

HÖRMANN

**Sliding Gate Operator
EST 24/25**

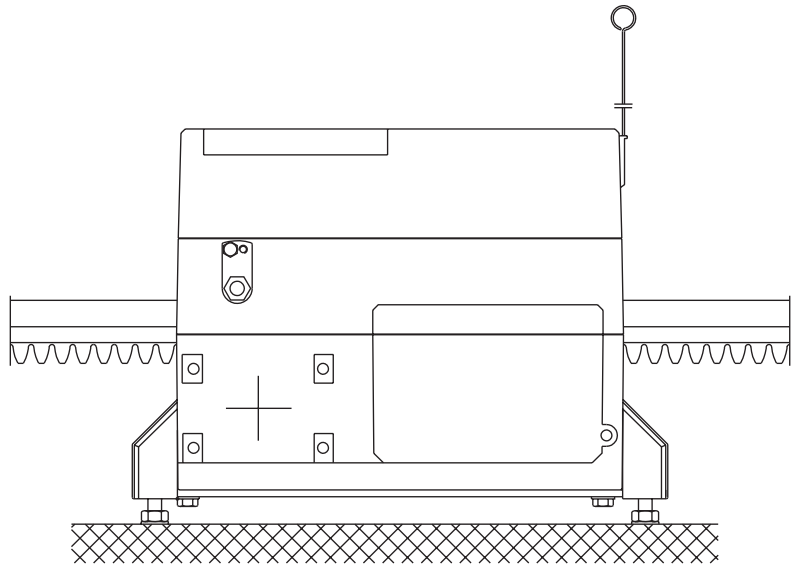
Installation Instructions



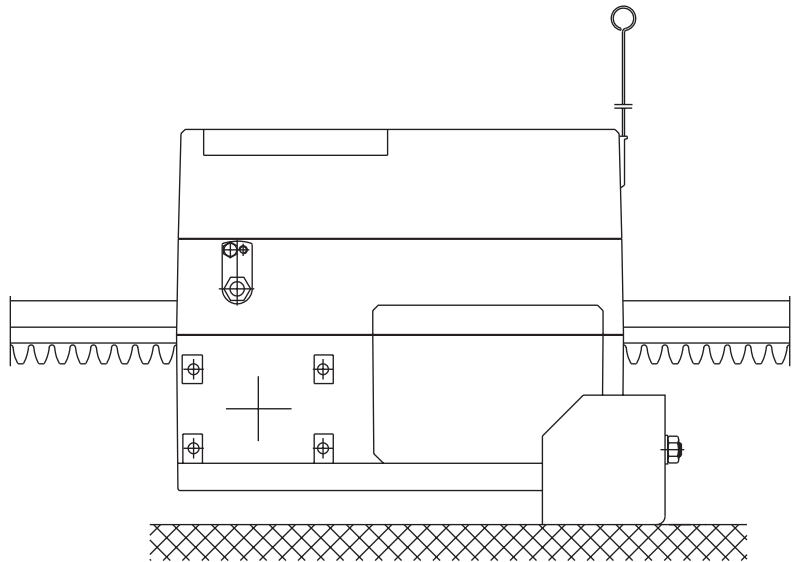
1

Overview

Drive unit with ground console



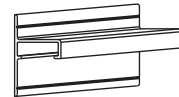
Drive unit with swivel console and height adjustment of the driving axle



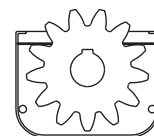
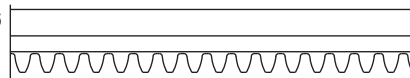
Fitting with steel locating profile



