 'Maintenance'
	Chain rail lubricated with unsuitable oil	Clean rail and re-lubricate, see chapter 'Maintenance'
	Incorrect chain tension	Tighten chain, see chapter 'Installation'
Operator does not terminate 'Learn' sequence.	End positions set incorrectly	Adjust end positions, see general instructions in chapter 'Commissioning'
Only in units with radio receiver!		
All LEDs are flashing	All memory slots are occupied (max. 112 positions)	- Delete the data of all radio control devices that are not in use - Install additional radio receiver
LED 3.1 or 3.2 is continuously on	Radio signal is being received; remote control transmitter button might be defective or an external signal is received	- Remove battery from the remote control transmitter - Wait until the external signal disappears
LED 3.1 or 3.2 is on	Radio receiver is in 'teaching' mode and expects a code signal from a remote control device	Press desired button on remote control transmitter.

