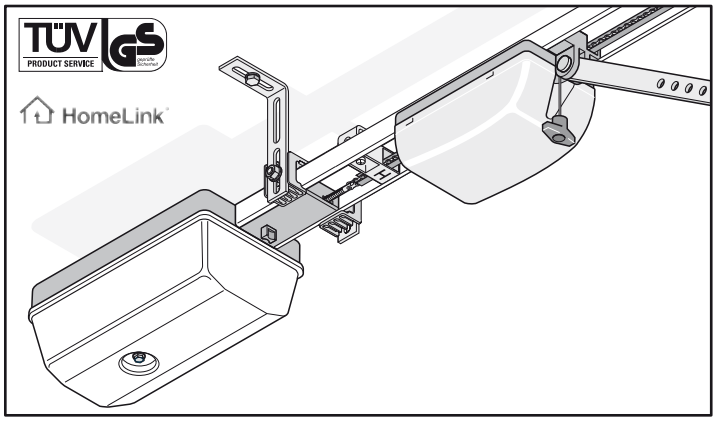
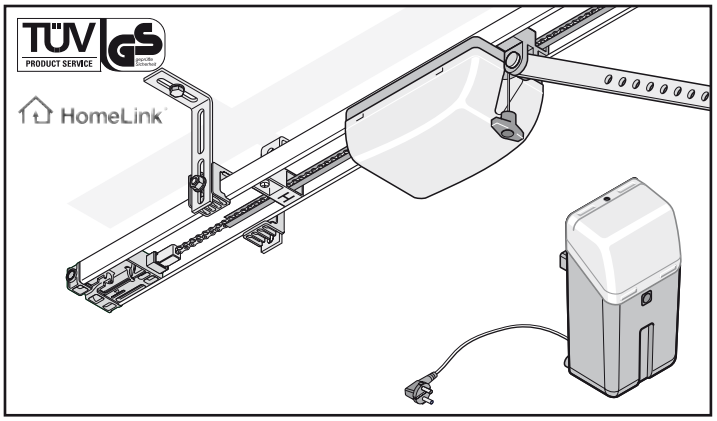
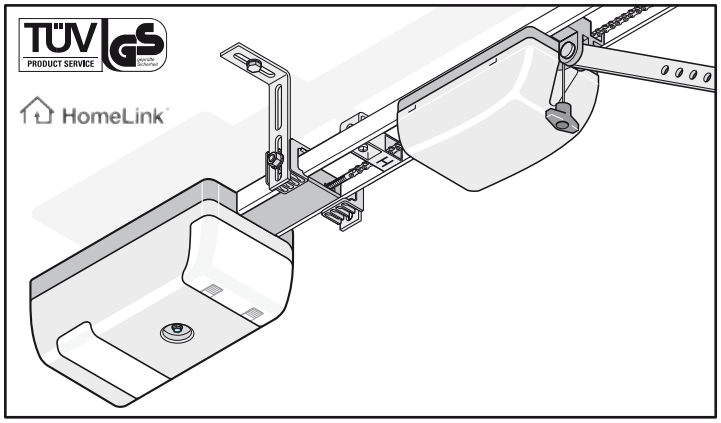


sprint 550 SL



duo 500-, 650 SL



marathon 550-, 800-, 1100 SL

(GB) Original installation and operating instructions 1 - 34

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General Information

Symbols

Caution symbol:
Indicates a potential risk. Failure to follow instructions may result in serious injuries.

Note symbol:
Information, useful advice.

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

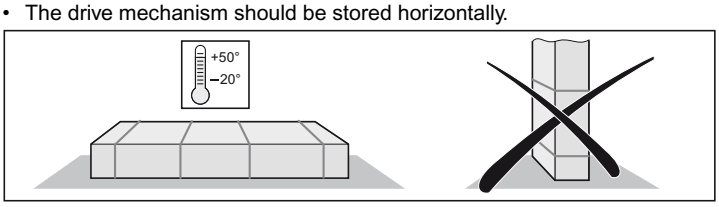
Safety instructions

General

- Installation, connection and initial operation of the drive mechanism may only be carried out by qualified specialists.
- Only install the drive mechanism to correctly aligned and weight-balanced doors. An incorrectly aligned door could cause serious injury or damage to the drive mechanism.
- 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 the locally applicable accident prevention regulations and EC standards.
- Observe and comply with the directive on 'Power-driven Windows, Doors and Gates - BGR 232' issued by the Employers' Liability Insurance Association (valid for the given user in Germany).
- Always disconnect the drive mechanism from the power supply before carrying out any work.
- Only use the manufacturer's original spare parts, accessories and fixing material.

Storage

- The drive mechanism may only be stored indoors, in a dry, sealed environment at an ambient temperature of between -20°C and +50°C.
- The drive mechanism should be stored horizontally.



Operation

- The drive mechanism may only be operated after a risk-free force tolerance has been set. Select the lowest possible force tolerance to reduce the risk of injury.
- Keep your hands clear of any 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.
- Risk of persons trapping or cutting themselves in/on the door system's moving parts or 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.

Radio remote control

- The radio remote control may only be used for equipment and systems in which defective remote operation of the transmitter or radio receiver does not constitute a risk to people, animals or property, or in cases where this risk is eliminated by means of additional safety facilities.
- The user must be made aware of the fact that the remote control of equipment with accident risk potential may only occur, if at all, when the equipment concerned is clearly visible.
- Radio remote control may only be used if movement of the door can be supervised and there are no persons or objects in the area of movement.
- Store the manual remote control such that there is no risk of it being accidentally operated 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 manually-operated remote control near locations or installations that are susceptible to radio interference (airports, hospitals).

Rating plate

The rating plate is located on the cover of the control unit housing.

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

Normal use

Caution! Risk of serious damage to drive!
Do not open or close the door with the drive system without first adjusting the balance weight (springs tensions). Otherwise, the motor (gear system) might be seriously damaged.

Caution! Risk to life and limb!
Remove all ropes and loops that are required for the manual operation of the door.

- The drive is designed for the exclusive purpose of opening and closing doors. Any other use does not constitute normal use. The manufacturer accepts no liability for damage resulting from use other than normal use. The user accepts sole responsibility for any risk thereby incurred.
- Doors operating automatically with a drive must comply with the standards and directives valid at the given time: e.g. EN 12604, EN 12605.
- The drive system may only be operated if it is in proper working order. Always follow standard safety procedures and adhere to the instructions in this installation and operating manual.
- Any defects that may impair the safe operation of the equipment should be eliminated without delay.
- The door leaves must be stable and twist-proof, i.e. they should not bend or twist during opening or closing operations.
- The drive mechanism is unable to compensate for any defects in the door or for its incorrect installation.
- Only use the drive mechanism in a dry, indoor environment where there is no risk of explosion.
- Do not use drive in rooms where a hostile environment prevails (e.g. salty air).

General Information

Maximum door dimensions *

sprint	**550 SL**	
Max. width		
- Up-and-over door:	4000	mm
- Sectional door:	4000	mm
- Swing door **:	2800	mm
- Side-opening sectional door or lateral shutter door:	2350	mm
- Canopy and non-protruding door:	3500	mm
Height (approx.)		
- Up-and-over door:	2600	mm
- Sectional door:	2350	mm
- Swing door:	2800	mm
- Side-opening sectional door or lateral shutter door:	2300	mm
- Canopy and non-protruding door:	1900	mm
Duty cycle:	15	%

duo	**500 SL**	**650 SL**	
Max. width			
- Up-and-over door:	3500	5000	mm
- Sectional door:	3500	5000	mm
- Swing door **:	-	2800	mm
- Side-opening sectional door or lateral shutter door:			
Rail 2600	2350	2350	mm
Rail 3000	2750	2750	mm
Rail 3400	3150	3150	mm
- Up-and-over door:	-	4000	mm
Height (approx.)			
- Up-and-over door:			
Rail 2600	2600	2600	mm
Rail 3000	3000	3000	mm
Rail 3400	3400	3400	mm
- Sectional door:			
Rail 2600	2350	2350	mm
Rail 3000	2750	2750	mm
Rail 3400	3150	3150	mm
- Swing door **:			
Rail 2600	-	2800	mm
- Side-opening sectional door or lateral shutter door:			
Rail 2600	2300	3000	mm
- Canopy and non-protruding door:			
Rail 2600	-	1900	mm
Rail 3000	-	2300	mm
Rail 3400	-	2700	mm
Duty cycle:	15	15	%

marathon	**550 SL**	**800 SL**	**1100 SL**	
Max. width				
- Up-and-over door:	5000	6000	8000	mm
- Sectional door:	5000	6000	8000	mm
- Swing door **:	2800	2800	2800	mm
- Side-opening sectional door or lateral shutter door:				
Rail 2600	2350	2350	2350	mm
Rail 3400	3150	3150	3150	mm
- Duty cycle:	4000	5500	7500	mm
Height (approx.)				
- Up-and-over door:				
Rail 2600	2600	2600	2600	mm
Rail 3400	3400	3400	3400	mm
- Sectional door:				
Rail 2600	2350	2350	2350	mm
Rail 3400	3150	3150	3150	mm
- Swing door **:	2800	3000	3500	mm
- Side-opening sectional door or lateral shutter door:	2500	3000	3500	mm
- Canopy and non-protruding door:				
Rail 2600	1900	1900	1900	mm
Rail 3400	2700	2700	2700	mm
Duty cycle:	40	40	40	%

* door conforming to EN 12604, EN 12605

** with standard wing-door hinges prod. no. 1501.
If a higher door is required, rails of the respective length must be ordered. Alternatively, the necessary height can be achieved by installing rail extensions. Please contact your stockist for more information.

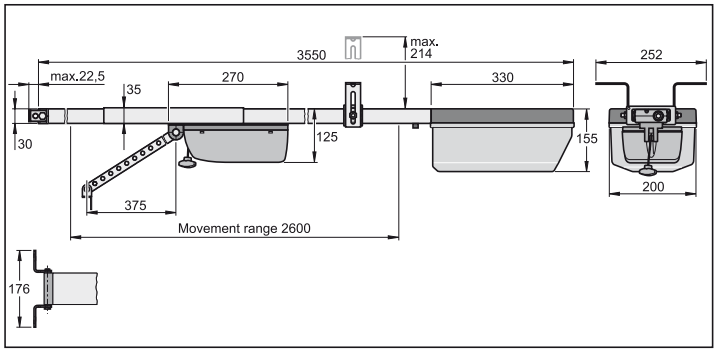
Technical data

General

Rated voltage:	220 …240	V/AC
Rated frequency:	50/60	Hz
Light:	max. 32,5 V, max. 34 W, BA 15s alternatively 24 V, 21 W, BA 15s	
Operating temp. range:	-20 - +50	°C
Protection class:	IP 20	

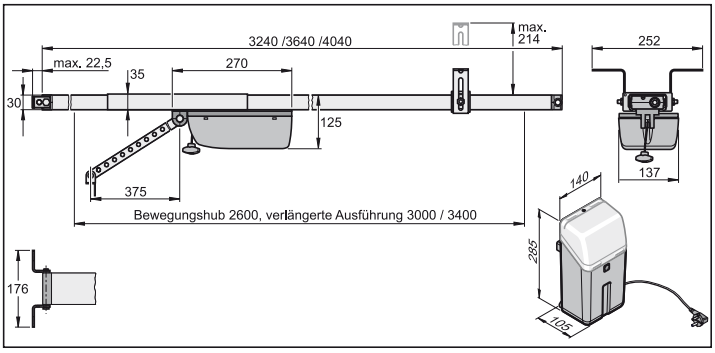
Workplace-specific emission value < 75 dBA - operator only

sprint	**550 SL**	
maximum traction and pressure force:	550	N
Rated traction:	165	N
Rated current consumption:	0,7	A
Rated power consumption:	140	W
Maximum speed:	160	mm/s
Power consumption, stand-by:	~ 7	W
Weight:	17,0	kg
Packaging (L x W x H):	1980 x 240 x 180	mm

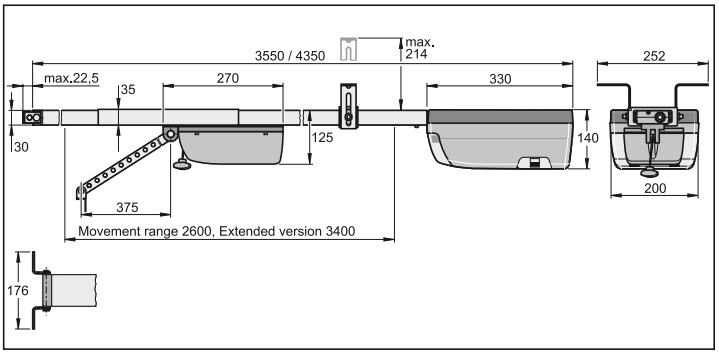


General Information

duo		500 SL	650 SL	
Maximum traction and pressure force:		500	650	N
Rated traction:		150	195	N
Rated current consumption:		0,5	0,7	A
Rated power consumption:		110	150	W
Maximum speed:		150	180	mm/s
Power consumption, stand-by:		~ 7	~ 2	W
Weight with:	rail 2600:	16,0	16,0	kg
	rail 3000:	17,4	17,4	kg
	rail 3400:	18,4	18,4	kg
Packaging (L x W x H):				
- Drive			790 x 160 x 160	mm
- rail 2600			1665 x 160 x 50	mm
- rail 3000			1860 x 160 x 50	mm
- rail 3400			2060 x 160 x 50	mm



marathon		550 SL	800 SL	1100 SL	
Maximum traction and pressure force:		550	800	1100	N
Rated traction:		165	240	330	N
Rated current consumption:		0,7	0,8	0,9	A
Rated power consumption:		150	160	190	W
Maximum speed:		180	130	130	mm/s
Power consumption, stand-by:		~ 2	~ 2	~ 2	W
Weight with:	rail 2600:	18,0	18,5	19,0	kg
	rail 3400:	20,4	20,9	21,4	kg
Packaging (L x W x H):					
- rail 2600			1980 x 240 x 180		mm
- rail 3400			2365 x 240 x 180		mm



EU manufacturers' declaration

Messrs.

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

herewith declares that its drives:

- sprint 550 SL
- duo 500 SL, 650 SL
- marathon 550 SL, 800 SL, 1100 SL

comply with the following directives:

- Machine Directive 98/37/EG
- Low Voltage Directive 73/23/EWG
- EU Electromagnetic Compatibility Directive 73/23/EWG

Above all, the following standards/draft standards were applied:

- EN 12 453:2000, EN 12 445:2000, EN 60204-1:1997, EN 954-1:1996
- DIN V VDE 0801, EN 60335-1:1994

Please note:
The door system may not be commissioned until such time as it has been established that the system in which the given drive is to be installed satisfies the specifications of all relevant EU directives.

Kirchheim, 29.01.2002

Uwe Sommer
Managing Director

EU Conformity Declaration

Messrs

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

declares herewith that the product designated below complies with the relevant fundamental requirements as per Article 3 of the R&TTE Directive 1999/5/EG, insofar as the product is used correctly, and that the following standards apply:

Product: RF Remote Control for doors & gates

Type: RM04-868-2, RM03-868-4, RX01-868-2/4, RFSDT-868-1, RFSW-868-1, RM02-868-2, RM06-868-2, RM04-868-1, RM02-868-2-TIGA, RM08-868-2, RM01-868, RM02-434-2, RM03-434-4, RM04-434-2

The relevant guidelines and standards are:

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

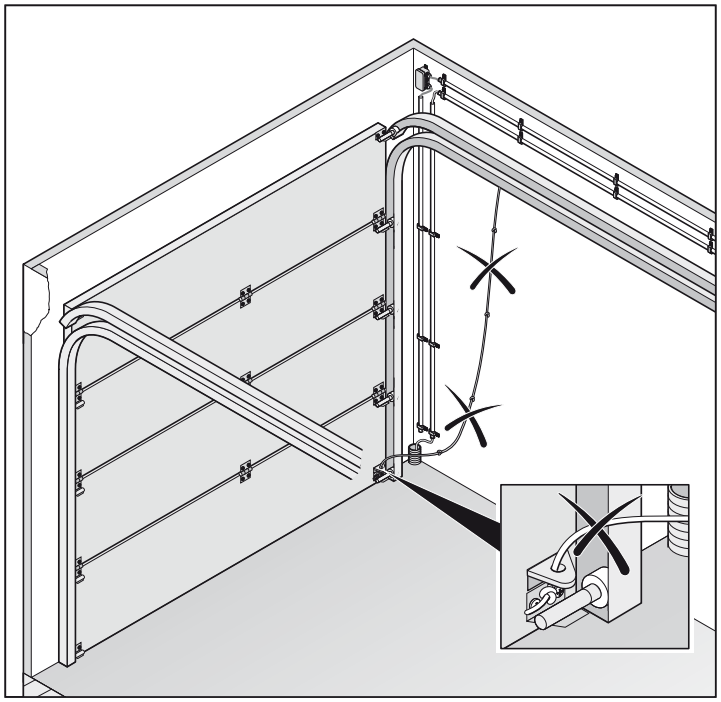
Kirchheim/Teck, 04.08.2004
Frank Sommer
Managing Director

Preparations for Installation

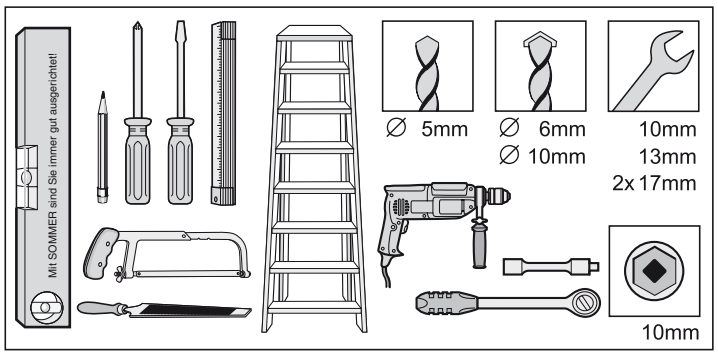
Safety instructions

- The power cable supplied as standard may be neither shortened nor lengthened.
- The voltage of the power source must correspond to that indicated on the drive's rating plate.
- All devices requiring external connection must be equipped with safe contact separation as per IEC 364-4-41 to isolate them from the mains voltage supply.
- Live parts of the drive (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.

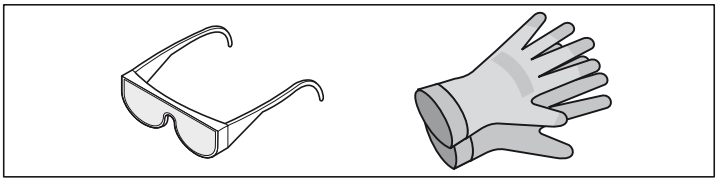
⚠ **Caution! Risk to life and limb!**
Remove all ropes and loops that are required for the manual operation of the door.



Tools required



Personal protective equipment



- Protective goggles (for drilling)
- Protective gloves (for handling of cut perforated steel strips, etc.)