Fitting with aluminium locating profile

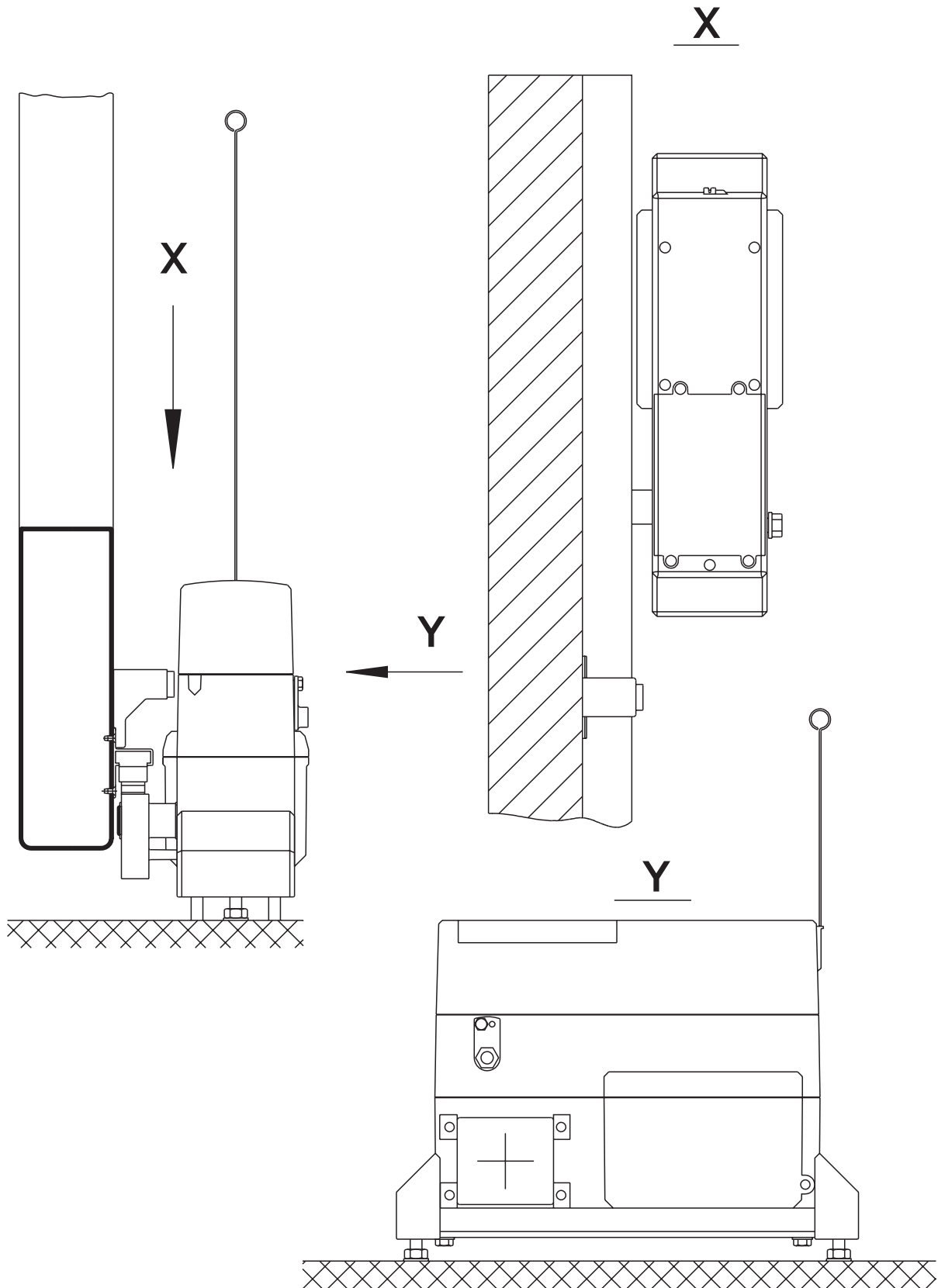


Toothed rack m6 and pinion m6 with finger-trap protection

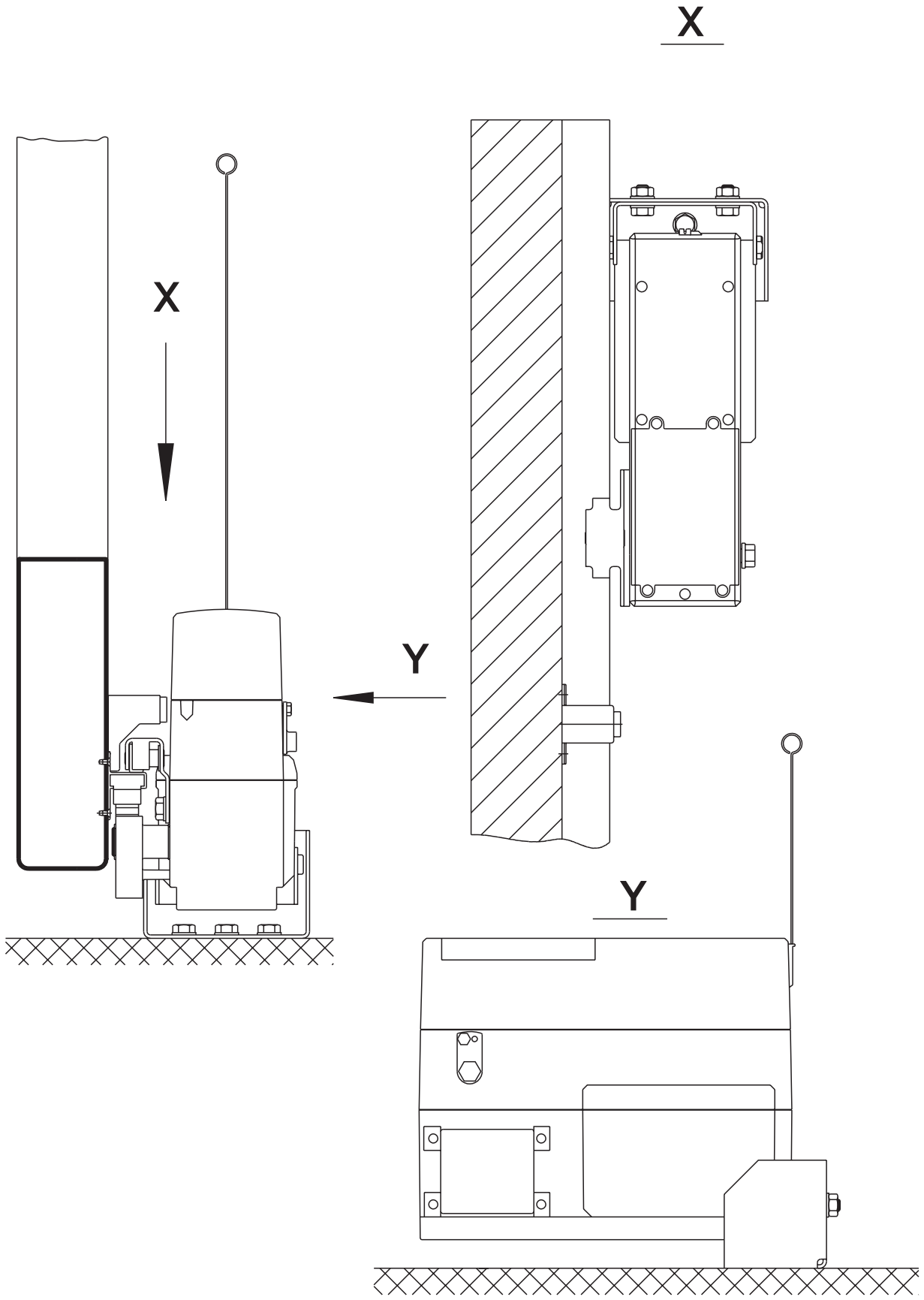


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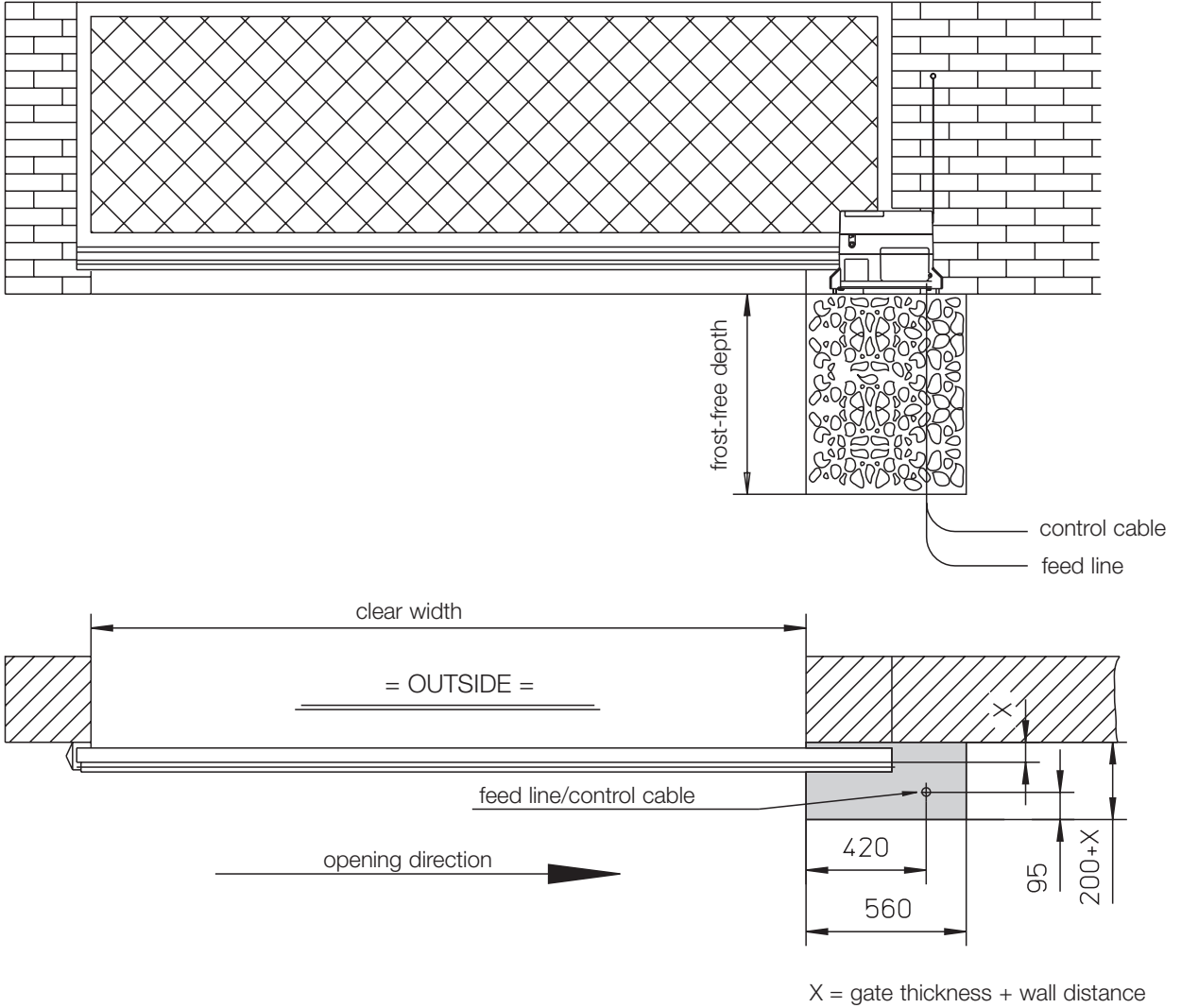
Sliding gate operator with ground console



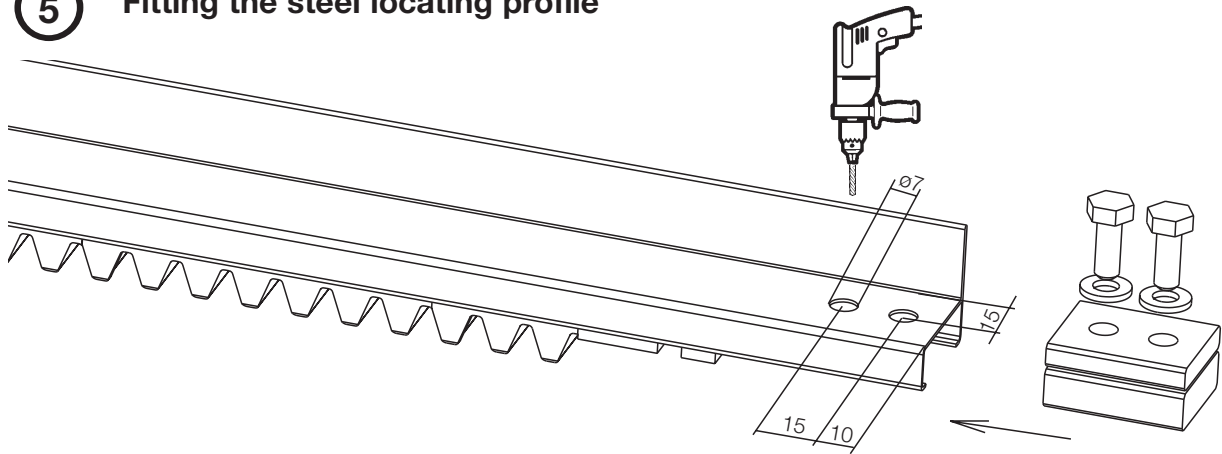
3 Sliding gate operator with swivel console and height adjustment of the driving axle



4 Foundation plan

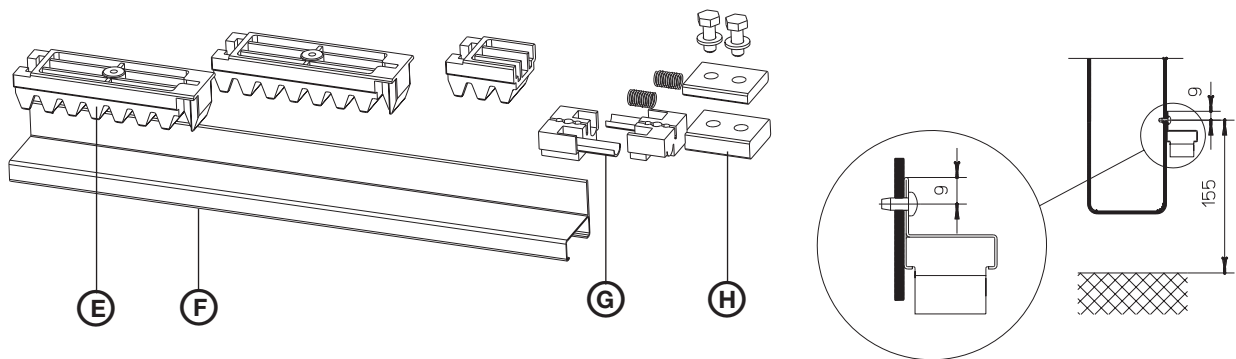


5 Fitting the steel locating profile



If necessary, shorten or extend the length of steel profile (F) as follows:

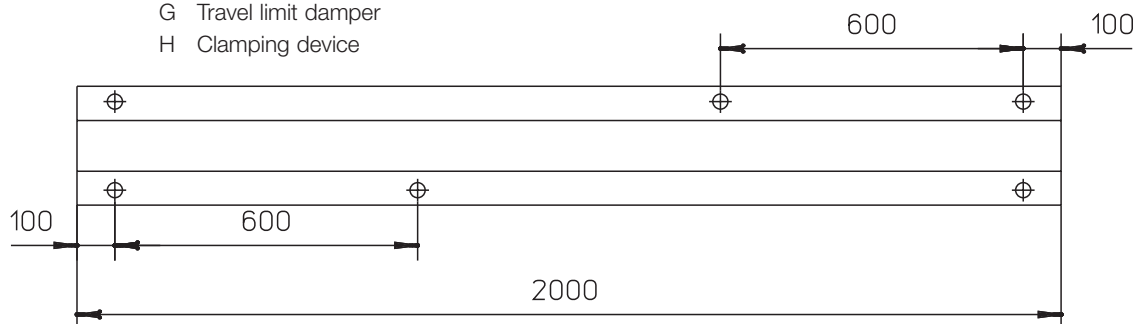
To shorten, remove travel limit damper (G) and withdraw toothed rack segments (E). Saw through profile (F) at the appropriate point maintaining a 90° cutting angle. Re-insert the required number of toothed rack segments with the travel limit dampers and enclosed clamping device (H). Drill the two through holes for the screws of the clamping device (7 mm ø) in such a way (see above) that the toothed rack is seated within the profile under slight initial tension (free from play). Tighten the screws.



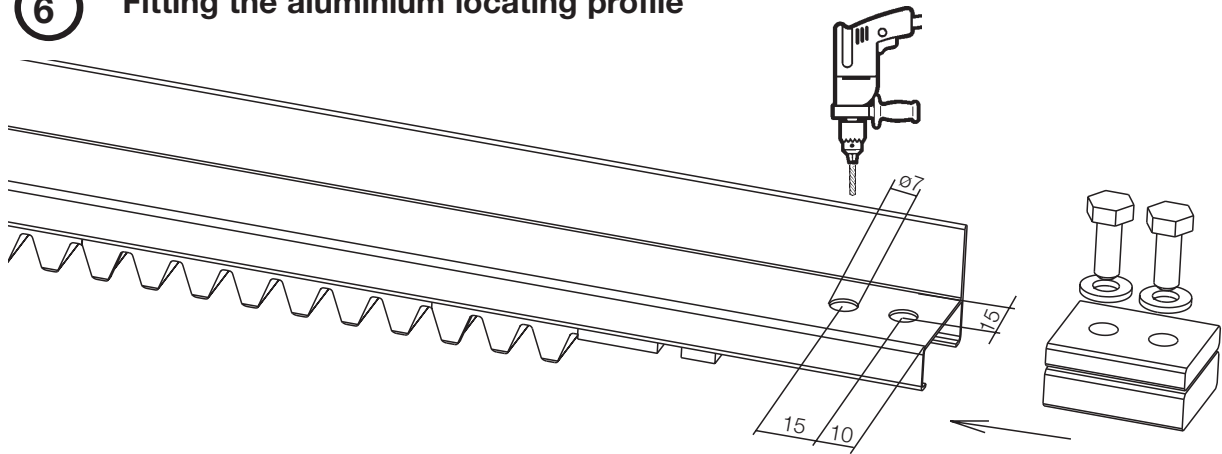
To connect several toothed rack units, remove the travel limit dampers. Clip the segments together (use enclosed segments) and push completely back into the profile together with the travel limit dampers and the clamping device. Fit the clamping device as described above. To fasten the steel profile to the gate, drill the fixing holes in the profile (5 mm ø) in accordance with the structural conditions on site.

ATTENTION: Height of fixing screws in the bottom profile of the sliding gate from the ground = 155 mm.
Screw holes in the profile from the top edge of the profile down = 9 mm.

- E Toothed rack segment
- F Locating profile
- G Travel limit damper
- H Clamping device



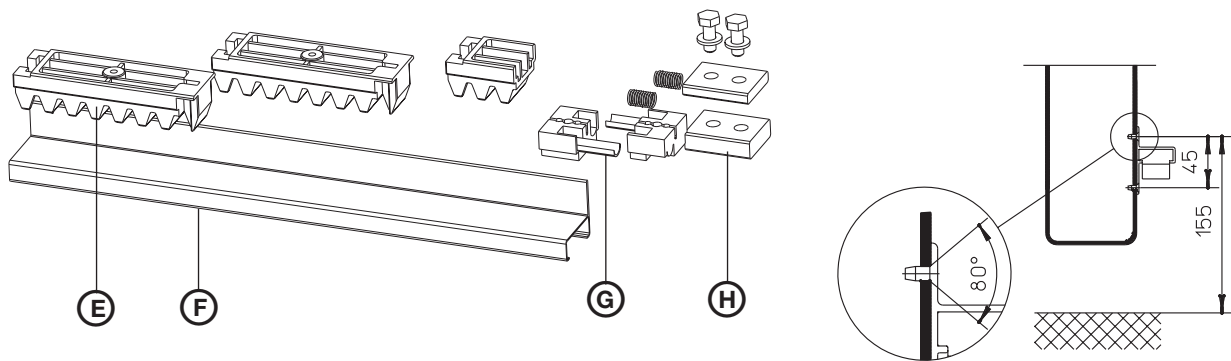
6 Fitting the aluminium locating profile



If necessary, shorten or extend the length of aluminium profile (F) as follows:

To shorten, remove travel limit damper (G) and withdraw toothed rack segments (E). Saw through profile (F) at the appropriate point maintaining a 90° cutting angle. Re-insert the required number of toothed rack segments with the travel limit dampers and enclosed clamping device (H). Drill the two through holes for the screws of the clamping device (7 mm ø) in such a way (see above) that the toothed rack is seated within the profile under slight initial tension (free from play).

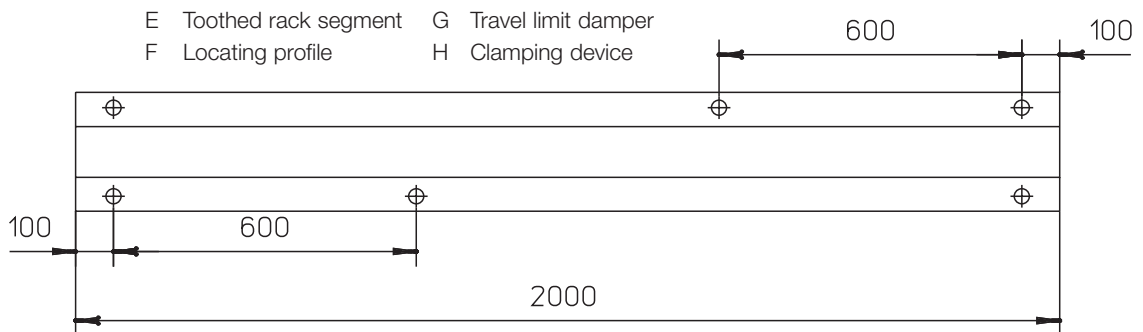
Tighten the screws.