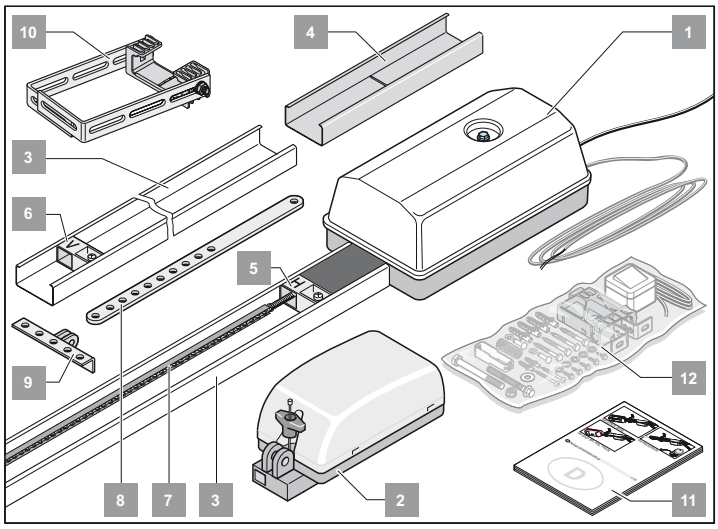
Installing wicket-door facility or release lock

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

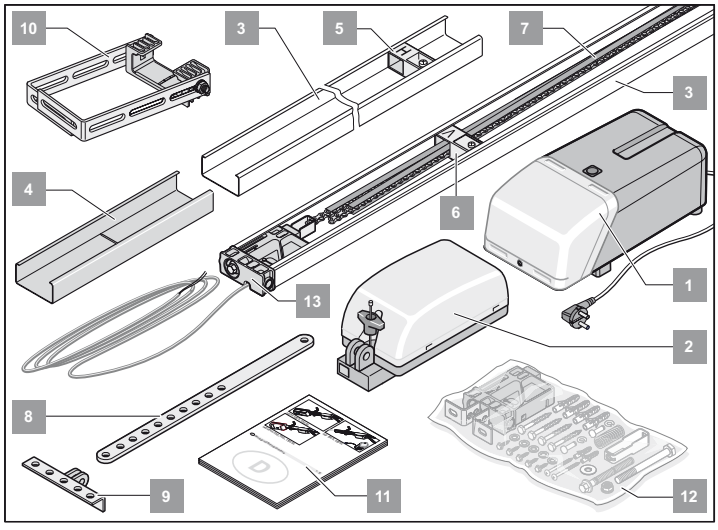
Supplied components

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

sprint

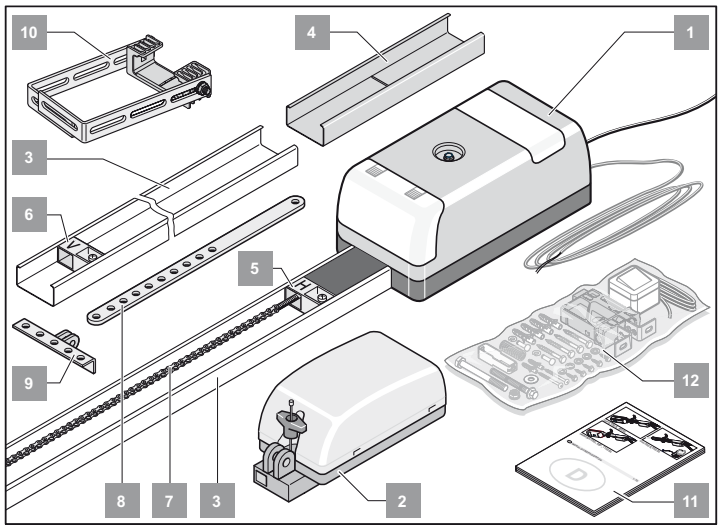


duo



Preparations for Installation

marathon



Item	Component	sprint	duo	marathon
1.	Control housing (push-button line, mains cable, illumination)	1	-	1
-	Control housing (push-button, mains cable, illumination)	-	1	-
2.	Trolley	-	-	1
-	Trolley (chain case)	1	1	-
3.	C-rails (coated)	-	-	2
-	C-rails (uncoated)	2	2	-
4.	Slide-on module (coated)	-	-	1
-	Slide-on module (uncoated)	2	2	-
5.	Switch trigger "H"	1	1	1
6.	Switch trigger "V"	1	1	1
7.	Chain (marathon)	-	-	1
-	Chain in chain case (sprint) (plastic chain case is not packaging - do not remove)	1	-	-
-	Chain in chain case (duo) (plastic chain case is not packaging - do not remove)	-	1	-
8.	Connecting rod	1	1	1
9.	Door hinge	1	1	1
10.	Suspension bracket	1	1	1
11.	Installation and operating manual	1	1	1
12.	Assembly kit (sprint/marathon)	1	-	1
-	Assembly kit (duo)	-	1	-
13.	Slide-in module with control line (length 5,000 mm)	-	1	-

General Installation Information

Safety instructions

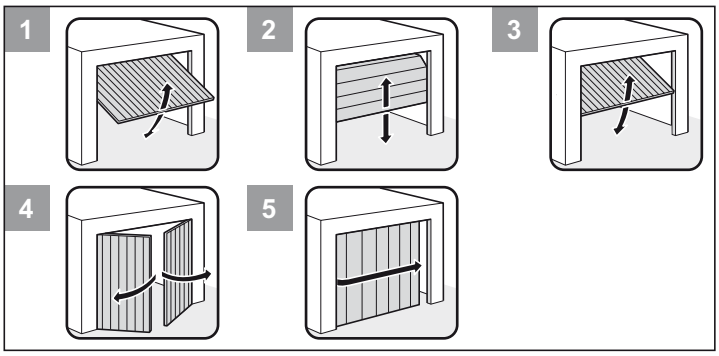
- Installation, connection and initial operation of the drive mechanism may only be carried out by qualified specialists.
- Do not operate the door when people, animals or objects are in its area of movement.
- Keep children, disabled persons and animals away from the door.
- Safety goggles should be worn when drilling the mounting holes.
- Cover the drive mechanism up when drilling to ensure it does not get soiled.

⚠ **The walls and ceiling must be firm and stable. Only fit the drive mechanism 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 strengthened before installation if necessary. Ask your specialist retailer for advice.
- Remove door locking system or disable same.
- Only use approved fixing materials (e.g. screws, plugs) that are appropriate for the given material the ceilings and walls are made of.
- Check that the door runs easily.
- The door must be balanced.
  Test : Manually open the door half-way. It must stay still in this position. If the door moves downwards or upwards, mechanically readjust it. Ask your specialist retailer for advice.
- Check the distance between the highest door position (HDP, see fig. 7 for sprint/marathon and fig. 11 for duo) and the ceiling. The distance between HDP and the lower edge of the C-rail must be between minimum 5 mm and maximum 65 mm, whereby the push rod must be at an angle of max. 30° (see fig. 17)! If the clearance is less than is permissible, the drive mechanism has to be moved back and an extended drive rail fitted. Ask your local stockist for advice.

Door types and special accessories*

* Accessories are not included in the delivery.

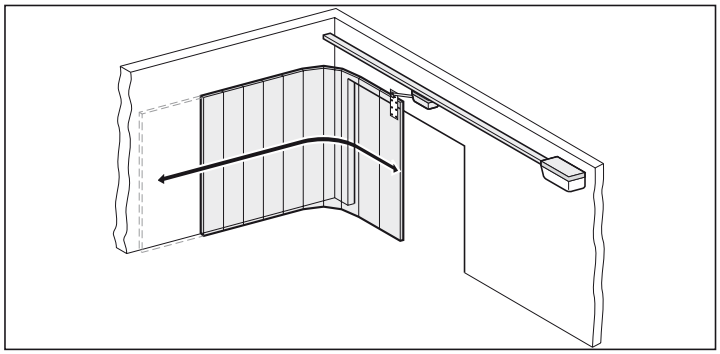


Door type		Accessories
1	Up-and-over door	No special accessories required
2	Sectional door with single runner rail	Sectional door fitting with boomerang*
2	Sectional door with double runner rail	Sectional door fitting without boomerang*
2	Shutter-type door	No accessories required
3	Canopy and non-protruding door	Tilting arm*
4	Swing door	Swing-door fitting*
5	Side-opening sectional door	Please consult specialist retailer

Installation tips

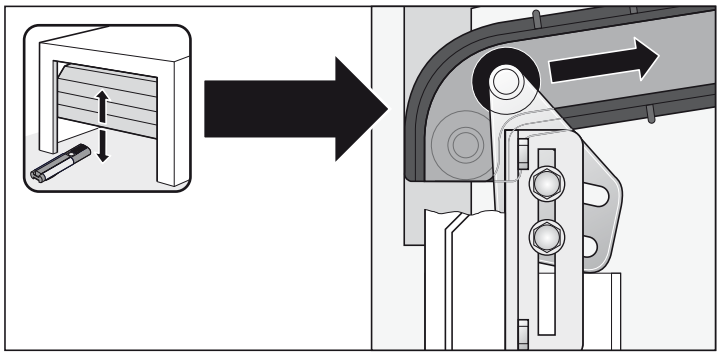
- Check that all the parts have been supplied before you start installation work in order to save time and unnecessary work if a part is missing.
- Installation work can be carried out quickly and reliably by two persons.
- The drive mechanism can be installed to one side of the door if it cannot be installed at the centre. It is important to note that the door does not bend as a result and jam in the guide rails.
  Check : Open and close the door several times by hand holding it at the point where you intend fitting the drive mechanism. If the door can be moved in this way without difficulty (in compliance with the above forces), then the drive mechanism can be fitted at this point.
- **Emergency Release**
  If the garage has no separate entrance (e.g. wicket-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 Bowden wire or a release lock. See 'Accessories' section.
- **Canopy and non-protruding doors**
  As the mechanical lock of a door with a drive mechanism has to be dismantled or deactivated, it is possible to open the door manually up to approx. 50mm depending on the door construction.

  In order that, when opening the doors, the spring latches are unlocked first before the drive opens the door. These spring latches are connected to the drive via a locking set in order to first unlock the spring latches before a drive opens the door when opening the door.
- **Swing door / Side-opening sectional door**
  In the case of drives that push open a door of the above-mentioned type (see fig.), the connections made in the direct socket unit have to be swapped around as follows:
  - wires 12 + 13 (marathon)
  - wires 3 + 4 (sprint and duo).



Other pulse generators include: Funkcodys, radio-operated interior switches and key-operated switches. In the case of the Funkcody and radio-operated interior switch, no cable need be run to the drive. Contact your local dealer for advice.

Adjustment of the top roller in a sectional door



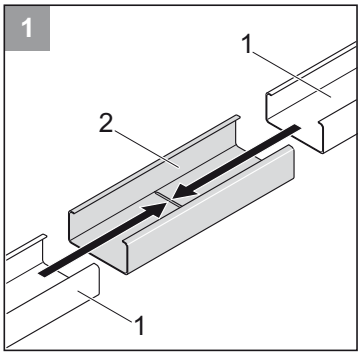
Installation sprint / marathon

Pre-installation

- Remove the drive mechanism from its packaging.

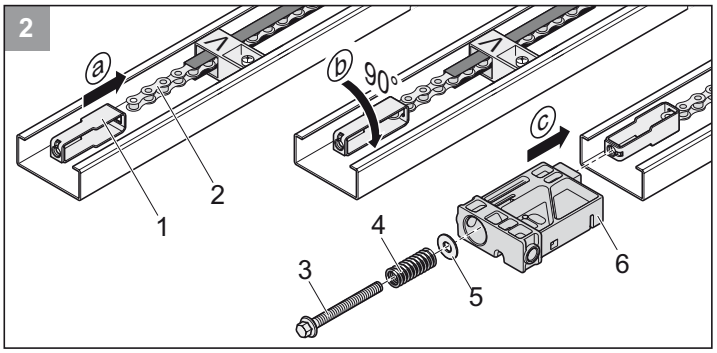
Dispose of packaging material according to the applicable statutory regulations.

Caution for sprint and duo!
The plastic chain case is not packaging – do not remove!

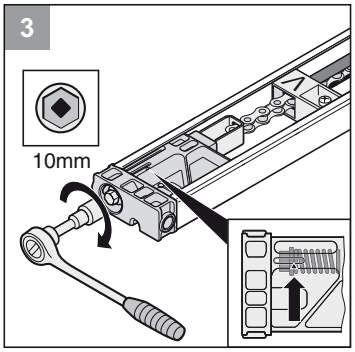


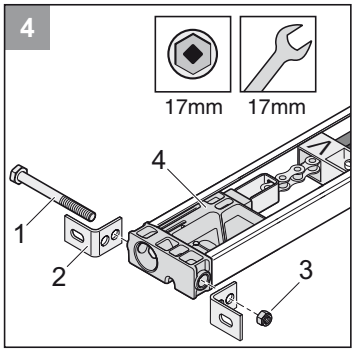
In the case of the marathon drive, treat the non-coated sides with care.

1 • Slot two C-rails (1) into connecting element (2) and push together as far as they will go.



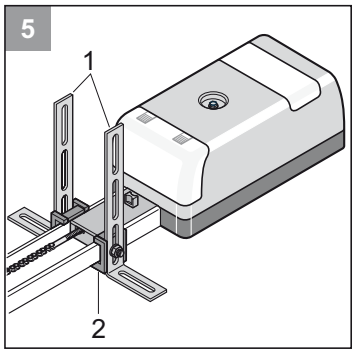
2 • Hook tensioner (1) to chain (2) and turn it by 90°.
Insert connecting element (6) and push tensioner (1) through it. Place washer (5) and spring (4) onto the tensioning bolt (3) and screw the bolt into the tensioner (1).

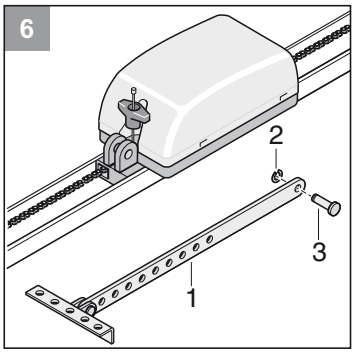




3 • Tighten nut (1) up to mark (arrow).

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



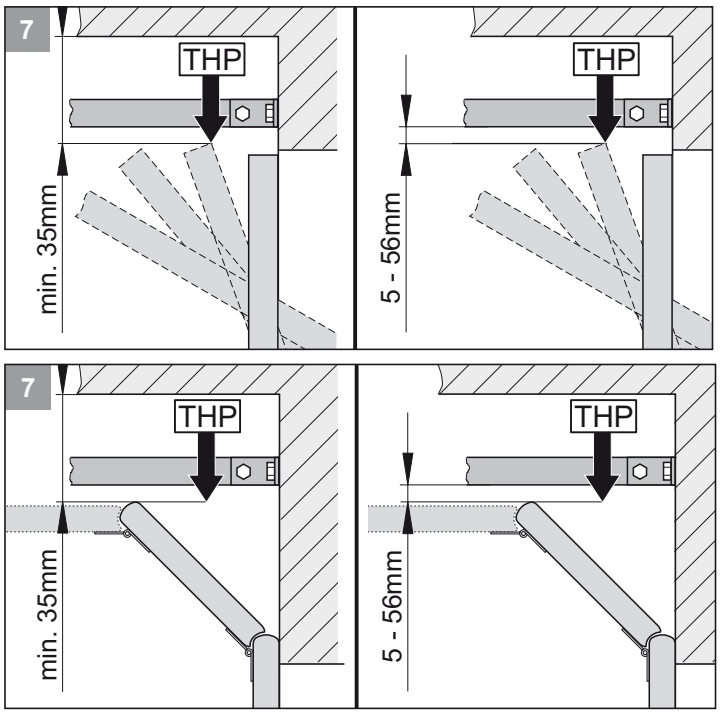


5 • Unscrew two steel angle irons with length adjustment holes (1) and screw onto ceiling bracket (2) as shown.

6 • Dismantle drive shaft (1):
Pull out clip fixing (2) and remove bolt (3).

Installation

Use a non-slip, stable stepladder!

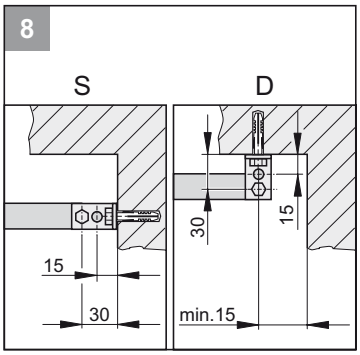


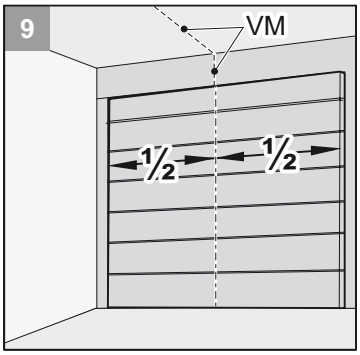
If the distance between the ceiling and the lower edge of the C-rail is greater than 245 mm, then extend the suspension bracket (with perforated steel strip).

7 • Determine door's highest up-position (THP):
Open door and measure smallest clearance (min. 35 mm) between top edge of door and ceiling. The distance between HDP and the lower edge of the C-rail must be between minimum 5 mm and maximum 65 mm, whereby the push rod must be at an angle of max. 30° (see fig. 17)!

Please note that this distance might be smaller, if the door handle is located at the centre of the door. Ensure that the door movement is not obstructed.

Installation sprint / marathon

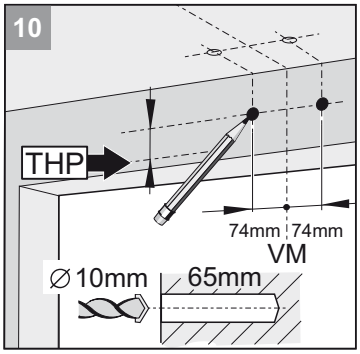


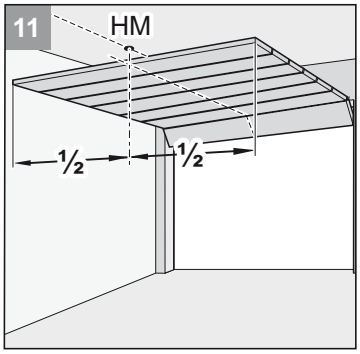


For installation on the ceiling (D), drill holes at distances of 15 mm, if possible. Smaller angle of inclination of the fixing brackets.

8 • The drive mechanism can be mounted on lintel (S) or ceiling (D).

9 • Measure front centre point (VM) of door and mark on door and on lintel or ceiling.



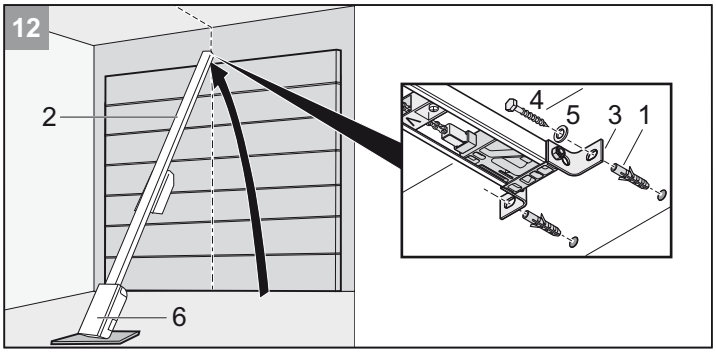


10 • Make a mark 74 mm to right and left of centre of door (VM) at same height on lintel or ceiling (see fig. 8).

• Drill two holes (Ø 10 x 65 mm).

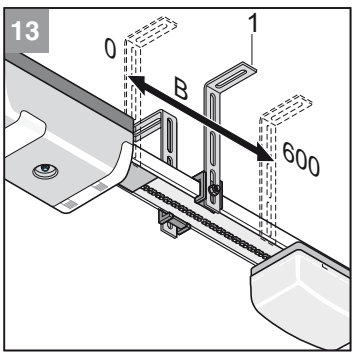
Wear safety goggles when drilling!
Check thickness of ceiling, particularly with prefabricated garages!

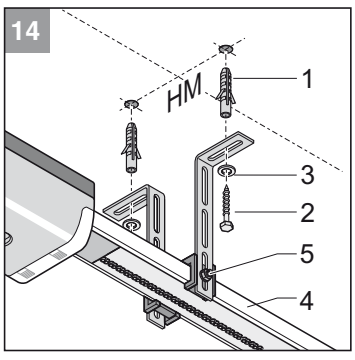
11 • Open door. Transfer door centre mark (HM) on to ceiling. Close door.



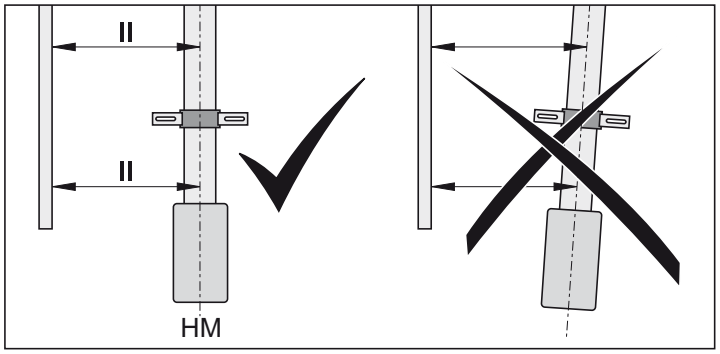
12 • Insert plug (1). Lift up drive mechanism (2) at front. Secure lintel fitting (3) at front with two screws (4) and plain washers (5).