To connect several toothed rack units, remove the travel limit dampers. Clip the segments together (use enclosed segments) and push completely back into the profile together with the travel limit damper and clamping device. Fit the clamping device as described above. To fasten the aluminium profile to the gate, drill the fixing holes in the profile (5 mm ø) in accordance with the structural conditions on site.

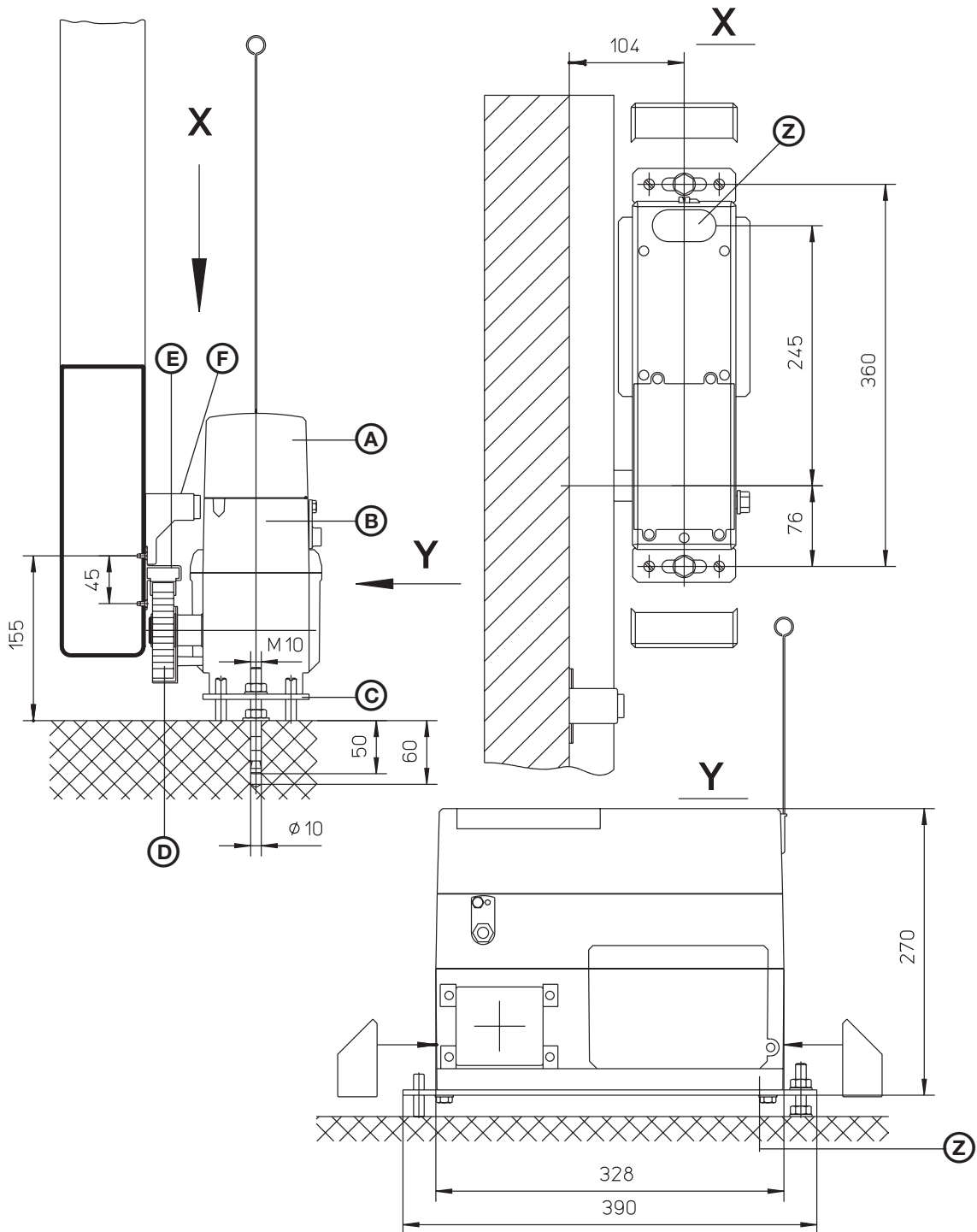
Recommendation: 6 screws to every 2 metre length of toothed rack (3 screws in the top groove, 3 in the bottom groove).

ATTENTION: Height of top fixing screws in the bottom profile of the sliding gate from the ground = 155 mm.
Distance of screw holes in the profile = 45 mm (in the profile chamfer) Holes in the locating profile with 80° countersinking for countersunk screws Bz 4.2 x 13.



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Fitting the sliding gate operator with ground console



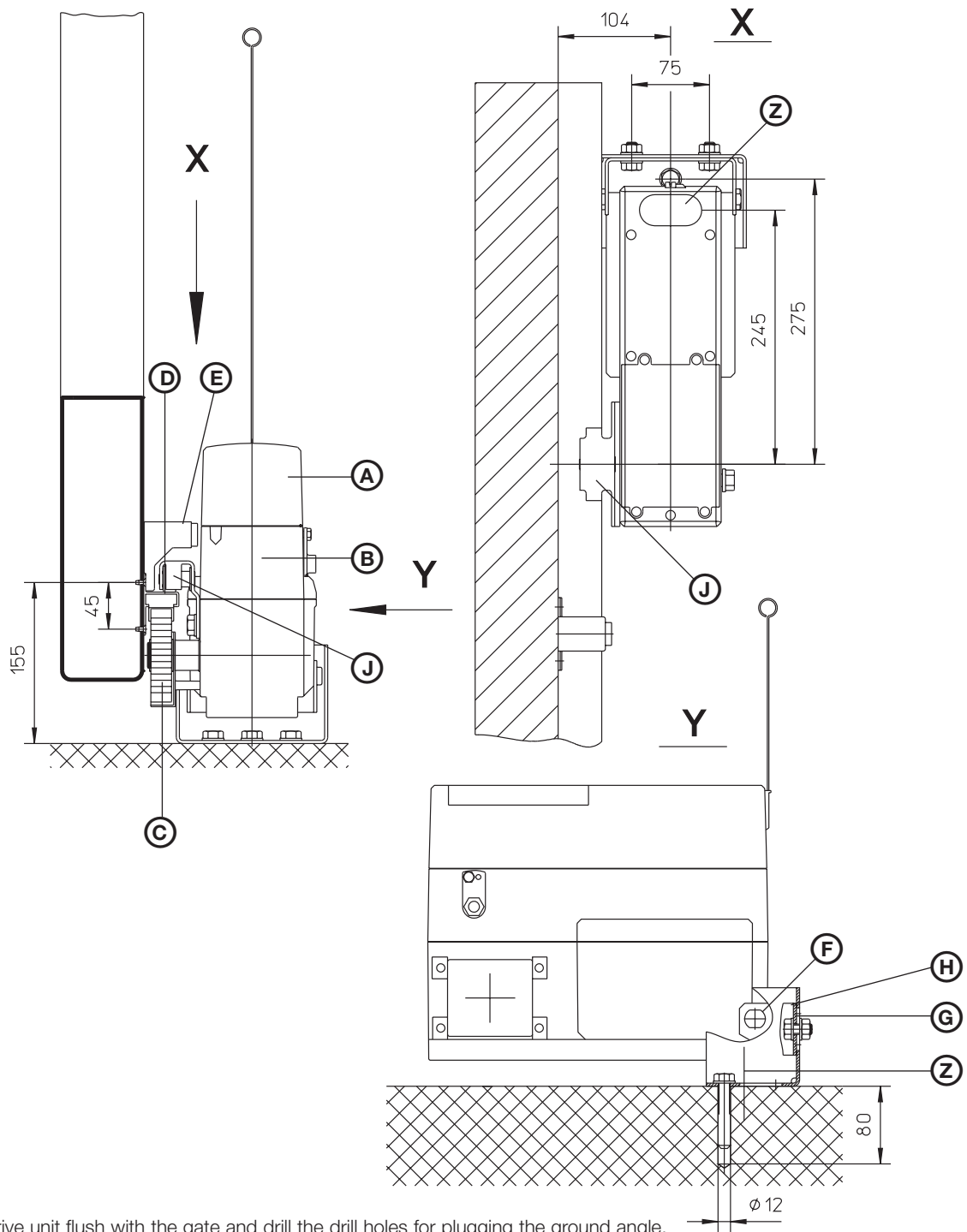
Align the drive unit flush with the gate and fasten with plugs.

Heavy-duty plugs: Observe the drilling depth. Push plugs right in and tension with a nut.

Screw drive unit (B) to base plate (C), slot onto the threaded rods and fasten with setscrews. Actuate the emergency release in accordance with point 12. Fasten locating profile (E) to the gate. By means of the setscrews, adjust the drive unit in the height just sufficiently to allow gearwheel (D) to mesh into the toothed rack profile free from play. Open/close the gate by hand to allow the locating profile to accommodate any unevenness on the ground. Then tighten the screws. Slot the supplied caps over the screws on the ground plate at the sides.

- | | |
|------------------------|---------------------|
| A Control unit | D Gearwheel |
| B Drive unit | E Locating profile |
| C Base plate | F Magnet receptacle |
| Z Area for cable entry | |

8 Fitting the sliding gate operator with swivel console and height adjustment of the driving axle



Align the drive unit flush with the gate and drill the drill holes for plugging the ground angle.

Heavy-duty plugs: Observe the drilling depth. Push the plugs right in and tension with a nut.

Screw drive unit (B) and drive unit angle (H) to load-bearing bolt (F). Loosely screw ground angle (G) to drive unit angle (H).

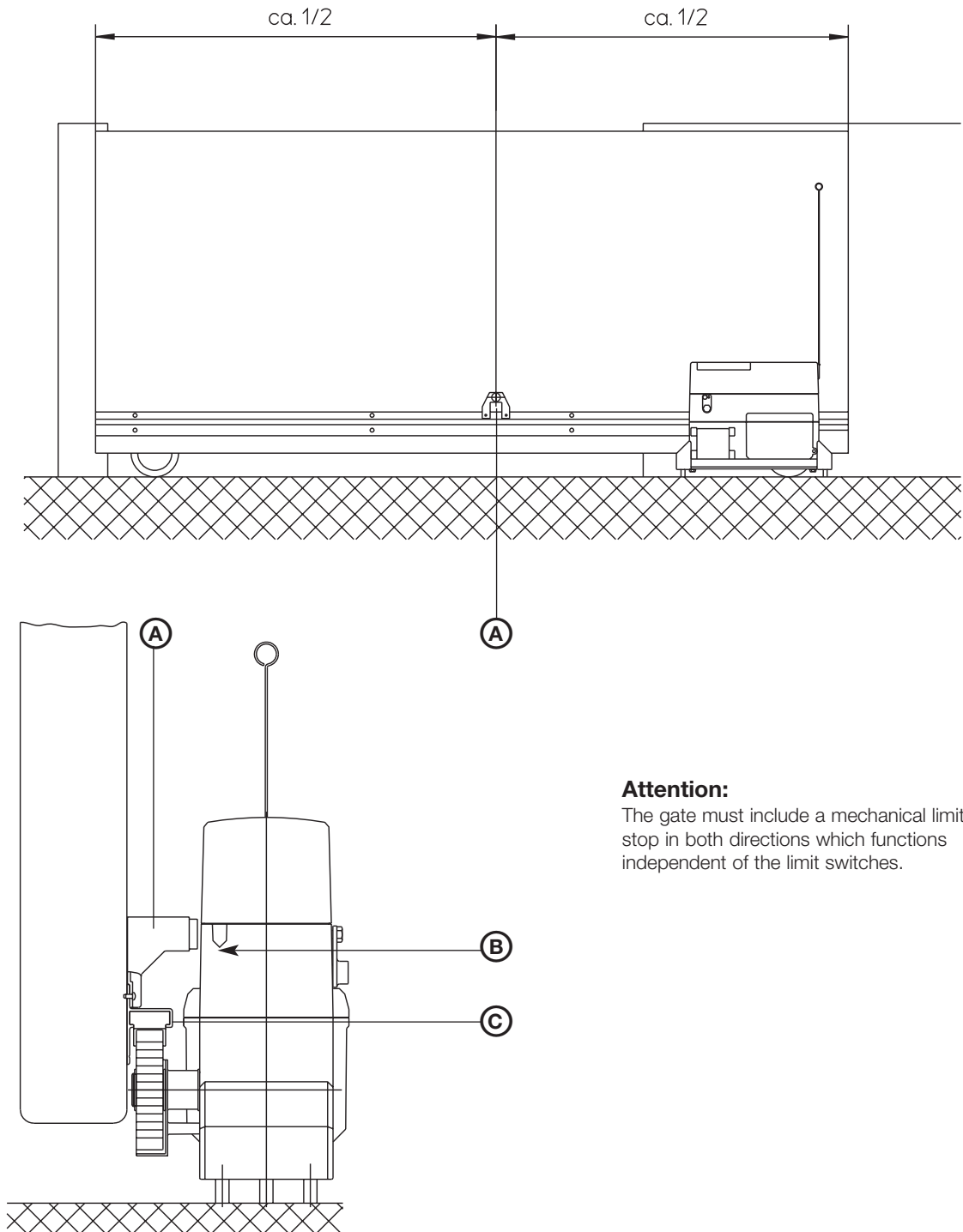
Fasten locating profile (D) to the gate. Fit thrust bearing (J) to the drive unit. Actuate the emergency release in accordance with point 12 and push gate onto gearwheel (C). Adjust the thrust bearing in the height just sufficiently to allow gearwheel (C) to mesh into the toothed rack profile free from play. Open/close the gate by hand and ensure horizontal alignment of the drive unit. Then tighten the screws.

- A Control unit
- B Drive unit
- C Gearwheel
- D Locating profile

- E Magnet receptacle
- F Load-bearing bolt
- G Ground angle
- H Drive unit angle

- J Thrust bearing
- Z Area for cable entry

9 Fitting the magnetic reference point



Attention:

The gate must include a mechanical limit stop in both directions which functions independent of the limit switches.

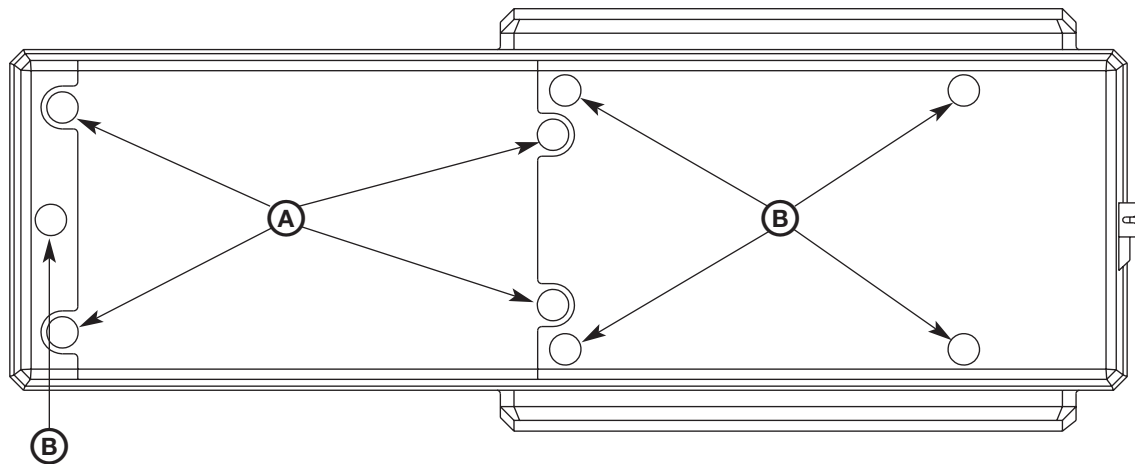
A microprocessor control unit ensures automatic cut-out at the "OPEN" and "CLOSE" end of travel positions without using mechanical limit switches. The actual gate position is recorded by a reference point sensor, which is integrated into the control unit and, is guided by a magnet.

Fit magnet retainer (A) so that it is resting on the locating profile (C) as shown. The bottom edge of the magnet should align with arrow (B) in the drive unit housing.

Important: Before carrying out any work, always disconnect the drive unit from the mains!