Protect control unit housing (6) from damage!





Caution!
Mount the drive in parallel to the runner rails of the door.



13 • Lift up drive

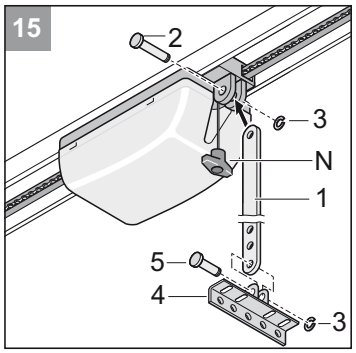
• Align ceiling bracket (1). It should be located within a range of B = 0 ... 600 mm.

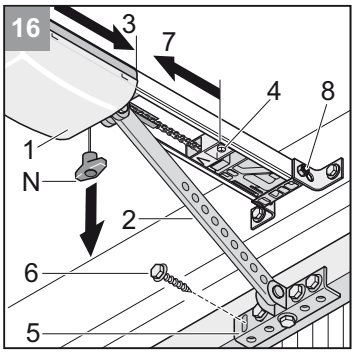
14 • Align drive mechanism horizontally to rear centre of door (HM). Mark position of holes. Drill two holes (Ø 10 x 65 mm deep).

Wear safety goggles when drilling!
Check thickness of ceiling, particularly with 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).





15 • Mount drive shaft (1):
Insert the long bolt (2) and slide on the securing clip (3).

• Attach the door hinge (4) to the connecting rod (1) using the short bolt (5) and slide on the securing clip (3).

16 • Pull once on emergency release wire (N), thus disengaging bogie unit (1). Tighten screw (8) on lintel fitting.

• Use drive shaft (2) to push bogie unit (1) as far forward as possible (3). If necessary, release cut-off buffer (4).

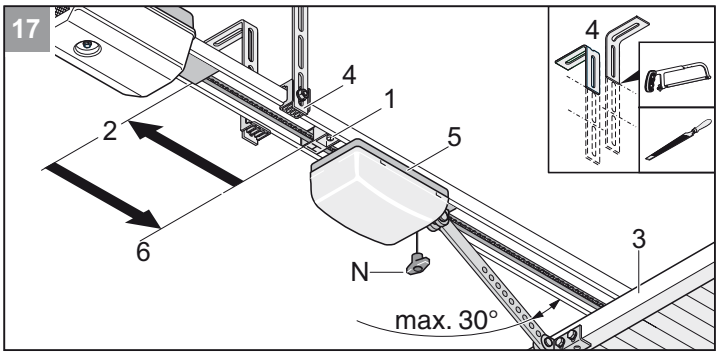
• Align angle of door fitting (5) with centre of door (VM) and mark 5 drill holes. Drill 5 holes (Ø 5 mm).

Use screws that are appropriate to the door material.
Wear safety goggles when drilling!

• Insert 5 hexagon-head screws (6) and tighten securely.

• Release cut-off buffer (4) and push right up to bogie unit (7).

• Tighten cut-off buffer screw (4) securely.



Trim (e.g. saw off and debur) projecting part of ceiling bracket (4).

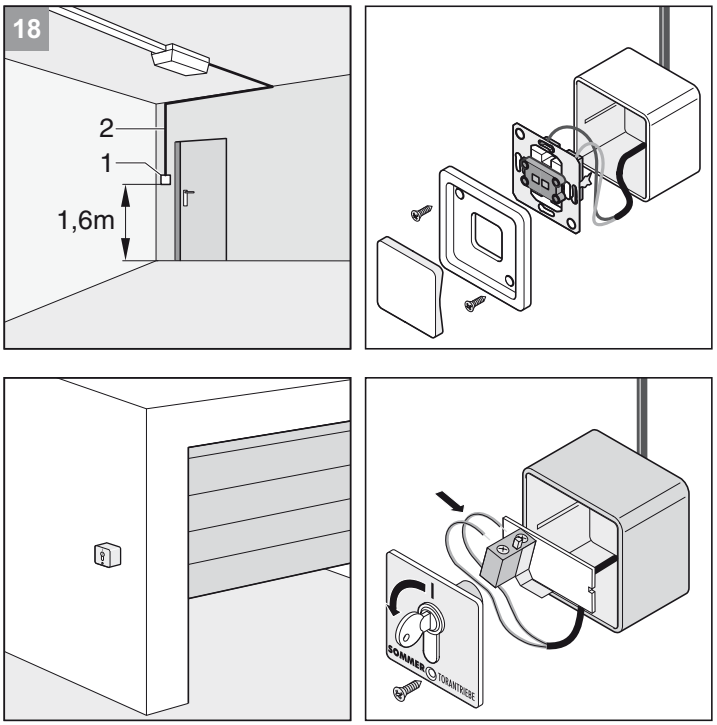
17 • Release rear cut-off buffer (1) and push right back to stop (2). Open door (3) by hand.

• Push cut-off buffer (1) right up to bogie unit (5). Securely tighten screw on cut-off buffer (1).

Fitting and connecting push-button

Position the push-button in such a way that the operator can see the door, while he/she is not inside the operating area of the door.

- Never run button cable (length 7 m) along a power cable as this can cause the control unit to malfunction. The control unit is shipped with the button cable connected.
- Lay button cable and secure in position.



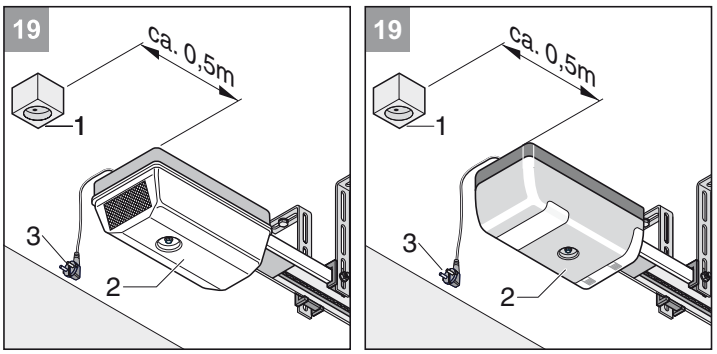
18 • Install push-button (1) in an appropriate, easily accessible location inside the garage. Minimum height from floor - 1.6 m.

• Install push-button cable (2) in garage. Connect end of cable to push-button (1).

Installing the socket outlet

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

Observe all applicable regulations (e.g. VDE, etc.)!



19 • Install socket (1) on ceiling at a distance of approx. 0.5 meters to the control unit housing (2).

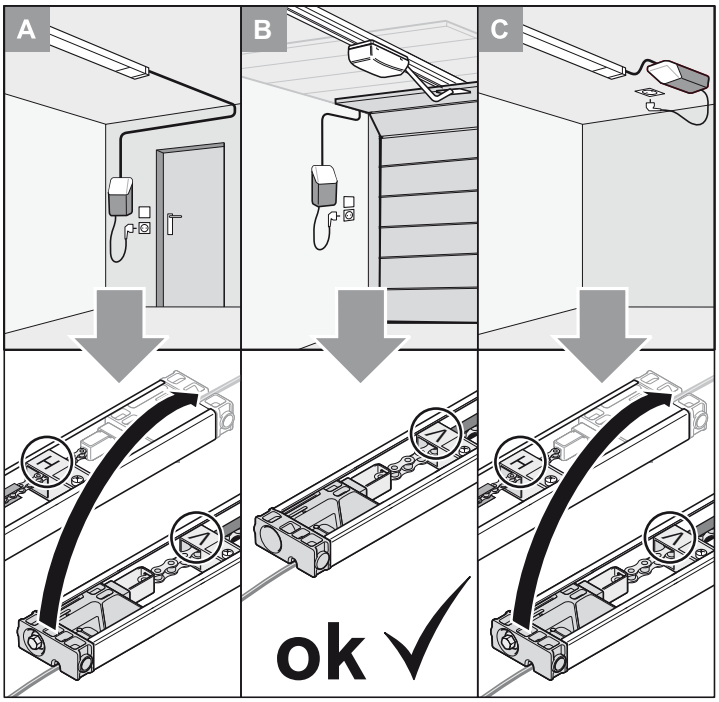
• Install and connect the line from the power socket (1) to the power mains.
Do not plug the connector (3) into the socket outlet yet!

Installation duo

Selection of installation option

Select the desired installation option. For option (B), change the position of power supply unit.

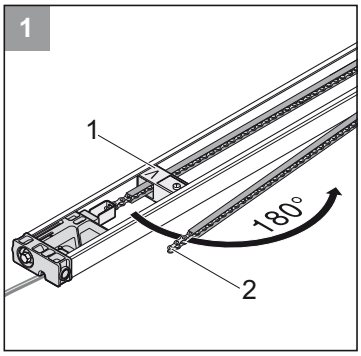
Caution for sprint and duo!
The plastic chain case is not packaging - do not remove!



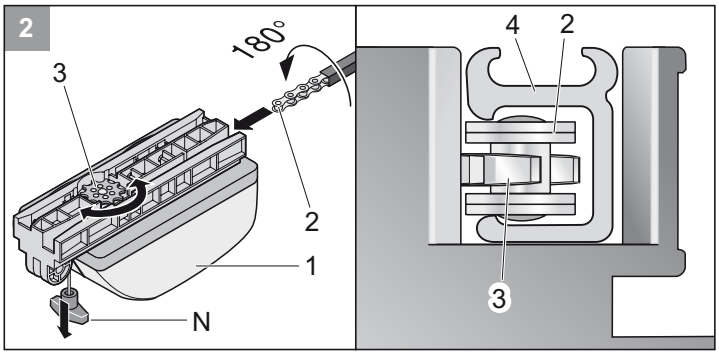
Pre-assembly for installation options A/C

Dispose of packaging material according to the applicable statutory regulations.

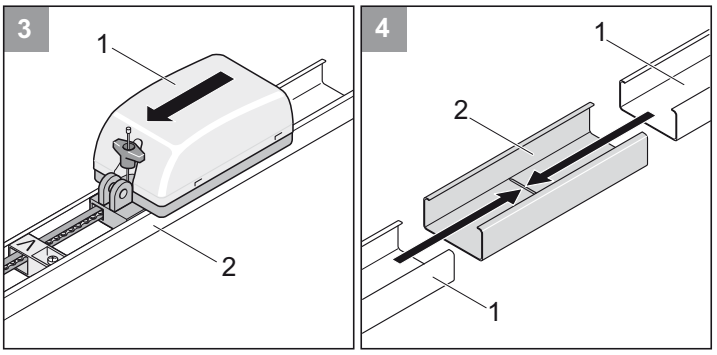
- Remove the operator from its packaging.



1 • Release the switch trigger (1) and move it in the direction of the arrow. Open the chain case (2).

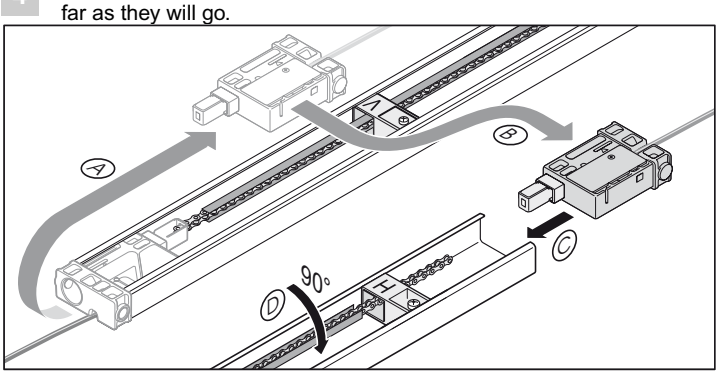


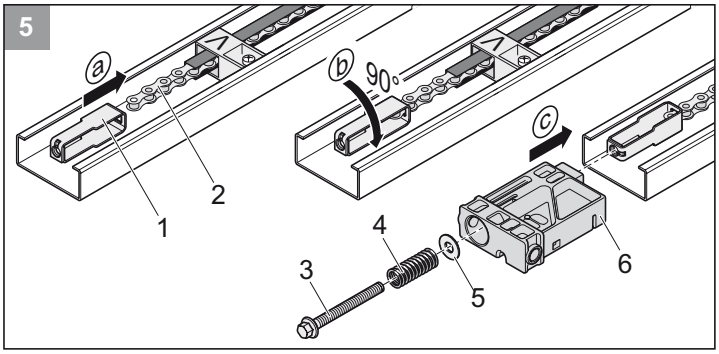
2 • Slide the trolley (1) onto the chain (2) with the chain case (4). The chain (2) engages in the chain wheel (3). If the chain wheel (3) does not turn, pull the emergency release (N) once. The chain wheel (3) is released.



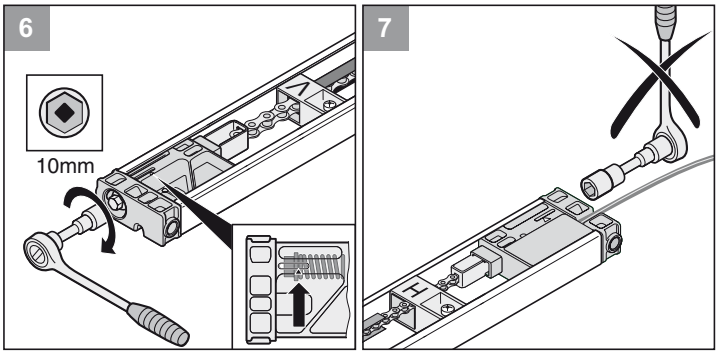
3 • Push bogie truck (1) onto C-rail (2).

4 • Slot two C-rails (1) into connecting element (2) and push together as far as they will go.



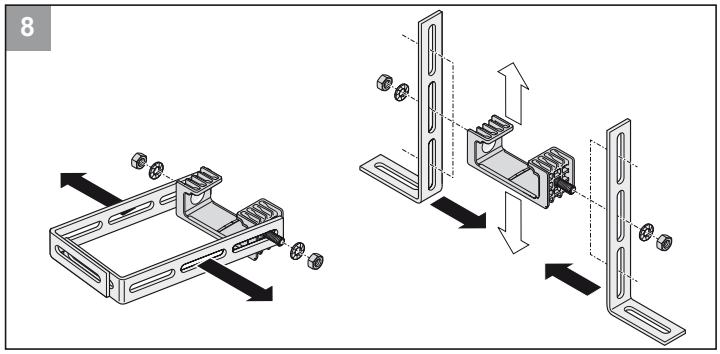


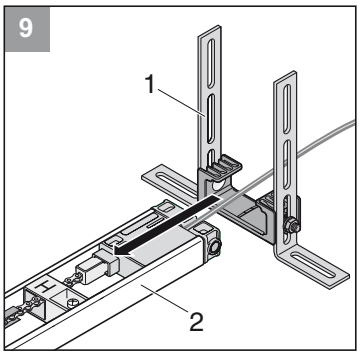
5 • Hook tensioner (1) in chain (2) and turn it 90°. Insert connecting element (6) and push tensioner (1) through it. Place plain washer (5) and spring (4) onto the tensioning bolt (3) and screw it into the tensioner (1).

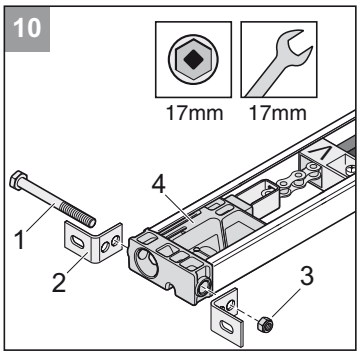


6 • Tighten chain until the mark (arrow) is reached.

7 • Do not tighten on this side, as the unit is supplied pre-tensioned.







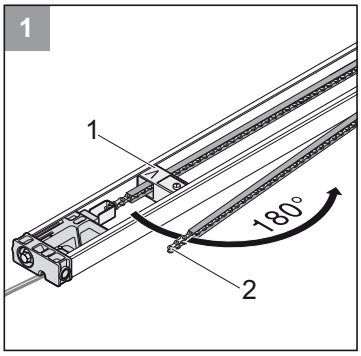
9 • Push ceiling suspension fitting (1) onto C-rail (2).

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

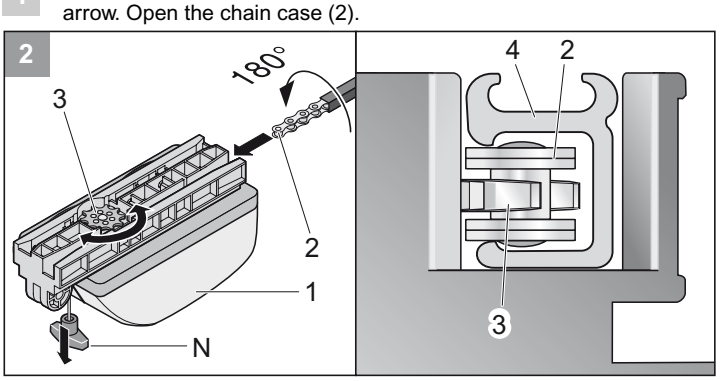
Pre-assembly for installation option B

Dispose of the packaging correctly in accordance with local requirements.

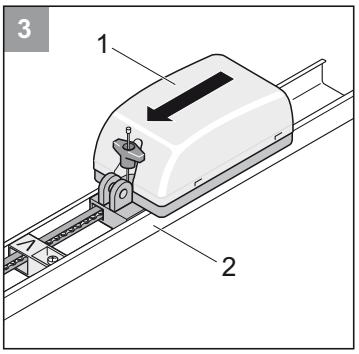
• Remove drive system from packaging.

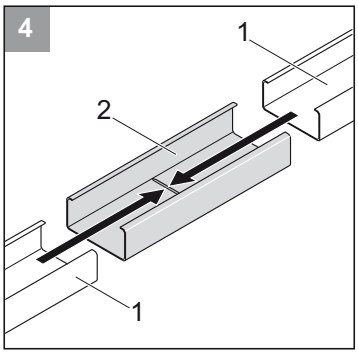


1 • Release the switch trigger (1) and move it in the direction of the arrow. Open the chain case (2).



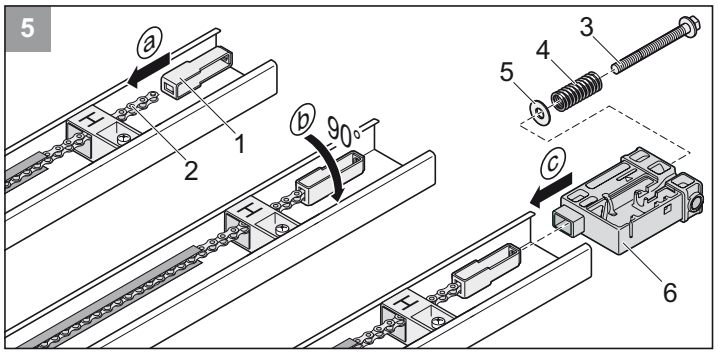
2 • Slide the trolley (1) onto the chain (2) with the chain case (4). The chain (2) engages in the chain wheel (3). If the chain wheel (3) does not turn, pull the emergency release (N) once. The chain wheel (3) is released.



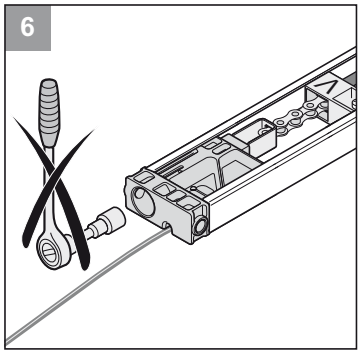


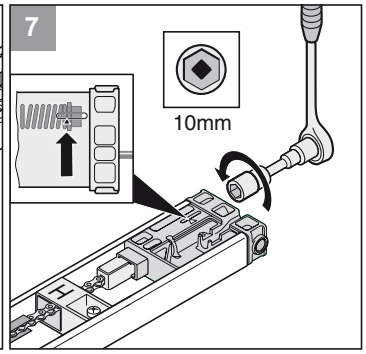
3 • Push trolley (1) onto C-rail (2).

4 • Slot two C-rails (1) into connecting element (2) and push together as far as they will go.