- A Magnet retainer
- B Reference point sensor
- C Locating profile

10 Opening the housing cover



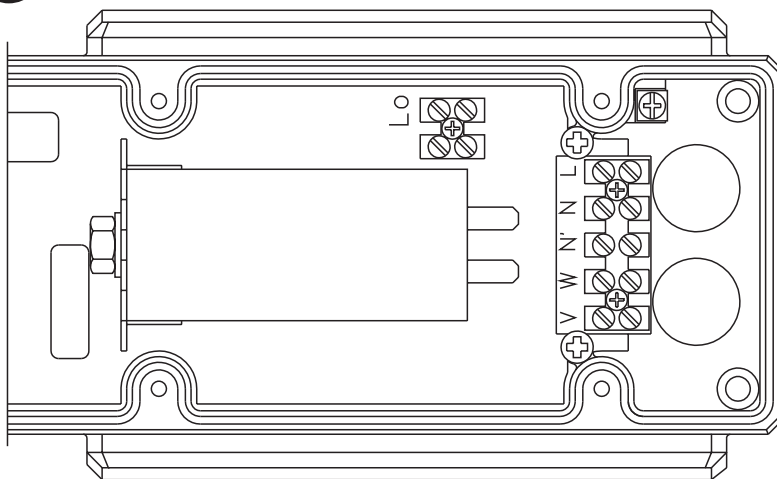
To detach the housing cover, remove the 5 screws (B).

Remove the caps over the screw heads and then loosen the screws with an SW 4 socket spanner.

To set the control unit, the control unit cover must be removed. Remove screws (A). Remove the sealing caps over the screw heads and then loosen the screws with an SW 4 socket spanner.

On screwing down the housing cover and the control unit cover check that the toroidal sealing ring is properly seated in the lining groove. After screwing down the covers, return the caps to the screw heads in the drill holes.

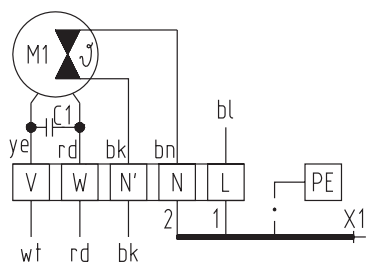
11 Electrical connection



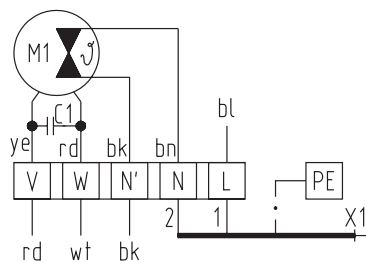
Legend:

bl.	blue
bk.	black
rd.	red
wt.	white
ye.	yellow
bn.	brown

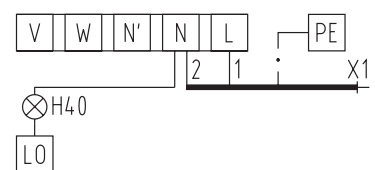
Fitting inside left



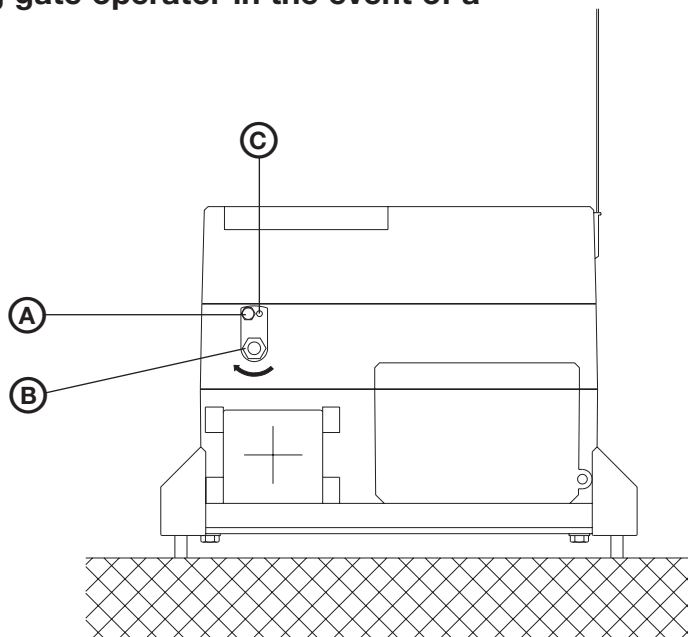
Fitting inside right



Signal light



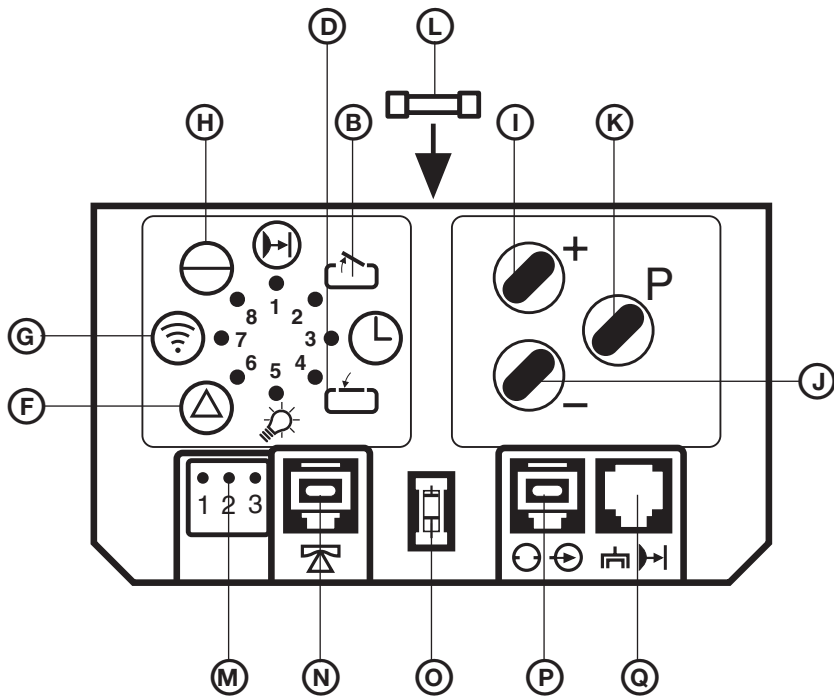
12 Disengaging the sliding gate operator in the event of a power failure



Emergency release:

Remove securing screw (A). Using an SW 17 ring spanner, turn hexagon head (B) in direction of arrow and screw securing screw (A) into position (C). The drive unit is now mechanically disengaged and the gate can be moved manually. The control unit is cut off at the same time.

- A Securing screw
- B Hexagon head of the emergency release
- C Position of the securing screw in the disengaged state

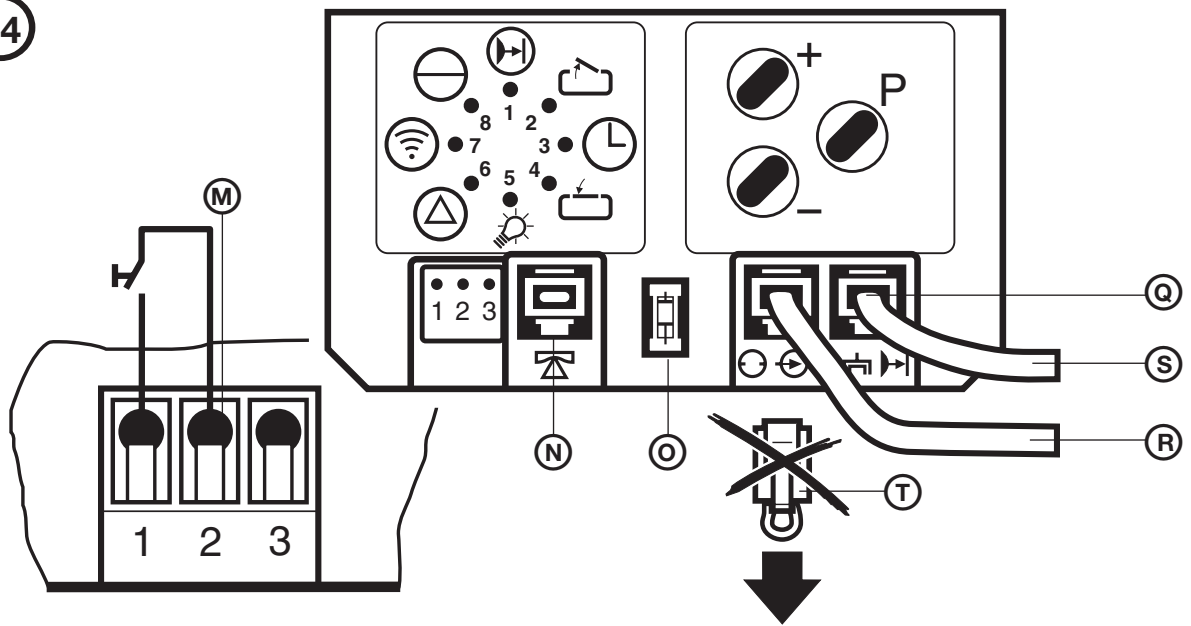


Electronic control unit:

- F Fault display - flashes when fault registered
- G Impulse display - glows when button pressed
- H Power supply display - flashes on valid signal from hand transmitter
- B Door open display - glows when opening limit is reached
- D Door closed display - glows when closing limit is reached
- I "OPEN" test button
- J "CLOSE" test button
- K Programming button P
- M Connecting terminals for external impulse buttons
- P Plug socket for "external control elements"
- Q Plug socket for "electronic aerial", "external photocell"
- L Mains fuse 4 A MT max.
- N Plug socket for external closing edge safety device
- O Programming switch for closing edge safety device

Symbols	Explanation
	On, mains voltage
	Impulse operation
	Fault
	External photocell
	Automatic timer
	Operator lighting
	Door open
	Door closed
1 2 3 	External connecting terminals
+	Programming button + "OPEN" test button
-	Programming button - "CLOSE" test button
P	Programming button
	"STOP" button
	External control elements
	Electronic aerial
	External photocell
	External closing edge safety device

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Connecting external control elements

- R Connecting cable for control elements (Hörmann system cabling). To connect, remove short-circuit plug (T) - (button inside or key switch outside; not part of the EST 24/25 supply package).
- M Connection of site control elements may only be made to the connecting terminals
 - 1 GND
 - 2 Impulse
 - 3 24 V DC max. 50 mA
- T Short-circuit plug
- S Connection for electronic aerial. **(Important: do not insert short-circuit plug (T) into plug socket (Q).)**
- N Connection for closing edge safety device (SKS)
- O Programming for SKS self-monitoring unit

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Hand transmitter:

- A Flashing battery control
- B Operation button
- C Battery compartment cover
- D 9V battery IEC 6F 22

To change and insert the battery, push cover (C) to one side and slide back.

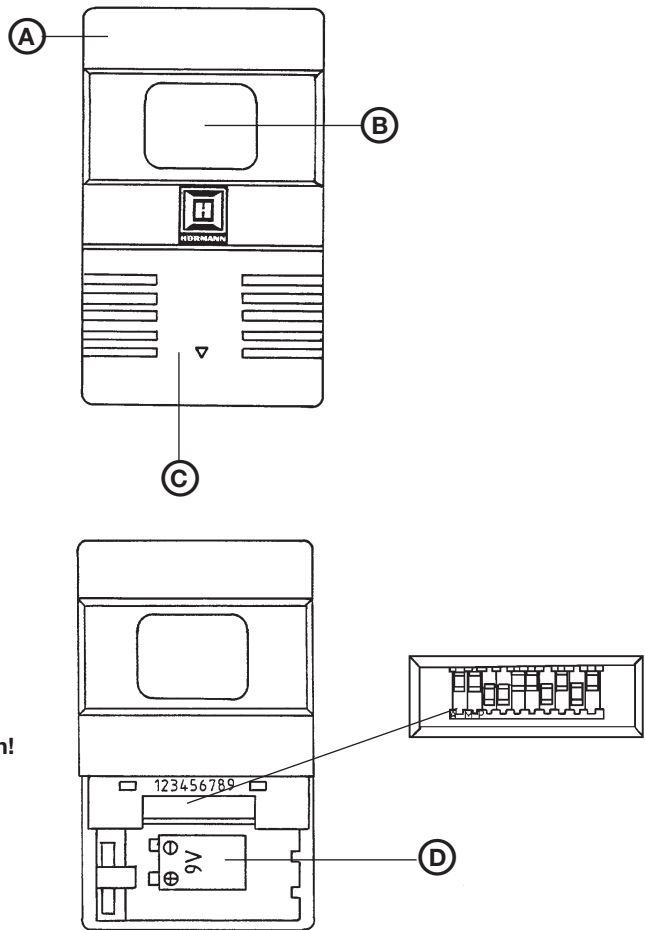
When changing the battery, be sure to pole correctly.

Batteries are not covered by the warranty.

Important:

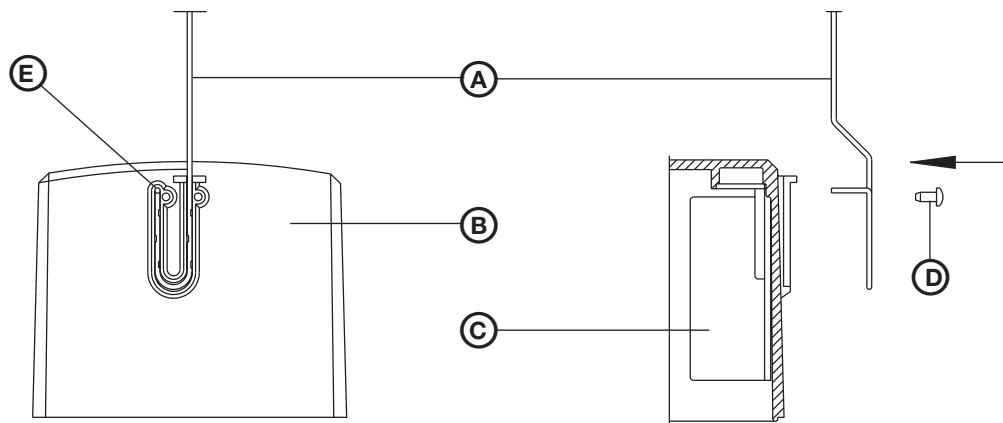
Only operate the hand transmitter when certain that neither persons nor objects are located within the door's area of travel.

Keep hand transmitters well out of the reach of children!

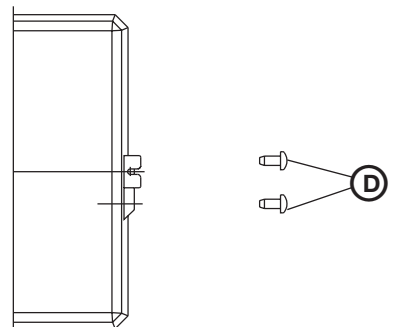


16

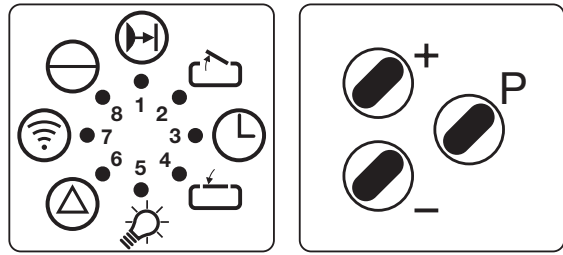
Fitting the rod aerial



Rod aerial (A) is fitted on the right-hand side of housing cover (B). The free short end of the rod aerial is pressed into position (E) in the housing cover until the thin wall at this point is penetrated, thereby making contact with electronic aerial (C). The rod aerial is fixed in place with screws (D).



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Programming the control unit

The control unit is in the operating state as soon as it is switched on (display 8 lights up).

If the P button is pressed for longer than 2 seconds, the control unit changes to the programming mode. By repressing the P button the programming menus necessary for programming the basic operator settings are selected in turn. If a programming menu is skipped, the setting remains unchanged. Using the + or - buttons, changes can be made in the corresponding programming menu which can then be stored by pressing the P button. If the control unit is in the programming mode and 30 seconds elapse without any of the 3 programming buttons having been pressed, the programming process is terminated and the control unit returns to its operating state (fault message 7, see pt. 20). On misprogramming there is no need to reset because all the stored settings can be reprogrammed.

Programming an external photocell (The door operator is preprogrammed for connecting to an external photocell to monitor the through-traffic area. If this photocell is not connected, the operator must be reprogrammed as per pt. 1. Otherwise the door can only be closed by press and hold.)