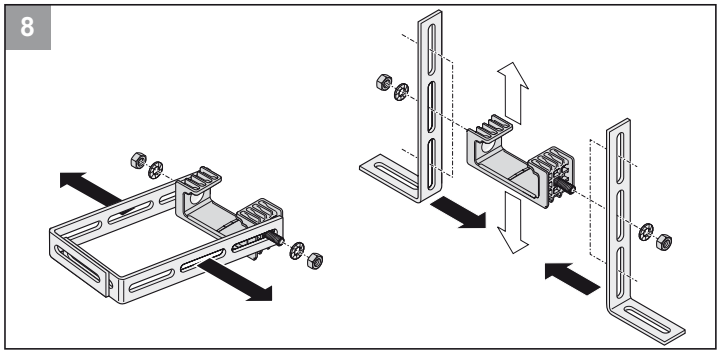
5 • Hook tensioner (1) in chain (2) and turn it 90°. Insert connecting element (6) and push tensioner (1) through it. Place plain washer (5) and spring (4) onto the tensioning bolt (3) and screw it into the tensioner (1).

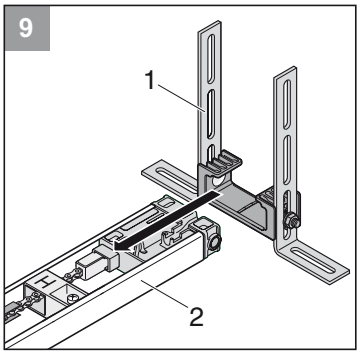


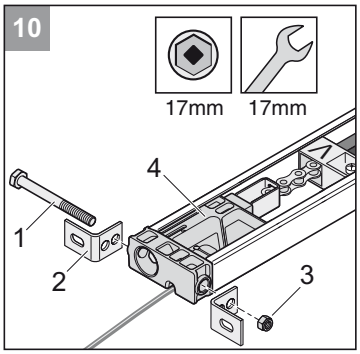


6 • Do not tighten on this side, as the unit is supplied pre-tensioned.

7 • Tighten chain until the mark (arrow) is reached.





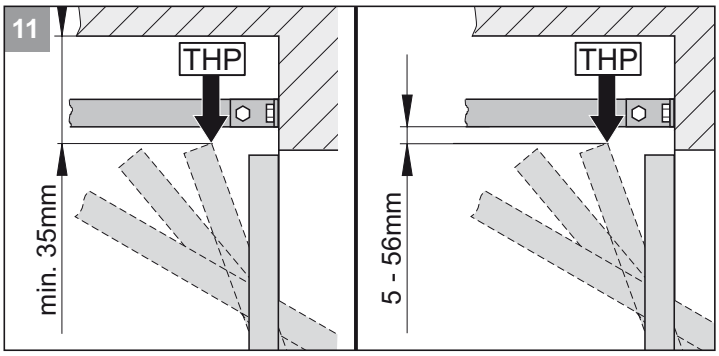


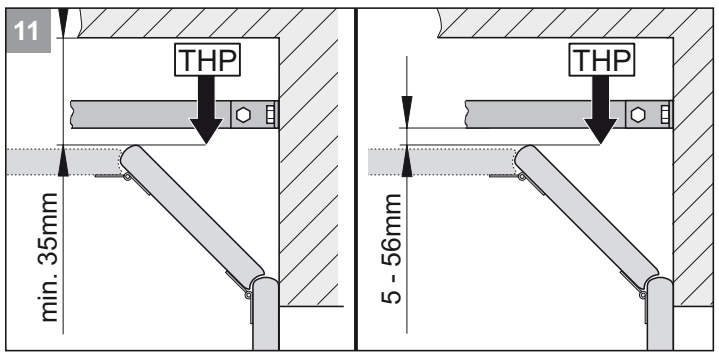
9 • Push ceiling suspension fitting (1) onto C-rail (2).

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

Installation (example: option B)

⚠ **Use a non-slip, stable stepladder!**

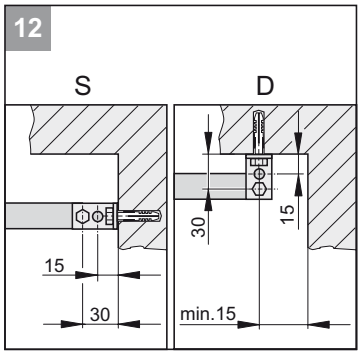


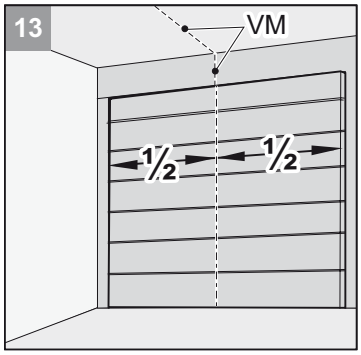


If the distance between the ceiling and the lower edge of the C-rail is greater than 245 mm, then extend the suspension bracket (with perforated steel strip).

11 • Determine door's highest up-position (THP):
Open door and measure smallest clearance (min. 35 mm) between top edge of door and ceiling. The distance between HDP and the lower edge of the C-rail must be between minimum 5 mm and maximum 65 mm, whereby the push rod must be at an angle of max. 30° (see fig. 17)!

Please note that this distance might be smaller, if the door handle is located at the centre of the door. Ensure that the door can move freely.

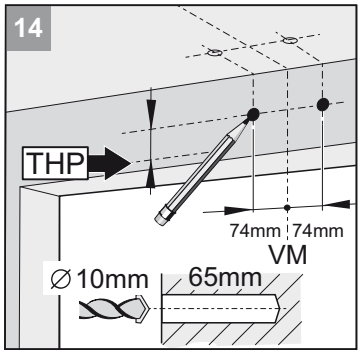


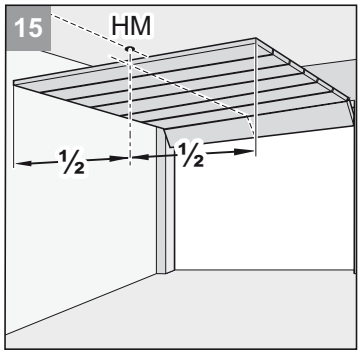


For installation on the ceiling (D), drill holes at distances of 15 mm, if possible. Smaller angle of inclination of the fixing brackets.

12 • The drive mechanism can be mounted on lintel (S) or ceiling (D).

13 • Determine the front centre point (VM) of the door and mark it on the door and on the lintel or ceiling.



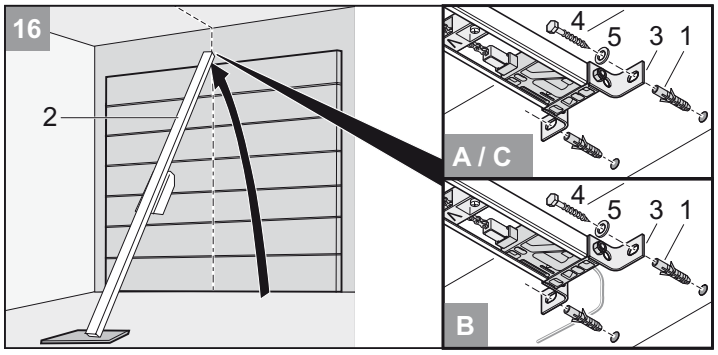


14 • Mark points 74 mm to right and left of the centre of door (VM), and at same height on lintel or ceiling (see Fig. 11).

• Drill two holes (Ø 10 x 65 mm).

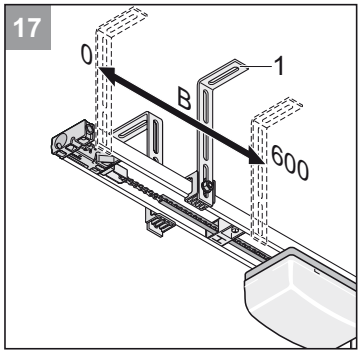
Wear safety goggles when drilling!
Check thickness of ceiling, particularly in prefabricated garages!

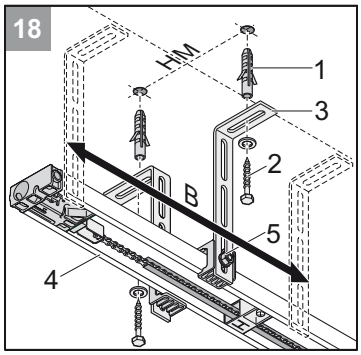
15 • Transfer door centre mark (HM) to ceiling. Close door.



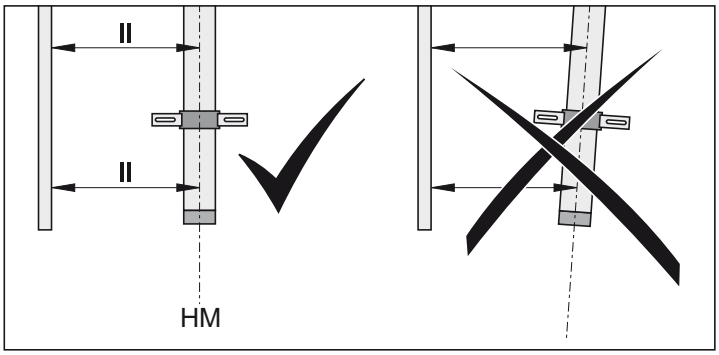
16 • Insert plug (1). Lift up operator (2) at front. Secure lintel fitting (3) at the front with two screws (4) and plain washers (5).

• Lift up drive (2).





Caution!
Mount the drive in parallel to the runner rails of the door.



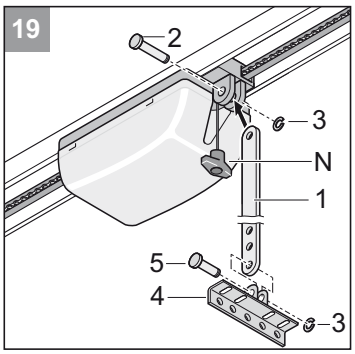
17 • Align ceiling bracket (1). It should be located within a range of B = 0 ... 600 mm.

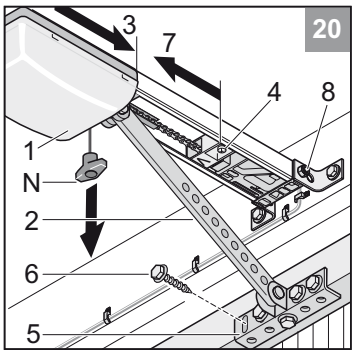
• Align drive mechanism horizontally to rear centre of door (HM). Mark position of holes. Drill two holes (Ø 10 x 65 mm deep).

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

18 • 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).





19 • Mount drive shaft (1):
Insert the long bolt (2) and slide on the securing clip (3).

• Attach the door hinge (4) to the connecting rod (1) using the short bolt (5) and slide on the securing clip (3).

20 • Pull once on emergency release wire (N), thus disengaging bogie unit (1). Tighten screw (8) on lintel fitting.

• Use drive shaft (2) to push bogie unit (1) as far forward as possible (3). If necessary, release cut-off buffer (4).

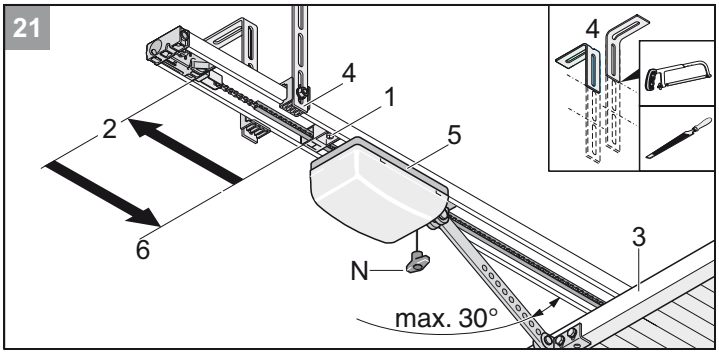
• Align angle of door fitting (5) with centre of door (VM) and mark 5 drill holes. Drill 5 holes (Ø 5 mm).

Use screws that are appropriate to the door material.
Wear safety goggles when drilling!

• Insert 5 hexagon-head screws (6) and tighten securely.

• Release cut-off buffer (4) and push right up to bogie unit (7).

• Tighten cut-off buffer screw (4) securely.



21 • Release rear cut-off buffer (1) and push right back to stop (2). Open door (3) by hand.

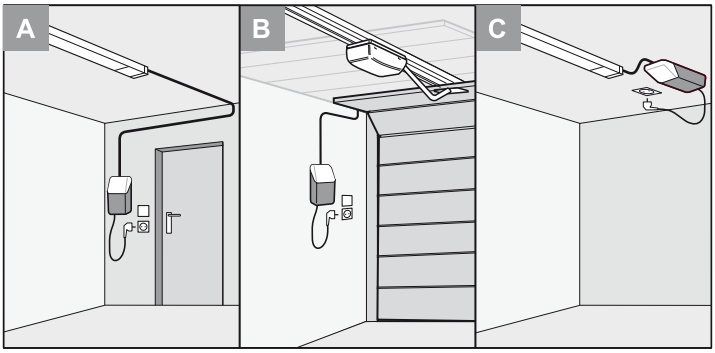
Trim (e.g. saw off and debur) projecting part of ceiling bracket (4).

• Push cut-off buffer (1) right up to end stop (6) against bogie unit (5), until it clicks. Securely tighten screw on switch-trigger (1).

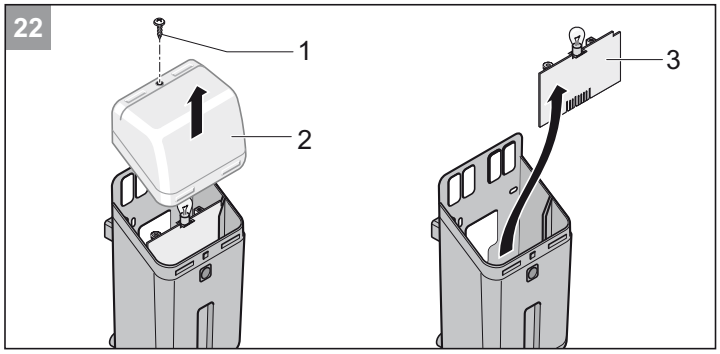
Installing and connecting the control unit

Selection of the installation option

Position the push-button in such a way that the operator can see the door, while he/she is not inside the operating area of the door.



Install cable in such a way that it is possible to expand the power supply in option A (if the cable is at right angles to the C-rail, install it with a loop).

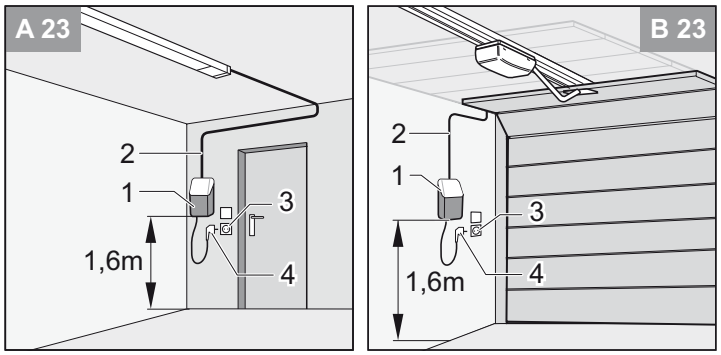


Touch the control unit (3) only at its edge!
Do not touch the electronic components!

22 • Loosen the screw (1) and remove the lamp hood (2). Dismantle the control unit (3).

Installation duo

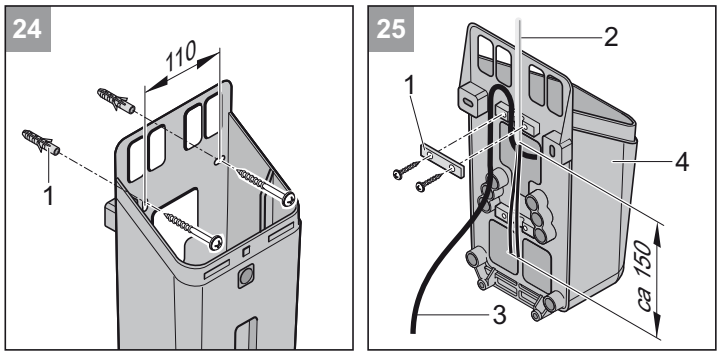
Installation option A/B



23 • Choose a suitable location for the installation of the control housing (1), preferably near a power socket (3).
Minimum height from the floor: 1,6 m.

⚠ **Please note when selecting location of control unit housing (1) that the maximum length of the control cable (2) is 6900 mm and no longer!**

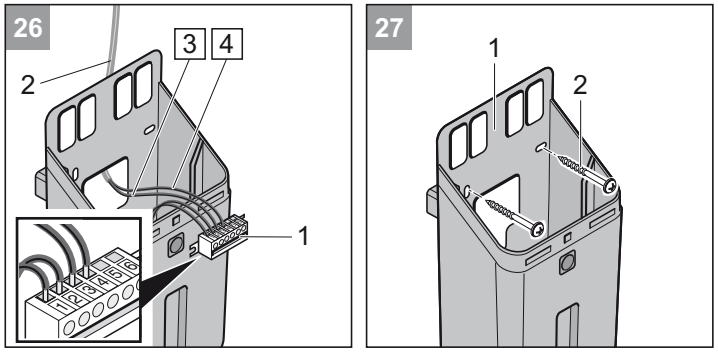
• Install the control line (24 V) (2) to the control housing (1) in the garage. **Do not yet plug in the power plug (4)!**



24 • Mark fixing points horizontally 110 mm apart on the wall. Drill two holes (Ø 10 x 65 mm). Insert wall plug (1) into the holes in the wall.

⚠ **Be careful not to drill into the socket outlet feeder and do not plug the mains plug in yet!**

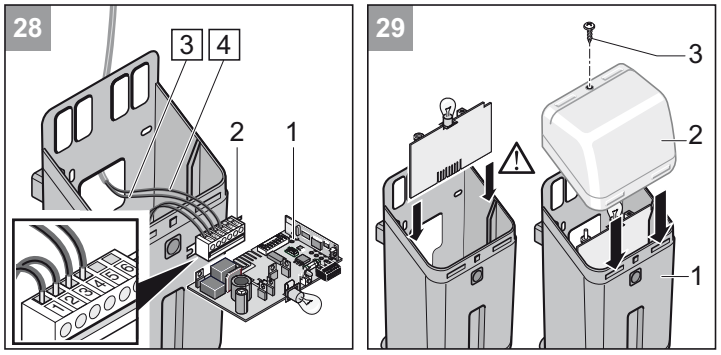
25 • Loosen the strain-relief (1) device at the rear of the control unit. Insert the end of the control cable (2) into the rear of the control unit (1). Use the strain-relief (1) device to protect the power cable (3) and control cable (2).



26 • Connect the control cable (2): connect the core marked 3 (green) to terminal 3 and the core marked 4 (red) to terminal 4 of direct socket unit (1). Shorten the control cable (2) if necessary.

ⓘ **In the case of swing doors, connect wire marked 3 (green) to terminal 4 of the direct socket unit (2) and the one marked 4 (red) to terminal 3.**

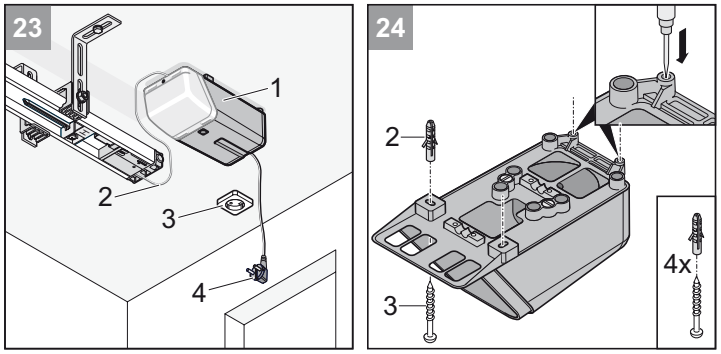
27 • Secure the control housing (1) to the wall, using the two screws (2). Align the control housing (1) and secure it with screws.



28 • Slot the control board (1) into terminal bar (2) and slide it into the housing.

29 • Mount the lamp hood (2) and tighten the screw (3).

Installation option C



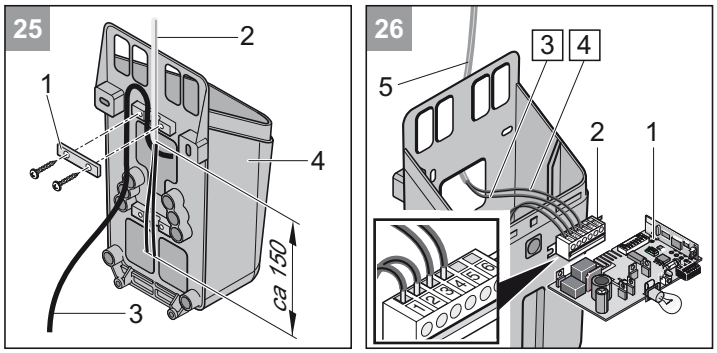
23 • Choose a suitable location for the installation of the control housing (1), preferably near a power socket (3).

⚠ **Please note when selecting location of control unit housing (1) that the maximum length of the control cable (2) is 6900 mm and no longer!**

• Install the control line (24 V) (2) to the control housing (1) in the garage. **Do not yet plug in the power plug (4)!**

24 • Drill 4 holes (Ø 6 x 40 mm deep). Place plugs (2) in holes. Included in delivery. Supplied components 2 plugs, 2 screws.

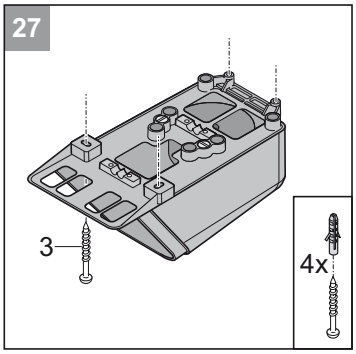
⚠ **Be careful not to drill into the socket outlet feeder and do not plug the mains plug in yet!**

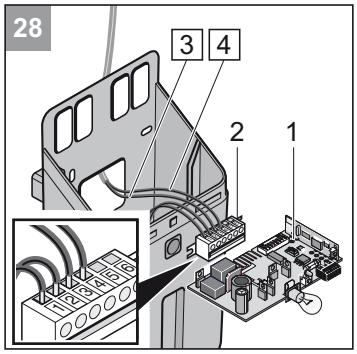


25 • Loosen the strain-relief (1) device at the rear of the control unit. Insert the end of the control cable (2) into the rear of the control unit (1). Use the strain-relief (1) device to protect the power cable (3) and control cable (2).

26 • Connect the control cable (5): connect the core marked 3 (green) to terminal 3 and the core marked 4 (red) to terminal 4 of direct socket unit (2). Shorten the control cable (5) if necessary.

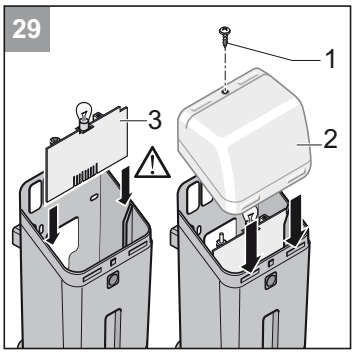
ⓘ **In the case of swing doors, connect wire marked 3 (green) to terminal 4 of the direct socket unit (2) and the one marked 4 (red) to terminal 3.**





27 • Position, align and the secure control housing using 4 screws (1). Supplied components 2 plugs, 2 screws.

28 • Slot the control board (1) into terminal bar (2) and slide it into the housing.



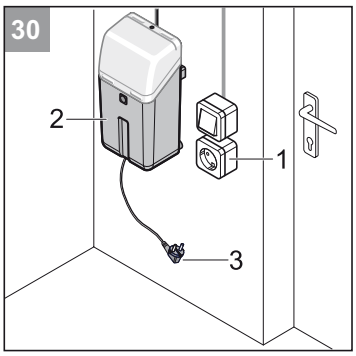
⚠ **Touch the control unit (3) only at its edge! Do not touch the electronic components!**

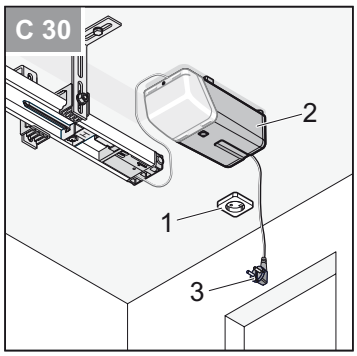
29 • Install the control unit (3). Mount the lamp hood (2) and tighten the screws (1).

Installing the socket Outlet

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

⚠ **Observe all applicable regulations (e.g. VDE, etc.)!**





30 • Install socket (1) on ceiling at a distance of approx. 0.5 meters to the control unit housing (2).

• Install and connect the connection cable from the socket outlet (1) to the mains power supply. **Do not plug the connector into the socket outlet yet!**

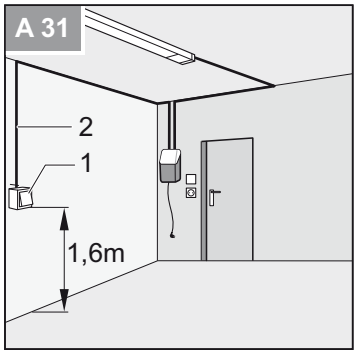
Installing and connecting and additional push-button

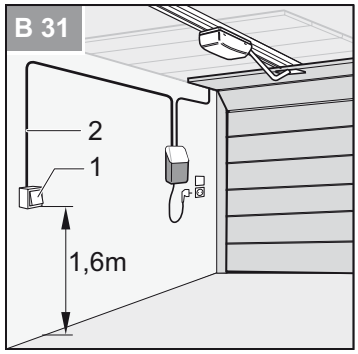
ⓘ **Only necessary if a further push-button is required in addition to the one already installed (1).**

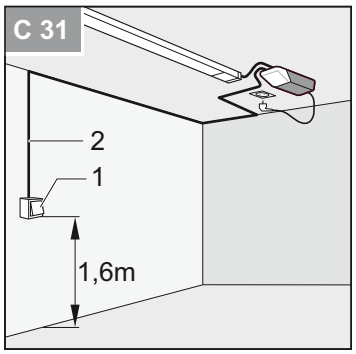
⚠ **Use the contact only for potential-free normally closed contacts. External voltage may damage or even destroy the control unit.**

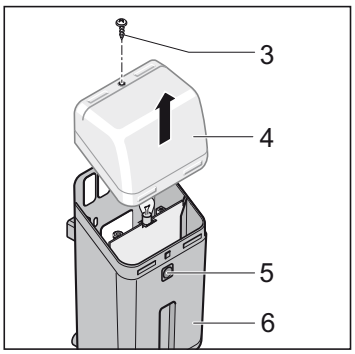
⚠ **Position the push-button in such a way that the operator can see the door, while he/she is not inside the operating area of the door.**

• Never run the push-button cable along a power cable as this can cause the control unit to malfunction.







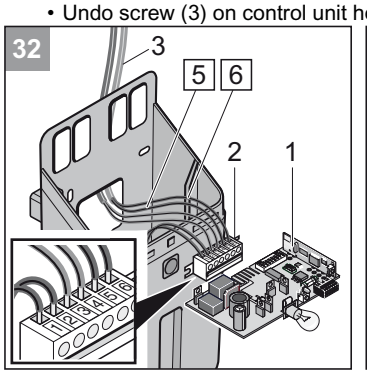


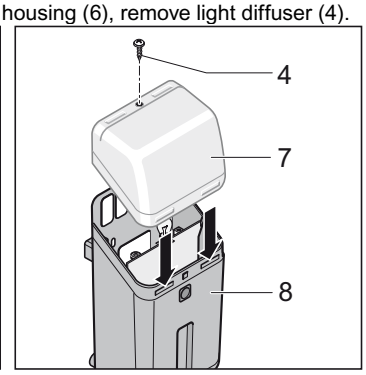
31 • Install push-button (1) in an appropriate, easily accessible location in the garage. Minimum height from the floor: 1,6 m

• Install button cable (2) in garage. Connect end of cable to push-button (1).

⚠ **Only hold outside edge of control board (1)! Do not touch the electronic components!**

• Undo screw (3) on control unit housing (6), remove light diffuser (4).





ⓘ **Connect the key switches (potential-free NO contact), if any, to the terminals 5 + 6.**

32 • Lift the control board (1) from the housing (8) and disconnect it from the terminal bar (2).

• Connect the push-button cable (3) to terminals 5 + 6 of the terminal bar (2).

• Slot the control board (1) into terminal bar (2) and slide it into the housing (8).

• Mount the lamp hood (7) and tighten the screw (4).

Installation duo

Commissioning

Safety Instructions

Once the drive has been installed, the person responsible for installation has to issue an EU Conformity Declaration for the door system in accordance with Machine Directive 98/37/EG as well as fitting the CE seal and the rating plate.
This also applies to doors installed for private purposes and in cases where the drive has been retrofitted to a manual door.
These Instructions as well as the drive's Installation and Operating Instructions should be kept by the user for reference purposes.

The force setting is relevant to the system's safety and must therefore be carried out with due care and attention. An excessively high force setting can injure people and/or animals and damage property.
Select as low a force setting as possible to ensure that obstacles are identified in a fast, safe manner.

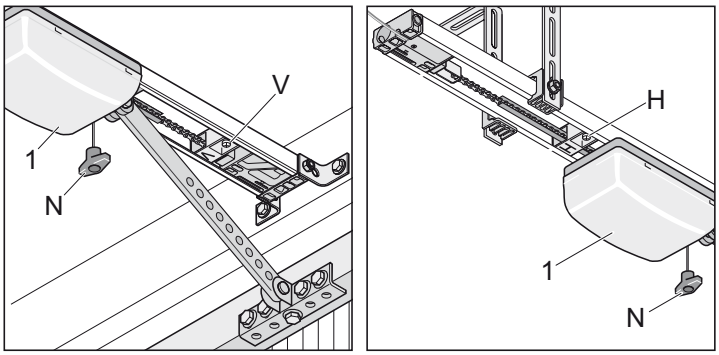
Risk of sudden closing or opening!
When the emergency release is actuated, the door might suddenly be opened or closed, due to a damaged spring or incorrect balance weight. This might damage or even destroy the drive unit.

Setting door OPEN + CLOSED final travel positions

While adjusting the settings, open and close the gate manually. Do not operate it with the engaged drive system.

The distance over which the drive mechanism moves the door can be increased/reduced by using the cut-out buffer (V + H).

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



Door CLOSED final travel position

- Release the trolley. Pull the emergency release rope (N) once. It must be possible to slide the trolley back and forth by hand.
- Close the door by hand.
- Release the switch trigger (V) and slide it towards the trolley until it triggers the limit switch. Secure the switch trigger (V) with screws in this position.

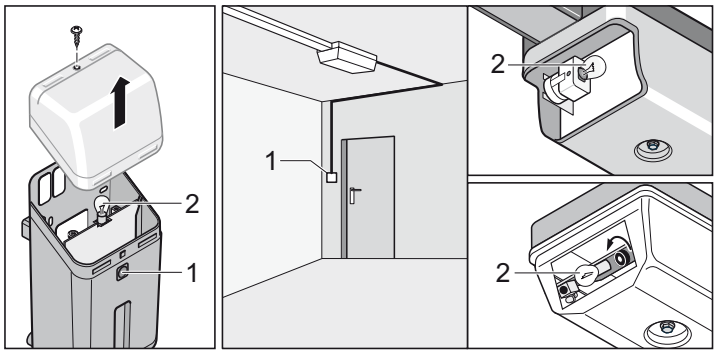
Door OPEN final travel position

- Open the door by hand.
- Release the switch trigger (H) and slide it towards the trolley until it triggers the limit switch. Secure the switch trigger (H) with screws in this position.
- Close the door by hand.
- Lock the trolley (1):
  Pull the emergency release rope (N) once. Move the trolley by hand a little bit forward until the chain wheel engages with a loud clicking sound.

Teaching in drive

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 in power plug



The first movement of the drive after the power is connection must be “door OPEN”. If this is not the case, exchange the wires to terminals 3+ 4 (sprint/duo) or terminals 12 + 13 (marathon).

- Press the push-button (1). The door is opened to limit position "door OPEN".
- Close gate, press button (1).

Reset the control unit

- Carry out control reset in accordance with the procedure for the given drive type. See 'Operation / Handling' section.

Carry out following procedure twice:

- Press push-button (1) once
  Door opens as far as cut-off buffer (H)
- Lamp (2) starts to flash
- Press push-button (1) once
  Door closes as far as cut-off buffer (V)
- Lamp (2) starts to flash

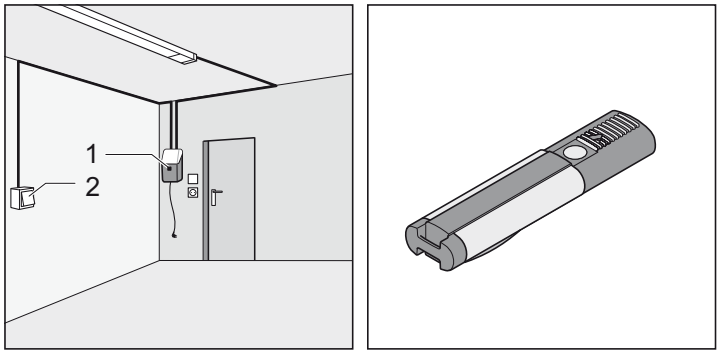
When all force values are read and saved, the lamp (2) ceases flashing.

The operator has been 'taught' successfully!

Checking the limit positions for door OPEN + CLOSED

The trolley of the drive system can be extended or shortened by means of the switch triggers.

Check whether the door is opening and closing properly. If this is not the case, adjust the trolley.



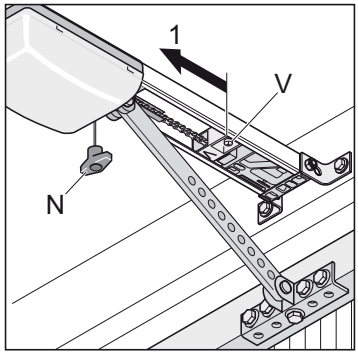
- Actuate the control device (e.g. push-button, remote control device, etc.) once.
  The door is opened.

If it fails to reach the desired limit positions for door OPEN + CLOSED, readjust the limit positions. For detailed instructions, see chapter “Adjusting door OPEN + CLOSED settings”.

Commissioning

Checking emergency release

With sectional doors, or doors with ceiling guides, you have the option of activating the backjump with DIP switch 6 in order to offload the operator and door mechanisms.



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

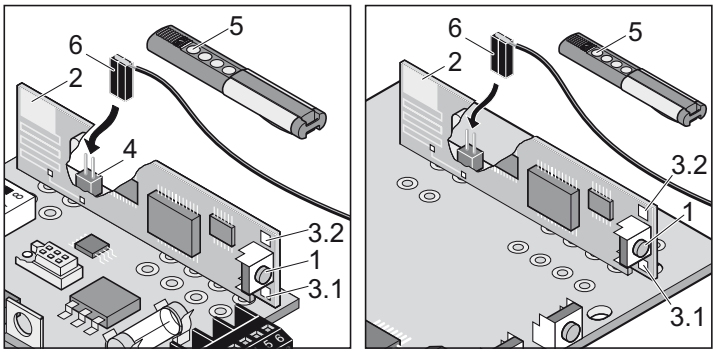
Checking force setting

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 given final travel position is reached.

For checking details see 'Maintenance and Care' section.

Programming of remote control

Prior to the initial programming of the hand-held transmitters, clear the memory of the radio receiver.



Clearing radio receiver memory

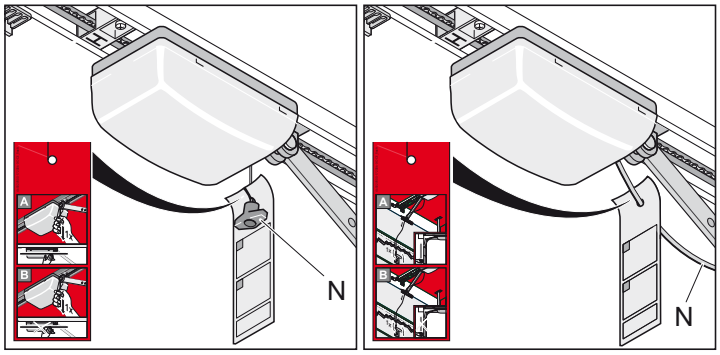
- Press and hold the programming key (1).
  - After 5 seconds, the LED (3.1 or 3.2) flashes. After another 10 seconds, the LED is constantly on (3.1 or 3.2).
  - After 25 seconds, all LEDs are on (3.1 + 3.2).
- Release the programming key (1). All channel data has been deleted.

Programming the radio transmitter

- Press the programming key (1)
  - 1x for channel 1; LED (3.1) is on
  - 2x for channel 2, LED (3.2) is on
- If no other code signal is transmitted within 10 seconds, the radio receiver switches to standard operation.
- Aborting programming: repeatedly press the programming key (1) until all LEDs are off.
- Press and hold desired hand-held transmitter key (5) until the LED (3.1 / 3.2) is off (depending on the selected channel).
- The LED is off - the programming process is completed.
  The hand-held transmitter has transmitted the radio codes to the radio receiver.

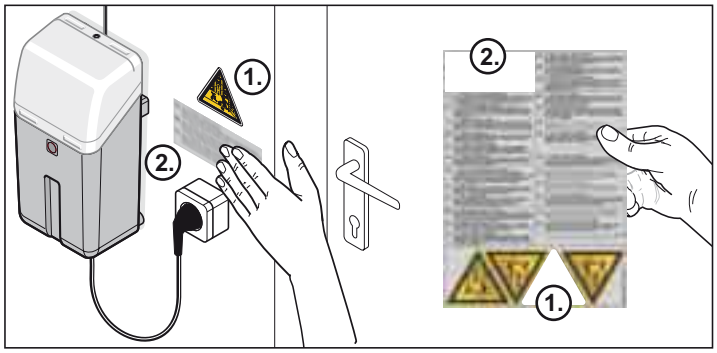
Continue with programming the other hand-held transmitters. To do this, repeat the above steps. The maximum number of memory blocks is 112 per radio receiver.

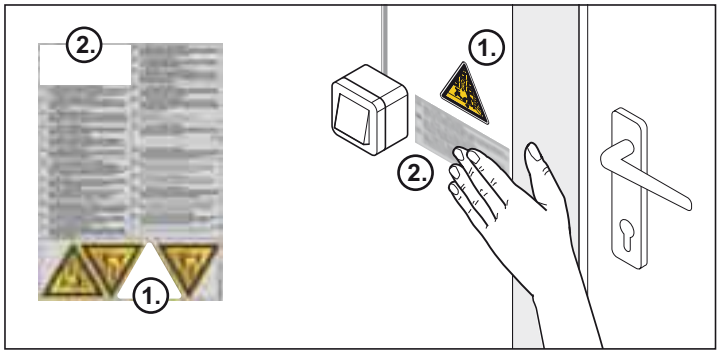
Attaching instruction label



- Attach the instruction label for the operation of the emergency release to the emergency release rope.

Attaching warning sign





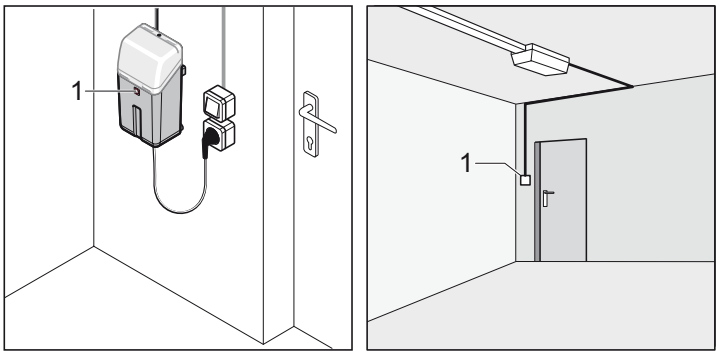
- Attach the warning signs (text + triangle sign) at a position where they are clearly visible, e.g. beside the push-button (warning triangle) and on the door leaf (text + warning triangle).

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.
- Risk of persons trapping or cutting themselves in/on the door system's moving parts or edges where it closes.

Opening door

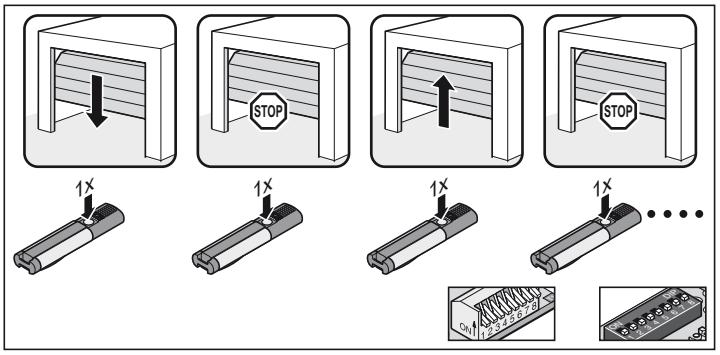


- Press button (1) or manually-operated remote control once.
- The door stops moving if this button is pressed again while the door is opening. Dependent on DIP switch 7 setting.
- If the button is pressed again the door closes.

Closing door

- Press button (1) or manually-operated remote control once.
- The door stops moving if this button is pressed again while the door is closing. Dependent on DIP switch 7 setting.
- If this button is pressed again the door opens.

Pulse sequence of door movement



Adjust the pulse sequence with DIP switch 7.

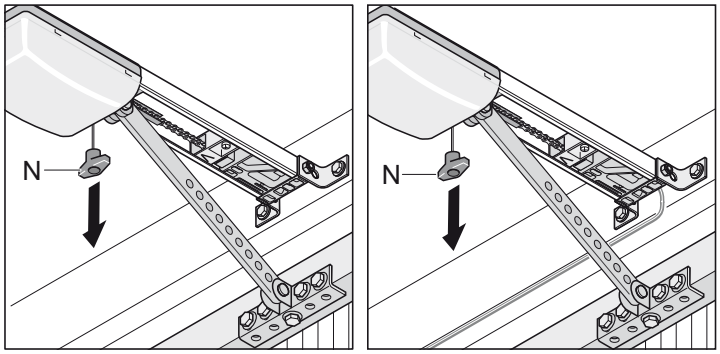
- **DIP 7 OFF, default settings for all drives:**
  open - stop - close - stop - open - …
- **DIP 7 ON:**
  Button 1: open - stop - open - stop - …
  Button 2: close - stop - close - stop - …

Emergency release

Caution!
The emergency release may only be used in the event of an emergency (power failure, failure of drive, etc.) to open or close the door. Do not use it to open and close the door in other situations, as this could damage the door or the drive mechanism.

Risk of damage! When operating the emergency release, it is possible that the door may open or close automatically due to the spring breaking or the weight balance being set incorrectly. Drive can suffer damage or be destroyed.

Engaging or disengaging the drive can occur in any door position.



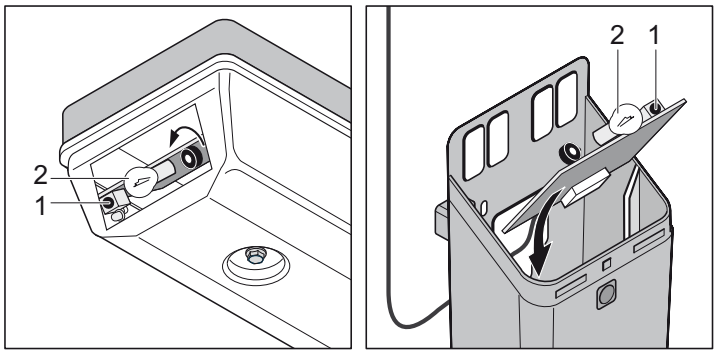
- Pull once on emergency release wire (N): the drive mechanism disengages and the door can be opened manually.
- Pull on emergency release cord (N) once again: drive locks into position; door can only be moved with the drive.
- Door is fitted with a wicket door but no safety mechanism for the wicket door - retro-fit wicket-door safety mechanism (see 'Accessories' instructions).
- Door has no wicket door and garage no second entrance - install release lock or Bowden wire providing outside release access (see 'Accessories' instructions).

Control reset

DIP switch 4 ON, light bulb (2) is on after a control reset.
DIP switch 4 OFF, light bulb (2) flashes after a control reset.

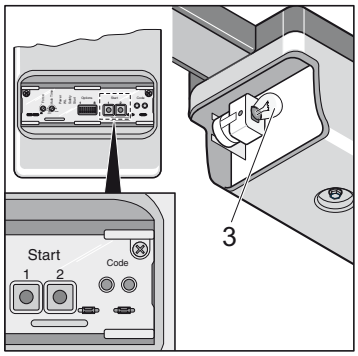
After a control reset, the drive must be programmed again.

sprint/duo SL



- Press button (1) until such time as lamp (2) goes out.
- When lamp goes out, force settings have been deleted and button (1) can be released.
- Light bulb (2) flashes - control reset successful.

marathon SL



- Press buttons (1 + 2) until such time as lamp (3) goes out.
- When lamp goes out, force settings have been deleted and buttons (1+ 2) can be released.
- Light bulb (2) flashes - control reset successful.

Operation and Handling

Interim stop

If an interim stop occurs due to the operation of a push-button or the manual remote control, the drive unit stops immediately. The next command given sends the drive in the opposite direction. See 'Pulse Sequence of Door Movement' section.

Safety stop 1 (automatic force cut-off)

When the automatic force cut-off is activated, the drive stops or reverses. When the next command is given, the drive moves in the opposite direction. See 'Pulse Sequence of Door Movement' section.

- Safety stop when door closes - door reverses
- Safety stop when door opens - door stops.

Safety stop 2 (automatic force cut-off)

When the safety input is tripped (e.g. someone crosses light barrier), the drive stops, reverses or opens, depending on the given DIP switch setting:

- DIP switch 1 + 3

See 'Obstacle Recognition' section for given drive type.

When the next command is given, the drive moves in the opposite direction. See 'Pulse Sequence of Door Movement' section.

Default settings:

- safety input tripped when door closes: door reverses
- safety input tripped when door opens: no response (door opens).

Overload protection

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

The drive mechanism can now recommence normal operation.

Operation following a power failure

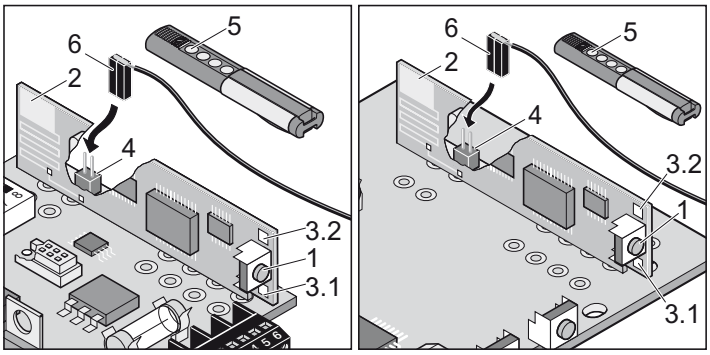
The force values remain saved even during a power failure. The first movement of the unit following a power cut is always door OPEN.

Radio remote control receiver

Homelink compatible!
If your vehicle is equipped with a Homelink system (version 7), you can reach our drive/radio receiver at 868.6 MHz. With holder Homelink systems, you must use a different frequency (40.685 or 434.42 MHz). For more information, please visit: "http://www.eurohomelink.com"

- To ensure safe operation, local safety regulations relevant to the equipment concerned must be observed! Information regarding this can be obtained from electricity suppliers, the VDE and employers' liability insurance associations.
- 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 push-buttons



1 Setting button
Puts radio receiver in a given operating mode: self-learn, delete and normal

2 Internal aerial

3 LED
Display which channel has been selected.
3.1 LED channel 1
3.2 LED channel 2

4 Connection for external aerial (6)
If the radio range of the internal aerial is not sufficient, you have the option to connect an external aerial.

5 Manual remote control button

6 External aerial

Teaching in manual remote control

- Press setting 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.
- Interrupting setting mode: press setting button (1) as often as required to put out all LEDs
- Press and hold desired hand-held transmitter key until the LED (3.1 / 3.2) is off - depending on the selected channel.
- The LED is off - the programming process is completed.
  The hand-held transmitter has transmitted the radio code to the radio receiver.

Teaching in further manual remote controls. Repeat above steps.
Max. 112 memory slots are available per radio receiver.

Deleting manual remote control button from radio receiver

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

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

- Press setting button (1) and keep depressed for 5 seconds until an LED starts to flash (any LED).
- Release setting button (1) - radio receiver is in delete mode.
- Press push-button on the manual remote control, the one whose code is required to be deleted on the radio receiver - LED goes out - deletion process complete.

Repeat procedure for all push-buttons and combination of buttons.

Deleting a channel from the radio receiver

- Press setting button (1) and keep pressed
- press 1x for channel 1; LED (3.1) lights up
- press 2x for channel 2; LED (3.2) lights up
- The LED that lights up depends on which channel has been selected. After 5 seconds, the LED starts to flash and then remains lit after a further 10 seconds.
- Release setting button (1) - deletion process complete

Deleting the radio receiver’s memory

If a manual remote control is lost, then for security reasons all channels on the receiver have to be deleted! After this has been done, all the manual remote controls have to be re-set into the receiver.

- Press and hold the programming key (1).
  - After 5 seconds, the LED (3.1 or 3.2) flashes. After another 10 seconds, the LED is constantly on (3.1 or 3.2).
  - After 25 seconds, all LEDs are on (3.1 + 3.2).
- Release the programming key (1) - all channel data has been deleted.

Connecting an external aerial

- An external aerial can be fitted if the possible range with the radio receiver's internal aerial is insufficient.
- The aerial cable must not exert any mechanical load on the radio receiver. Fit strain relief.
  - Connect external aerial (6) to terminal (4).

What is push-button 2 used for?

Defined opening and closing (2-channel operation)

Should this function be used, a 2nd push-button can be connected. For settings see 'Additional Functions' section. This enables the door to be opened using one push-button, and closed using another.

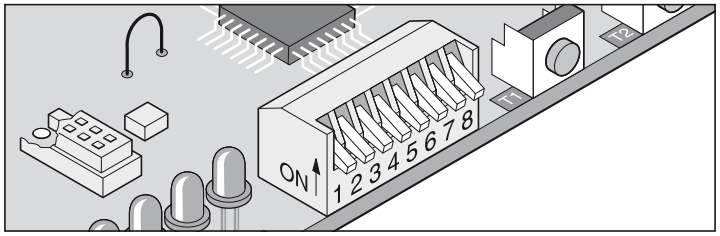
Functions and Connections marathon

General tips

DIP switch

- Depending on the position (OFF or ON) of a DIP switch, a number of additional functions can be activated or deactivated.
  By default, all DIP switches are -> OFF.

Obstacle recognition (DIP 1, 2 + 3)



Drive behaviour upon opening the door

If the door meets an obstacle (force cut-off) or if the safety input is interrupted (person triggering the light barrier), this is detected by the drive system, depending on the position of the DIP switch 1.

DIP switch 1

OFF No response in the event of a safety input interruption.
In the event of a force cut-off, the door is halted

ON Drive stops door
(no response at 8.2 kOhm or Fraba system)

Drive behaviour upon closing the door

If the door meets an obstacle (force cut-off) or if the safety input is interrupted (person triggering the light barrier), this is detected by the drive system, depending on the position of the DIP switches 2 + 3.

DIP switch 2: function - safety connection 1, terminals 6 + 7

OFF NC contact for light barrier / 8.2 kOhm safety contact unit

ON Fraba system

DIP switch 3

OFF Drive stops and opens door a little (reversal).

ON Drive stops and opens door completely.

Safety connection function 1 (DIP 2)

When in position OFF, the drive system automatically detects whether a light barrier or a 8.2 kOhm bar is connected.

DIP switch 2 (terminal 6 + 7)

OFF Light barrier / 8.2 kOhm safety contact unit

ON Fraba system

Early warning period (DIP 5)

After the button or hand-held transmitter is actuated, the warning light is on for 3 seconds, before the drive is started and when the drive opens or closes the door. If the push-button is pressed again or the manual remote control is operated during the 3 seconds, the early warning period is ended prematurely.

The early warning period functions in conjunction with both internal lighting and with a connected warning lamp.

DIP switch 5

OFF Deactivated

ON Activated

Backjump (DIP 6)

In vertical-sectional doors, you have the option of activating the backjump with DIP switch 6 in order to offload the operator system and the door. It also facilitates the activation of the emergency release.

This feature serves the purpose of supporting door and drive mechanism operation. The drive mechanism moves briefly back in a door OPEN direction once it has reached the door CLOSED final travel position, thus taking some of the strain off the other equipment.

DIP switch 6

OFF Deactivated

ON Activated

Defined opening and closing (DIP 7)

Push-button/radio channel 1 open the door and push-button/radio channel close it. 2-channel operation can also occur using just two push-buttons or just the manual remote control.

Requirement: DIP switch 8 is OFF; 2 push-buttons are connected or 2 manual remote control push-buttons have been taught in.

DIP switch 7

OFF Deactivated

ON Activated

Partial opening (DIP 8)

This function opens the door either completely or partially, depending on the given setting.

Ideas for use: garage ventilation, opening of side-opening door for personal access, to name but a few. Partial opening can also occur using just two push-buttons or just the manual remote control.

DIP switch 8

OFF Deactivated

ON Activated; DIP switch 7 not functioning

Partial opening using 2 push-buttons

Fit additional push-button and connect as push-button 2 to terminals 4 + 5.

Push-button 1 always opens door fully.
If the door has been partially opened by pressing push-button 2, it can be fully opened by pressing push-button 1.

Push-button 2 only carries out partial opening when the door is CLOSED. Should the door have been fully opened using push-button 1 or partially opened with push-button 2, it can be closed by again pressing push-button 2.

Procedure:

1. Close door.
2. Set DIP switch 8 to ON, thus activating partial opening functionality
   - always leave DIP switch 8 in ON position; the OFF position automatically deletes the partial opening function that has been set.
3. Press push-button 2 (opens door from CLOSED final travel position)
   - door opens until such time as push-button 2 is pressed again or OPEN final travel position has been reached.
4. Press push-button 2 when the desired position has been reached.
5. Close door by pressing push-button 2.

Partial opening has been memorised and door is opened to set position by pressing push-button 2.

Set DIP switch 8 to OFF position to delete partial opening setting.

Partial opening via manual remote control

(2-channel operation)

Teaching in 2 manual remote control push-buttons:
e.g. push-button 1 on to radio channel 1 and push-button 2 on to channel 2.

Radio channel I always has the same function as push-button 1;
terminals 2 + 3

Radio channel 2 always has the same function as push-button 2;
terminals 4 + 5.

Procedure as described above.

Automatic close mode (DIP 4)

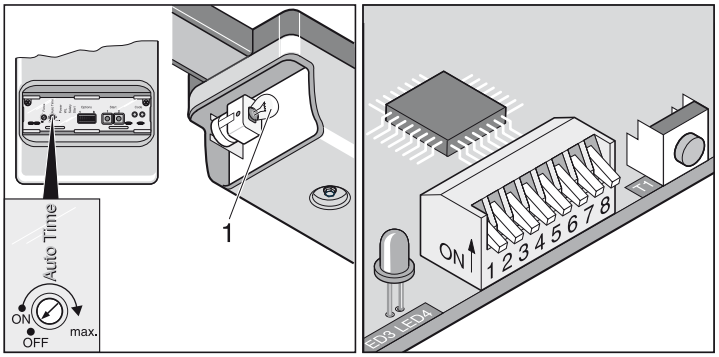
Observe standard EN 12453 (e.g. fit light barrier 1) for automatic close mode. An additional light barrier can be connected to safety connection 2 as upper safety limit.

Caution !
Connect the small door fuse to the safety input 2 (terminals 8 + 9). If the small door fuse is connected to the trolley, the drive is unable to detect the position of the door.

Door closes automatically after door open period set on potentiometer has elapsed. The door can only be opened by means of a command issued via a push-button or manual remote control. When the door is opening, no command issued can stop it from doing so.

When it is closing automatically and a further command is issued, the door opens fully. Any command issued during the door open period, restarts the given set period.

In automatic close mode, the partial opening function is deactivated.



Activating and deactivating door open period with potentiometer:
- **period can be set from 1 to 120 seconds**
- **deactivate by turning potentiometer as far anticlockwise as possible.**

Behaviour of drive when safety inputs 1 + 2 are tripped
When door is closing:
Drive always opens door fully, irrespective of DIP switch 3 setting

When door is opening:
Behaviour of door in accordance with DIP switch 1 setting.

Two-way traffic system with lights

Disconnect the internal lighting and do not reconnect.

Both red lights show the same behaviour when the door is in motion.

- Outside red light: terminals 16 + 17, installed outside the garage
- Inside red light: terminals 18 +19, installed inside the garage

Automatic close mode, option 1

The automatic CLOSE mode is automatically activated when the door reaches the OPEN final travel position. The period set via the potentiometer starts running from this moment onwards. A command given during the door OPEN period restarts the given set period.

Settings:

- Potentiometer set to required time (1 - 120 seconds)
- DIP switches 7 + 8 OFF
- Other DIP switches set as required

Automatic close mode + light barrier, option 2

Interrupt automatic closing manually by installing switch in the light barrier's supply cable.

As described above, apart from the fact that the drive mechanism closes the door 5 seconds after the light barrier has been crossed.

Settings:

- Potentiometer set to required time (1 - 120 seconds)
- DIP switches 1, 7 + 8 OFF
- DIP switch 4 ON
- Other DIP switches set as required

Automatic close mode + safety contact strip (8,2 kOhm / Fraba) + light barrier, option 3

Interrupt automatic closing manually by installing switch in the light barrier's supply cable.

As described above, apart from the fact that the drive mechanism closes the door 5 seconds after the light barrier has been crossed.

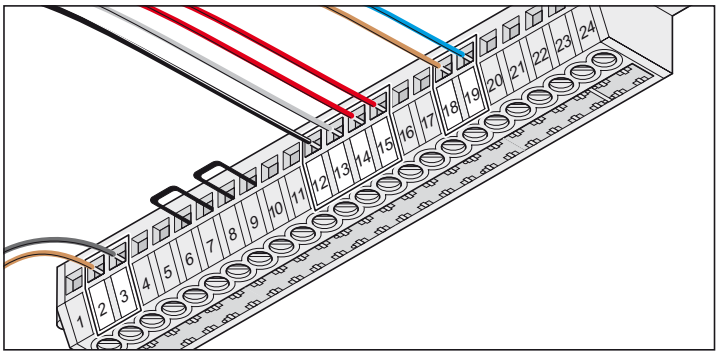
Connect the light barrier in series to the safety contact strip to terminals 6 + 7.

Settings:

- Potentiometer set to required time (1 - 120 seconds)
- DIP switches 1, 7 + 8 OFF
- DIP switch 2, 4 ON
- Other DIP switches set as required

Terminal bar, 24-pole

- Permissible cable cross-section: max. 1,5 mm².

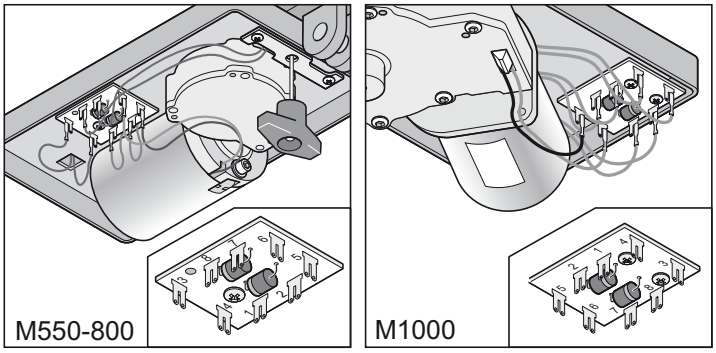


Terminal		
	1	Antenna connection 40 MHz
	2 + 3	Push-button 1 (potential-free NO contact) *
	4 + 5	Push-button 2 (potential-free NO contact)
	6 + 7	Safety input 1 (bridge) *
	8 + 9	Safety input 2 (bridge) *
	10 + 11	Regulated 24 V DC, max. 0.1 A
	12 + 13	Chain (12) + C-rail (13) *
	14 + 15	Transformer, secondary *
	16 + 17	Warning light 1, unregulated 24 V/DC
	18 + 19	Internal light/warning light 2, unregulated 24 V/DC *
	20 + 21	Regulated 12 V/DC
	22	free
	23 + 24	Potential-free relay output 230 V AC, max. 5 A

* Factory settings

Functions and Connections marathon

Trolley board

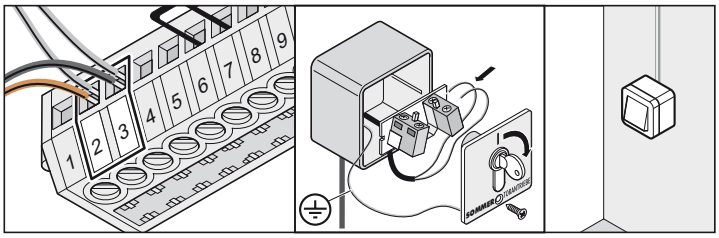


Terminal	1	Power supply to chain
	2	Power supply to rail
	3 + 4	End switch gate OPEN
	5	Motor cable
	6	Motor cable
	7 + 8	End switch gate CLOSED

Connecting push-button 1

⚠ **Use the contact only for potential-free normally closed contacts. External voltage may damage or even destroy the control unit.**

Factory settings: The push-button cable is connected to push-button 1.

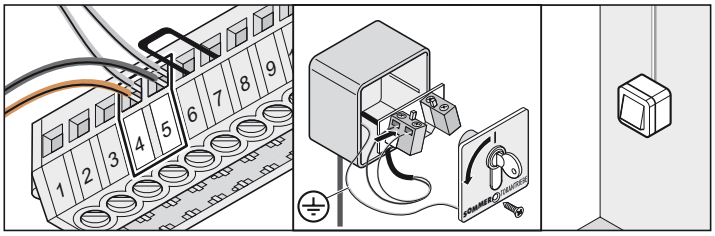


Terminal 2 + 3 Push-button 1 connection

Connecting push-button 2

⚠ **Use the contact only for potential-free normally closed contacts. External voltage may damage or even destroy the control unit.**

Connect push-button 2 if the functions described below are required.

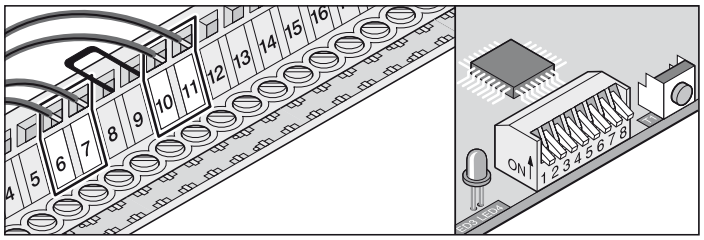


Terminal 4 + 5 Connection push-button 2

Push-button 2 is needed for defined opening and closing or partial opening function.

Connecting light barrier 1

Supplied as standard with jumper.



Terminals 6 + 7 tested connection for floating contacts, **only if DIP switch 2 is OFF**

Terminals 10 + 11 regulated 24 V/DC, max. 0.1 A

Terminal 10: 24 V/DC

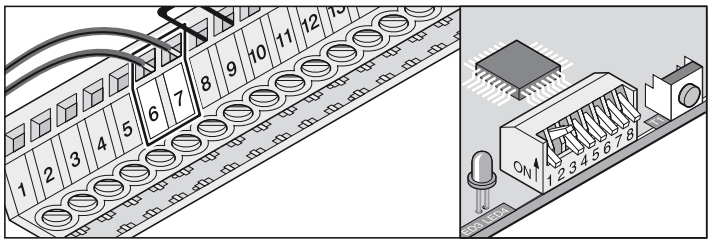
Terminal 11: Earth

Settings: see Obstacle Recognition (DIP 1, 2 + 3)

Connecting the 8.2 kOhm bar

Supplied as standard with jumper.

Analysis 8.2 Kohm; connection without special analyser.



Terminal 6 + 7 Tested connection for a 8.2 Kohm resistance, **DIP switch 2 OFF**

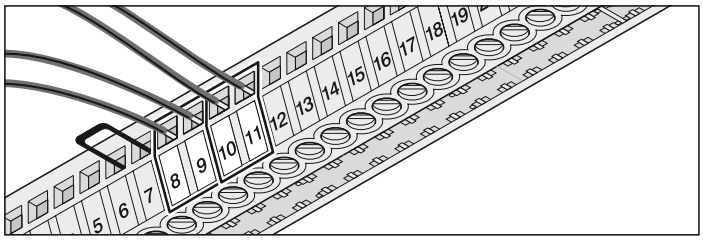
Terminal 6: + (brown)

Terminal 7: Earth (white or blue)

Settings: see Obstacle Recognition (DIP 1, 2 + 3)

Connecting light barrier 2

Supplied as standard with jumper.



Terminal 8 + 9 Tested connection for floating contacts, **only reacts if door is open**

Terminal 10 + 11 regulated 24 V/DC, max. 0.1 A

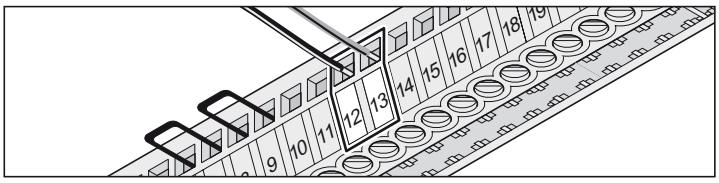
Terminal 10: V/DC 24 V

Terminal 11: Earth

Functions and Connections marathon

Chain and C-rail

Supplied connected as standard.



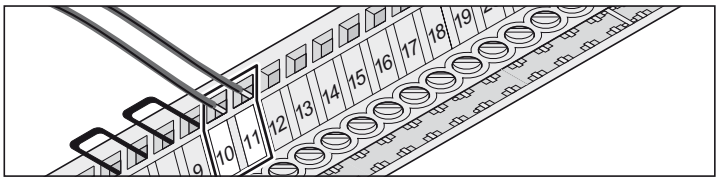
Terminal 12 Chain

Terminal 13 C-rail

Swap connections around if drive is to be used in conjunction with swing doors.

24 Volt connection

Supplied vacant as standard.



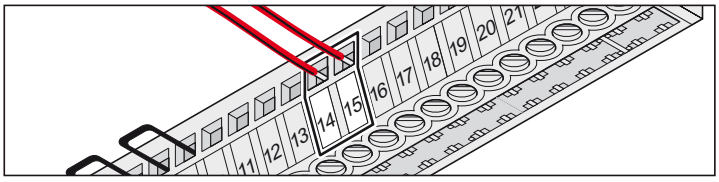
Terminal 10 + 11 regulated 24 V/DC, max. 0.1 A

Terminal 10: V/DC 24 V

Terminal 11: Earth

Transformer

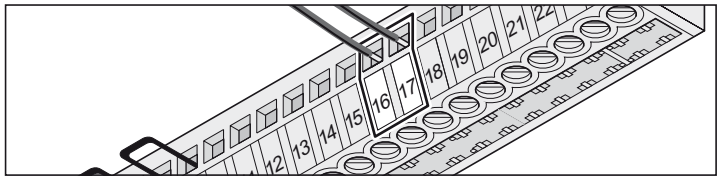
Supplied connected as standard.



Terminal 14 + 15 Transformer, secondary

Connecting warning lamp 1

Supplied vacant as standard.



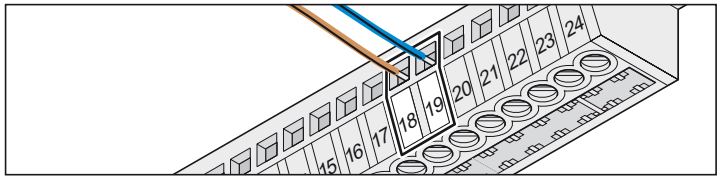
Terminal 16 + 17 Non-regulated 24 V/DC (max. 34 V), 21 watt, max. 1.0 A

Protected with a 1.0 A, quick-acting

Connecting warning lamp 2

Supplied with internal lighting connected as standard.

For the automatic close mode, an external warning lamp can be connected here; disconnect internal lighting.

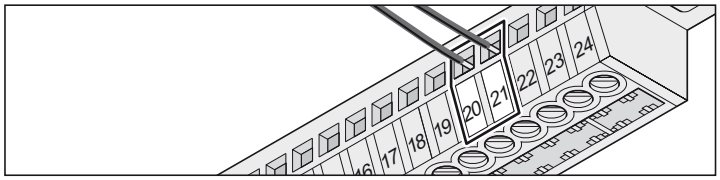


Terminal 18 + 19 Non-regulated 24 V/DC (max. 34 V), 21 watt, max. 1.0 A

Protected with a 1.0 A, quick-acting

12 Volt connection

Supplied vacant as standard.



Terminal 20 + 21 regulated 12 V/DC, max. 0.1 A

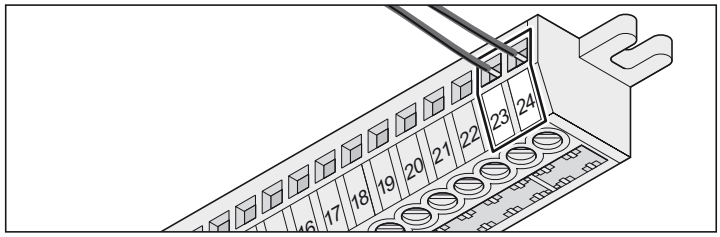
Torminal 20: 12 V/DC

Torminal 21: Earth

Floating relay output

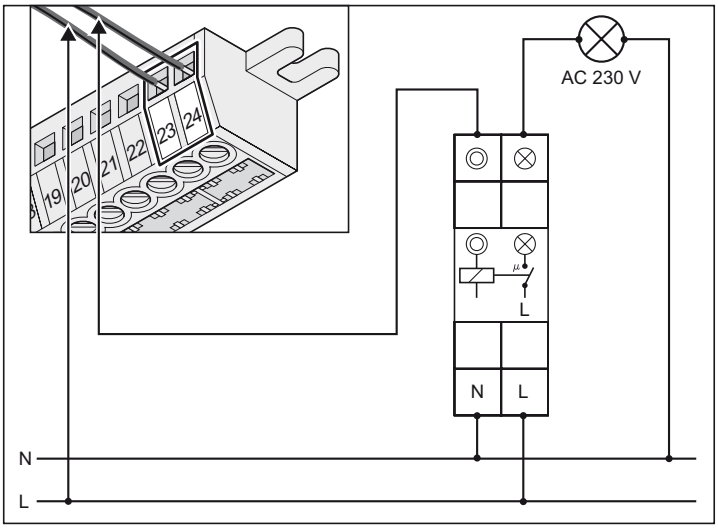
Supplied vacant as standard.

Each time the drive starts up, a pulse is present at the relay output with which, for instance, stairway lighting could be switched on via an automatic switching system.



Terminal 23 + 24 230 V/AC, max. 5A

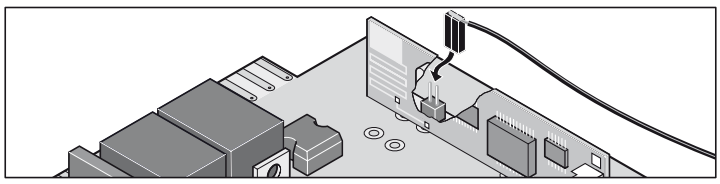
Only use TorMinal to change settings.



Staircase lighting with automatic switching system

Connecting external aerial

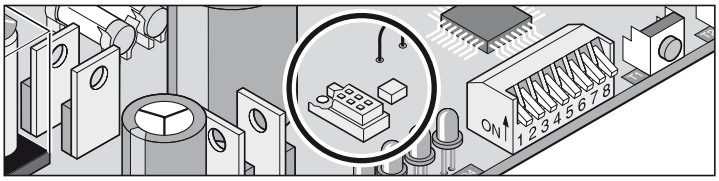
Supplied vacant as standard.



Functions and Connections marathon

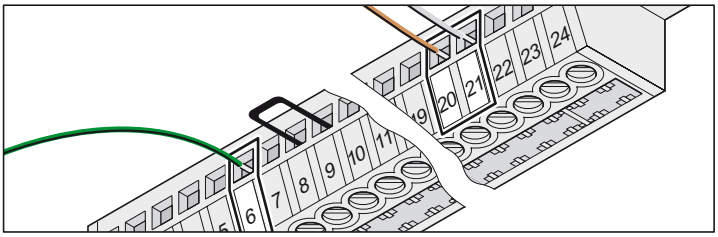
TorMinal interface

See TorMinal Operating Instructions.



Connecting Fraba system

The integrated evaluation of the Fraba system can only be switched on through the TorMinal system.

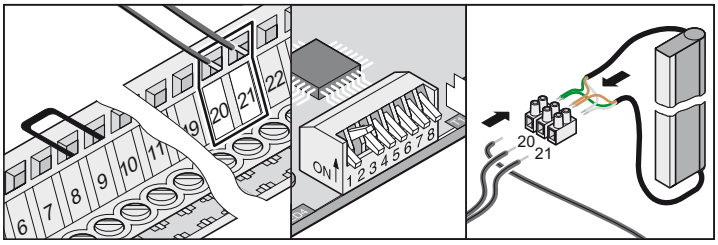


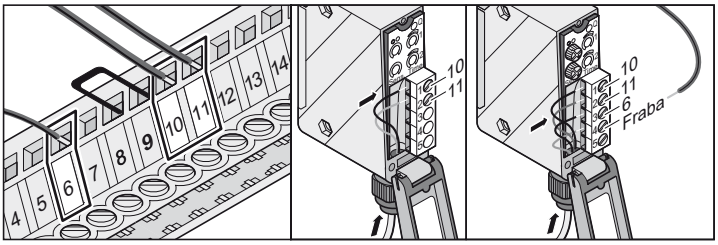
Settings with TorMinal

Memory position (mem)	Setting range	Factory settings
036	0 - 31 (16 Fraba ON)	0 (Fraba OFF)

Terminal	6	Fraba system cable (green) **only if DIP switch 2 is set to ON**
Terminal	20	Fraba system cable (brown)
Terminal	21	Fraba system cable (white)

Option 1: Fraba system + light barrier





Terminal	6	Green cable of Fraba system via the light barrier **only if DIP switch 2 is ON**
Terminal	10 + 11	regulated 24 V/DC, max. 0.1 A 10: 24 V/DC 11: Earth
Terminal	20	Brown cable of Fraba system (12 V/DC)
Terminal	21	White cable of Fraba system (earth)

Settings: see chapter "Obstacle detection".

Special functions

'Dead man' mode

Door status indicator

Maintenance monitoring

Only TorMinal can be used for this and other functions or settings. For details regarding the special functions, please refer to your TorMinal operating manual.

Functions and Connections sprint / duo

General tips

- DIP switch in OFF position as standard when supplied.

Obstacle recognition (DIP 1, 2 + 3)

Drive behaviour upon opening the door

If the door meets an obstacle (force cut-off) or if the safety input is interrupted (person triggering the light barrier), this is detected by the drive system, depending on the position of the DIP switch 1.

DIP switch 1

OFF No response in the event of a safety input interruption.
In the event of a force cut-off, the door is halted.

ON Drive stops door

Drive behaviour upon closing the door

If the door meets an obstacle (force cut-off) or if the safety input is interrupted (person triggering the light barrier), this is detected by the drive system, depending on the position of the DIP switches 2 + 3.

DIP switch 2: Safety contact strip

OFF Normally closed contact for light barrier

ON Push-button connection for push-button
(partial opening mode; defined opening and closing mode)

DIP switch 3: behaviour of drive when door is closing

OFF Drive stops and opens door a little (reversal)

ON Drive stops and opens door completely

Connecting button 2 (DIP 2)

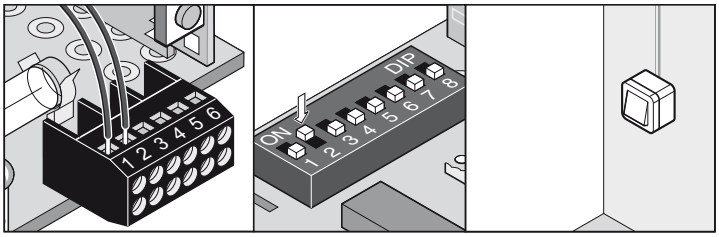
⚠ **Use the contact only for potential-free normally closed contacts. External voltage may damage or even destroy the control unit.**

No further safety connections are available.

Button 2 can be used in conjunction with the following functions:

- Preset opening and closing
- Partial opening

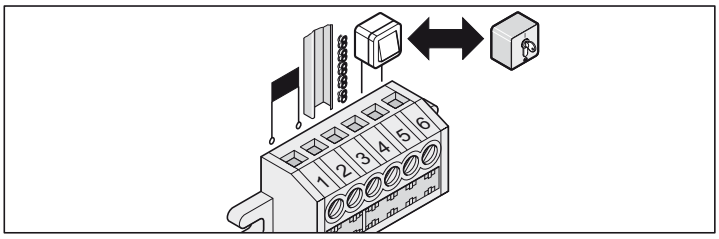
- Permissible cable cross-section: max. 0,75 mm².



Terminal 1 + 2 Push-button 2 connection, **only if DIP switch 2 is ON.**

Direct socket unit

- Permissible cable cross-section: max. 1,5 mm².



Terminal 1 + 2 Transformer

Terminal 3 C-rail

Terminal 4 Chain

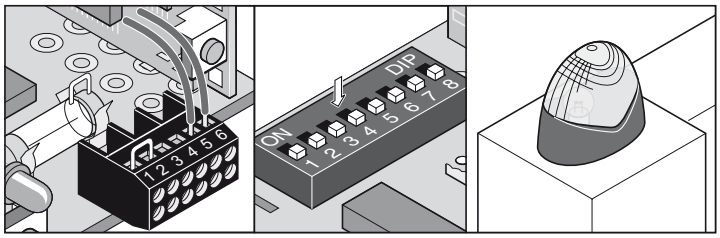
Swap connections (terminals 3 + 4) around if drive is to be used in conjunction with swing doors.

⚠ **Use the contact only for potential-free normally closed contacts. External voltage may damage or even destroy the control unit.**

Terminal 5 + 6 Push-button connection (push-button 1);
vacant in duo's case.
potential-free NO contact

Connecting warning lamp (DIP 4)

- Permissible cable cross-section: max. 1,5 mm².



Terminal 5 + 6 Non-regulated 24 V/DC (max. 34 V),
21 watt, max. 1.0 A

DIP switch 4

OFF Connected warning lamp flashes (control unit generates flashing)

ON Door status indicator
- is lit when door is not closed
- is out when door is closed

Warning time (DIP 5)

The warning lamp starts to flash after push-button is pressed or manual remote control operated during the three seconds before the drive starts up. If the push-button is pressed again or the manual remote control is operated during the 3 seconds, the early warning period is ended prematurely.

The early warning period functions in conjunction with both internal lighting and with a connected warning lamp.

DIP switch 5

OFF Deactivated

ON Activated; internal lighting and warning lamp flash for 3 seconds.

Backjump (DIP 6)

In vertical-sectional doors, you have the option of activating the backjump with DIP switch 6 in order to offload the operator system and the door. It also facilitates the activation of the emergency release.

This feature serves the purpose of supporting door and drive mechanism operation. The drive mechanism moves briefly back in a door OPEN direction once it has reached the door CLOSED final travel position, thus taking some of the strain off the other equipment.

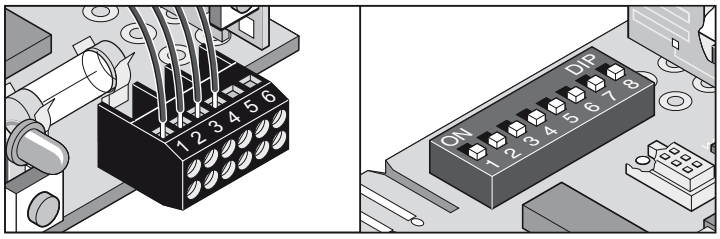
DIP switch 6

OFF Deactivated

ON Activated

Connecting light barrier

- Permissible cable cross-section: max. 0,75 mm².



Terminal 1 + 2 Safety connection, **only if DIP switch 2 is OFF**

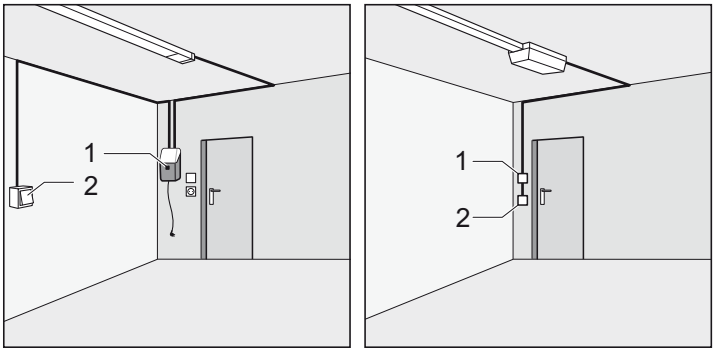
Terminal 3 + 4 regulated 12 V DC, max. 0.1 A
Terminal 3: 24 V/DC
Terminal 4: Earth

Settings: see Obstacle Detection (DIP 1, 2 + 3)

Functions and Connections sprint / duo

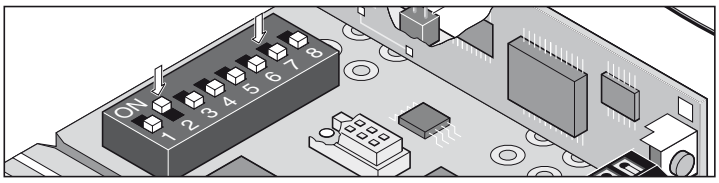
Defined opening and closing (DIP 7)

With this function, the door can only be opened with button 1/ radio channel 1, and can only be closed with button 2/radio channel 2.



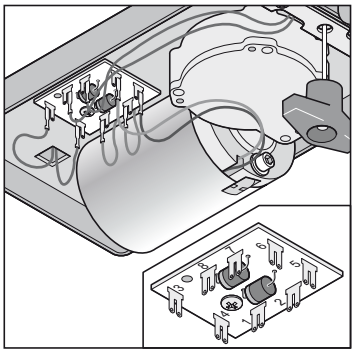
Button 1/radio channel 1: opening door; button 2/radio channel 2: closing door. The function may also be used for operation with 2 buttons or one hand-held transmitter.

Requirement:
DIP switch 8 OFF, 2 buttons connected (DIP switch 2 ON) or 2 hand-held transmitter buttons programmed.



DIP switch 7
OFF Deactivated
ON Activated

Trolley board

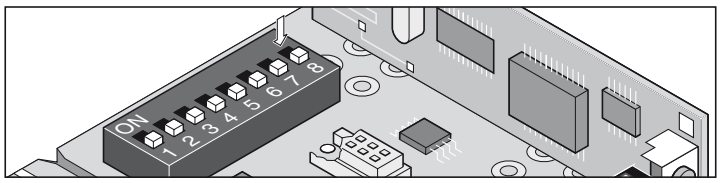


Terminal	1	Power supply to chain
	2	Power supply to rail
	3 + 4	End switch gate OPEN
	5	Motor cable
	6	Motor cable
	7 + 8	End switch gate CLOSED

Partial opening (DIP 8)

This function opens the door either completely or partially, depending on the given setting.

Ideas for use: garage ventilation, opening of side-opening door for personal access, to name but a few. Partial opening can also occur using just two push-buttons or just the manual remote control.



DIP switch 8
OFF Deactivated
ON Activated; DIP switch 7 not functioning

Partial opening using 2 push-buttons

Fit additional push-button and connect as push-button 2 to terminals 1 + 2.

Push-button 1 always opens door fully.
If the door has been partially opened by pressing push-button 2, it can be fully opened by pressing push-button 1.

Push-button 2 only carries out partial opening when the door is closed. Should the door have been fully opened using push-button 1 or partially opened with push-button 2, it can be closed by again pressing push-button 2.

Procedure:

1. Close door.
2. Set DIP switch 8 to ON, thus activating partial opening functionality
   - always leave DIP switch 8 in ON position; the OFF position automatically deletes the partial opening function that has been set.
3. Press push-button 2 (opens door from CLOSED final travel position)
   - door opens until such time as push-button 2 is pressed again or OPEN final travel position has been reached.
4. Press push-button 2 when the desired position has been reached.
5. Close door by pressing push-button 2.

Partial opening has been memorised and door is opened to set position by pressing push-button 2.

Set DIP switch 8 to OFF position to delete partial opening setting.

Partial opening via manual remote control

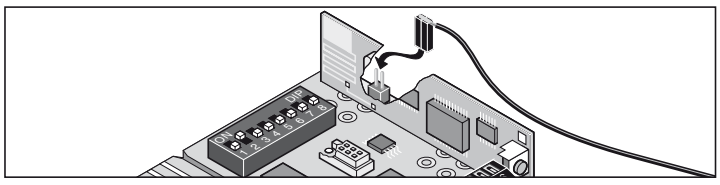
(2-channel operation)
Teaching in 2 manual remote control push-buttons:
e.g. push-button 1 on to radio channel 1 and push-button 2 on to channel 2

Radio channel 1 always has the same function as push-button 1

Radio channel 2 always has the same function as push-button 2

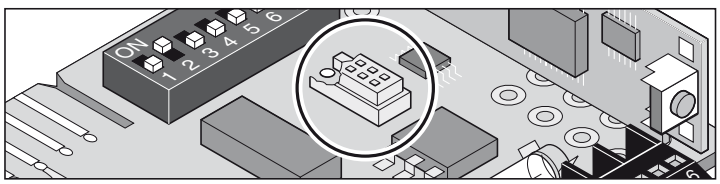
Connect external antenna

Supplied vacant as standard.



TorMinal interface

See TorMinal Operating Instructions.



Miscellaneous

Disassembly

⚠ **Observe safety instructions!**

The sequence of operations is identical to that described in the Section entitled "Installation" but in reverse order. The setting procedures described are not applicable.

Correct disposal

Observe appropriate local regulations!

Warranty and after-sales service

The warranty granted complies with statutory requirements. Contact your local stockist for any warranty claims. Warranty entitlements only apply to the country in which the given drive was purchased.

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

If you require after-sales service, spare parts or accessories, please contact your specialist retailer.

We have made every effort to ensure that these instructions are as clear and concise as possible. However, if you have any queries or wish to comment on this document, please contact us with your suggestions:

Fax.: 0049 / 7021 / 8001-403

e-mail: doku@sommer.eu

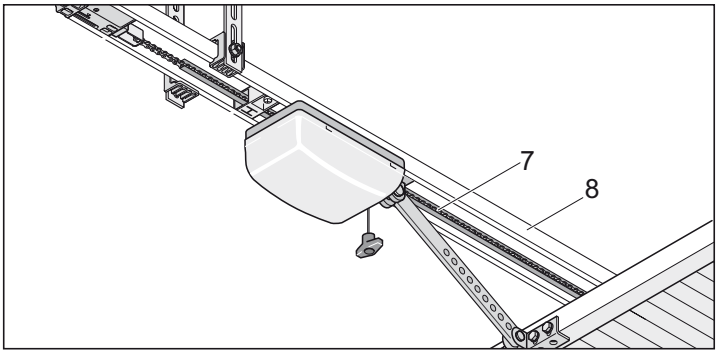
Maintenance and Care

Important information

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

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

Cleaning chain and drive unit rail

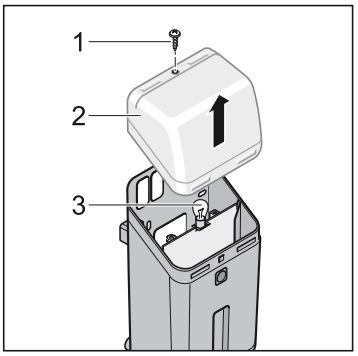


- The chain (7) or the drive rail (8) is dirty - clean it with a cloth.
- If required, lubricate the chain (7) and the drive rail (8) with conductive oil.
  Do not use grease!

Recommended oil types: Ballistol, WD40 contact spray

Changing bulb duo

- Disconnect plug from socket.

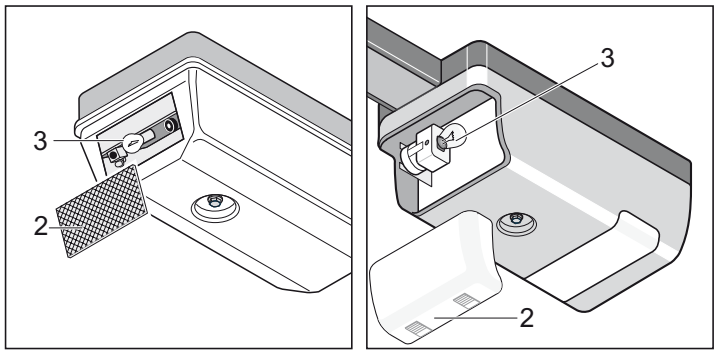


- Undo screw (1).
- Remove light diffuser (2).
- Turn bulb (3) anticlockwise and remove.
- Fit new bulb (32,5 Volt, 34 Watt, BA 15s or 24 Volt, 21 Watt, BA 15s) and turn clockwise until it locks into position.

Maintenance and Care

Changing bulb sprint / marathon

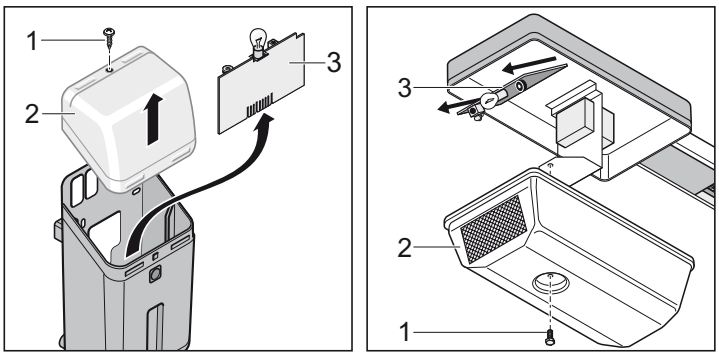
- Disconnect plug from socket.



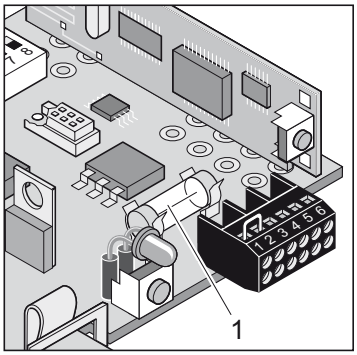
- Remove light diffuser (2).
- Turn bulb (3) anticlockwise and remove.
- Fit new bulb (32,5 Volt, 34 Watt, BA 15s or 24 Volt, 21 Watt, BA 15s) and turn clockwise until it locks into position.

Changing fuses sprint/duo

- Disconnect plug from socket.



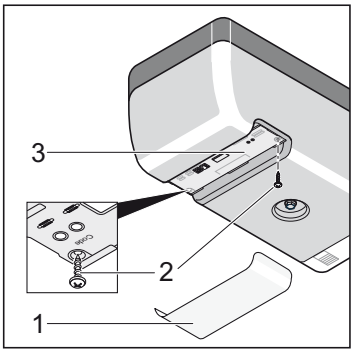
- Undo screw (1).
- Remove light diffuser (2).
- Pull out control unit (3).
- Replace defective fuse.



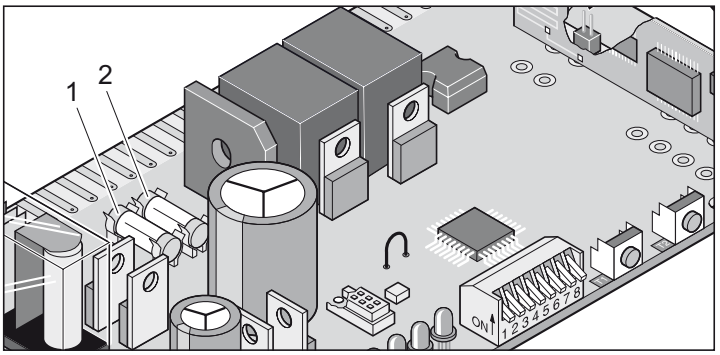
1. Fuse for warning light 1 connection, terminals 5 + 6
   Fuse 1 A, fast acting

Changing fuses marathon

- Disconnect plug from socket.



- Remove control unit lid (1). Remove screws (2).
- Pull out control unit (3).
- Replace defective fuse; all fuses are 1A fast acting



1. Fuse for connection for warning lamp 1, terminals 16 + 17
2. Fuse for connection for warning lamp 2, terminals 18 + 19

Maintenance and Care

Regular checks

Check safety devices regularly, every year at the very least, to ensure they function correctly (e.g. BGR 232).

Safety devices that are sensitive to pressure (e.g. safety switch unit) should be checked every four weeks to ensure they function correctly; see pr EN 60335-2-95.

Check	Behaviour	yes/no	Possible cause	Remedial action
Automatic force cut-off				
Use 50 mm object to stop door wing from closing	Drive reverses when contact with object is made	yes	• Automatic cut-off of supply is working as it should	• Leave all settings as they are
		no	• Door incorrectly adjusted	• Have door correctly adjusted by a person qualified to do so
Emergency release mechanism				
Adopt procedure described in 'Emergency Release' section	Emergency release can be activated easily (pull 1x, operator is unlocked)	yes	• Everything in order!	
		no	• The mechanical door and drive components are strained	• Adjust end switch for door CLOSED, or activate backjump (DIP switch 6 ON)
			• Emergency release is defective	• Repair emergency release or have it repaired
			• Door jam	• Check door. See door maintenance instructions
Safety switch unit, if provided				
Open/Close door whilst, at same time, operating safety switch unit	Door behaves in accordance with setting of DIP switch 1,2 or 3. Safety LED is lit (only marathon)	yes	• Everything in order!	
		no	• Broken cable, loose terminal	• Check wiring, tighten terminal connection
			• DIP switch maladjusted	• Correctly adjust DIP switch
			• Switch unit defective	• Take door drive mechanism out of operation and ensure it cannot restart by accident. Contact after-sales service!
Light barrier, if applicable				
Open/Close door whilst, at same time, interrupting the light barrier	Door behaves in accordance with setting of DIP switch 1,2 or 3. Safety LED is lit (only marathon)	yes	• Everything in order!	
		no	• Broken cable, loose terminal	• Check wiring, tighten terminal connection
			• DIP switch maladjusted	• Correctly adjust DIP switch
			• Light barrier soiled	• Clean light barrier
			• Light barrier maladjusted (bent bracket)	• Correctly adjust light barrier
			• Light barrier defective	• Take door drive mechanism out of operation and ensure it cannot restart by accident. Contact after-sales service!

Troubleshooting

Further troubleshooting tips

Homelink compatible!
If your vehicle is equipped with the latest Homelink system (version 7), you can reach our drive/radio receiver at 868.6 MHz. With older Homelink versions, use other radio frequencies (40.685 or 434.42 MHz). For more details, visit www.eurohomelink.com or contact your local stockist.

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, then take the following steps:

- Disconnect any accessories that may have been connected (e.g. light barrier)
- Set all DIP switches to default settings
- Set all potentiometers to default settings
- Carry out a control unit reset (deletion of force values)
- If settings have been changed using the TorMinal, carry out a control unit reset using the TorMinal.
- Check all connections at the direct plug-type adapters and the terminal bar (sprint/duo), and retighten them, if necessary.

To eliminate drive faults, follow the instructions in the table below. If you are encountering any difficulties, contact your stockist or visit the “http://www.sommer.eu” for support.

Fault	Possible cause	Remedial action
Lamp flashes	Operator is not programmed, no force values are saved	'Teaching' the drive. See section on commissioning
Drive mechanism inoperative, lamp not lit	No mains power	Connect mains supply plug
	No control unit installed	Install control unit
	Fuse in garage circuit has blown	Replace the fuse. Use a different appliance, e.g. electric drill, to check the supply
Lamp is not lit when door closes and opens	Bulb defective	Replace bulb, see 'Maintenance and Care' section’
	Fuse of light bulb defective	Replace fuse
Drive does not function	Control unit installed incorrectly	Slot control unit correctly into socket unit
	Light barrier interrupted; safety LED is lit (only marathon)	Eliminate interruption
	Safety switch unit (8.2 Kohm) defective or DIP switch 2 ON; safety LED is lit (only marathon)	Replace safety switch unit; set DIP switch 2 to OFF
	Fraba system activated but light barrier or safety switch unit (8.2 Kohm) connected; safety LED is lit (only marathon)	Deactivate Fraba system, DIP switch 2 OFF
Drive does not function when operated using manual remote control	Battery in manual remote control is flat	Change battery
	Manual remote control has not been taught in to radio receiver.	Teach in manual remote control
	Wrong radio frequency	Check frequency (40 MHz with wire aerial; 868/434 MHz without external aerial)
	Command is permanently present as push-button is jammed; Start LED is lit (only marathon)	Release push-button or replace manual remote control
Drive does not function when operated using push-button	Push-button not connected or defective	Connect push-button or replace
Door stops when closing, moves approx. 10 cm in reverse direction then stops	Obstacle has tripped automatic force switch-off	Remove obstacle; open door completely
	Incorrect force values "taught" or force tolerance is too low	Delete force values and repeat teach-in procedure
	Switch-trigger set incorrectly	Reset cut-off buffer; see 'Setting Limit Switches' section
	Door defective or door settings incorrect (e.g. spring shaft)	Have door adjusted correctly or repaired by a person qualified to do so
Door stops when opening, moves approx. 10 cm in reverse direction then stops	Obstacle has tripped automatic force switch-off	Remove obstacle. Use push-button to close the door completely
	Incorrect force values "taught" or force tolerance is too low	Delete force values and repeat teach-in procedure
	Switch-trigger set incorrectly	Adjust switch-trigger; see chapter 'Adjusting end switches'
Door stops when opening	Connected light barrier interrupted and DIP switch 1 on ON	Eliminate interruption or set DIP switch 2 to OFF

Troubleshooting

Fault	Possible cause	Remedial action
Operator does not close door	Power supply to photoelectric cell interrupted.	Check connection replace fuse
	Power supply to drive interrupted	The first command issued after restoration of the mains supply results in the drive opening the gate fully.
Drive **opens** gate but then no further reaction to a command given via push-button or remote controller	Safety input tripped (e.g. photocell defective)	- Remove obstacle from light barrier - Repair photoelectric cell
	Safety LED is lit (only marathon)	- Socket unit not plugged in correctly (only sprint and duo)
	Automatic close mode activated, (marathon only)	Door closes automatically after expiration of the set time Deactivate automatic close mode
	"Door CLOSED" limit switch in the trolley defective	Replace limit switch
The drive **closes** the door; subsequently no response to pressing of button or radio transmitter	"Door OPEN" limit switch in the trolley defective	Replace limit switch
Connected warning light does not light up	Fuse defective	Replace fuse, see 'Maintenance and Care' section
	Bulb defective	Replace bulb; see 'Maintenance and Care' section
Opening or closing speed varies	Operator starts slowly and then picks up speed	'Soft run' mode - completely normal
	Chain rail dirty	Clean rail and re-lubricate, see chapter 'Maintenance and care'
	Chain rail lubricated with unsuitable oil	Clean rail and re-lubricate, see chapter 'Maintenance and care'
	Incorrect chain tension	Tighten chain; see 'Installation sprint / marathon' or Installation - duo' section
Operator does not terminate 'Learn' sequence	End positions set incorrectly	Adjust end positions (see general instructions in "Commissioning")
Only marathon!!		
Door can only be operated if the external push-button e.g. interior switch, key switch is kept depressed - at the same time the interior lighting flashes (dead man mode)	'Dead man' mode activated	Deactivate 'dead man' mode; see TorMinal instructions
"Start" LED is continuously on	Continuous signal on button connection 1 or 2.	Check connected buttons (e.g. key-activated button, if connected)
	Radio signal is being received; a 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 decays
Only in units with radio receiver!		
All LEDs are flashing	All memory positions are occupied (max. 112)	- Delete all radio control devices no longer 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 decays
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