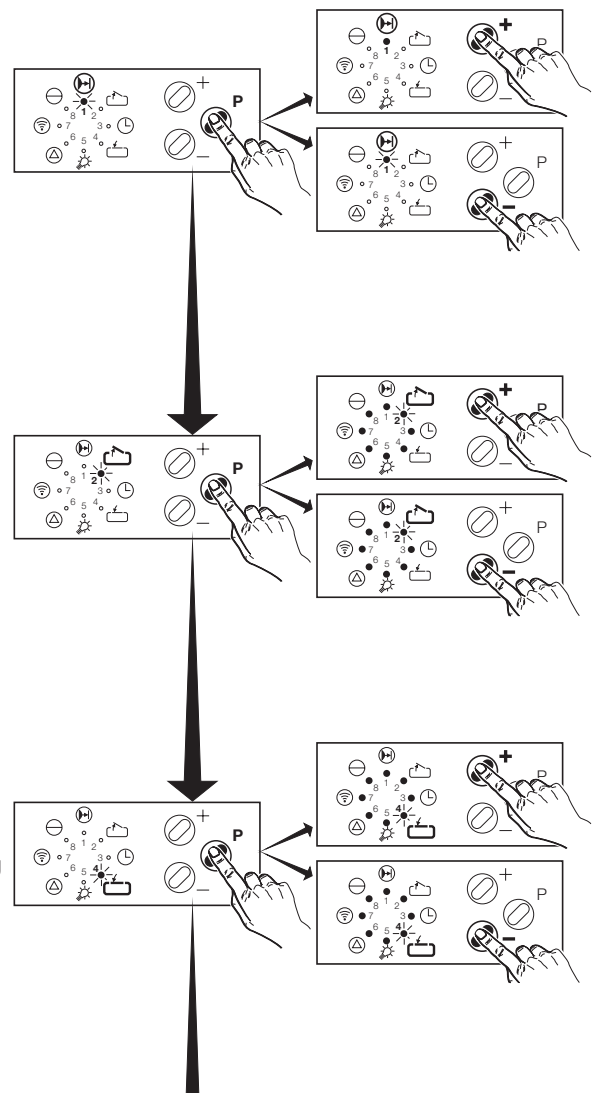
1. Press programming button P for approx. 2 seconds until display 1 flashes.
The **+** button allows the external photocell to be connected.
Display 1 glows.
By pressing the **- button, the drive unit can be operated without an external photocell. Display 1 flashes.**
Store by pressing the programming button P.

Programming the "OPEN" travel limit

2. Display 2 flashes.
Allow the door to reach its final "OPEN" position by operating the **+** or **-** buttons. (Drive unit operates with press and hold.) Store the "OPEN" travel limit by pressing programming button P.

Programming the "CLOSE" travel limit

3. Display 4 flashes.
Allow the door to reach its final "CLOSE" position by operating the **+** or **-** buttons. (Drive unit operates with press and hold.) Store the "CLOSE" travel limit by pressing programming button P.



Programming the "OPEN" automatic cut-out

4. Displays 2 and 6 flash.

By operating the \oplus or \ominus buttons, the automatic cut-out can be set in increments from 1 (most sensitive setting) to 16.

Display 1 flashes = increment 1

Display 1 glows = increment 2

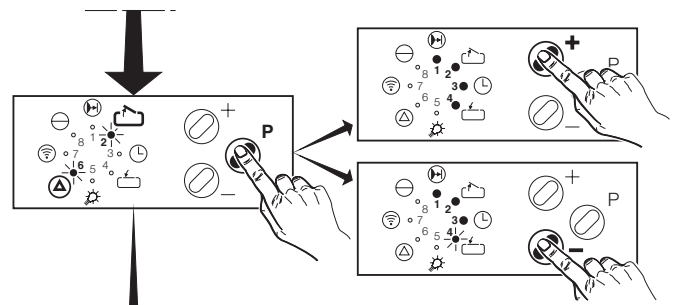
Display 1 glows, display 2 flashes = increment 3

...

Displays 1 to 8 glow = increment 16

Store by pressing programming button P.

Set the automatic cut-out to be as sensitive as possible (150 N max. at the top edge of the door leaf).



Programming the "CLOSE" automatic cut-out

5. Displays 4 and 6 flash.

By operating the \oplus or \ominus buttons, the automatic cut-out can be set in increments from 1 (most sensitive setting) to 16.

Display 1 flashes = increment 1

Display 1 glows = increment 2

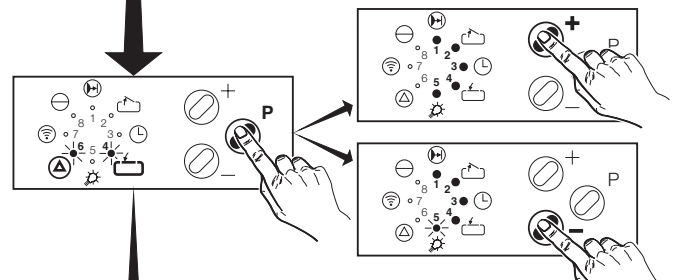
Display 1 glows, display 2 flashes = increment 3

...

Displays 1 to 8 glow = increment 16

Store by pressing programming button P.

Set the automatic cut-out to be as sensitive as possible (150 N max. at the bottom edge of the door leaf).



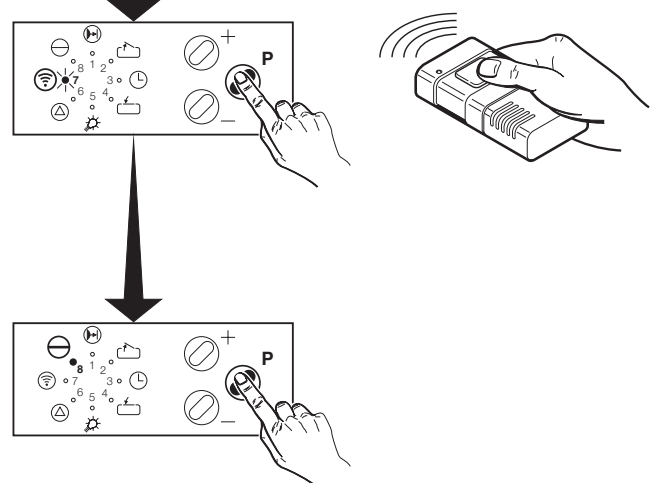
Programming the remote control

6. Display 7 flashes

Set the position of the 10-digit coding switches nos. 1-10 in the hand transmitter (individual code).

Possible combinations: 1024

Operate the respective button of the coded hand transmitter until display 7 flashes rapidly. The code can be stored by pressing programming button P and programming is completed; recognizable by a running light through all the displays. The control unit is in an operating state (in the event of a power failure, all settings are retained)..



Programming individual functions e.g. the "CLOSE" automatic cut-out

Press programming button P for approx. 2 seconds until display 1 flashes.

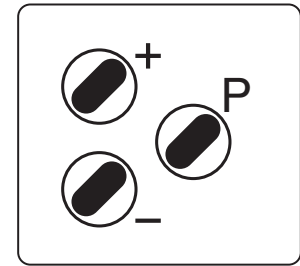
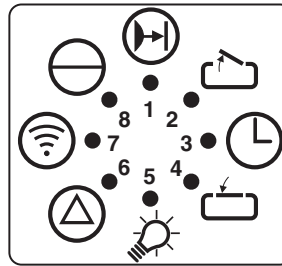
Repeatedly press programming button P until displays 4 and 6 flash.

Carry out programming (see pt. 5).

Press programming button P again to complete the programming process, recognizable by a running light through all the displays.

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**Programming the automatic timer
(On activating the automatic timer, an external photocell to monitor the through-traffic area must be connected and activated in accordance with pt. 1, page 16. Otherwise no automatic timer function is possible.)**



The control unit is in an operating state (display 8 glows). If button P is pressed for longer than 10 seconds, the control unit switches over to the programming plane (display 8 flashes).

Continue to press button P and with the (+) or (-) buttons select the automatic timer programming plane (display 3 flashes).

After button P is no longer pressed, display 1 flashes (menu 1).

The gate open phase can be programmed using the (+) or (-) buttons (see table).

Press button P (display 2 flashes/menu 2).

The warning phase can be programmed using the (+) or (-) buttons (see table).

Press button P (display 3 flashes/menu 3).

The start-up warning can be programmed using the (+) or (-) buttons (see table).

Press button P (display 4 flashes/menu 4).

Using the (+) or (-) buttons the function "early closing after driving past the through-traffic photocell", or a set time phase can be programmed.

Display 1 flashes: gate closes after the set time phase.

Display 1 glows: gate closes after driving past the through-traffic photocell.

Store by pressing programming button P. The control unit is in an operating state.

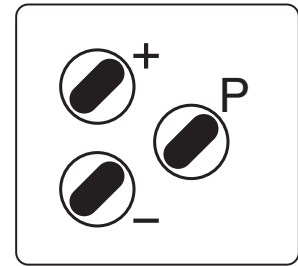
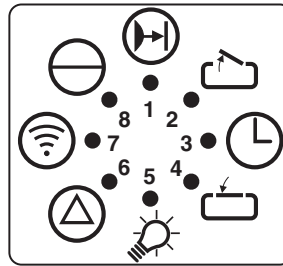
Table for automatic timer

Increment	Display	Open phase	Warning phase	Start-up warning
1	1 flashes	closing without function	closing without function	switched off
2	1 glows	5 sec.	2 sec.	1 sec.
3	2 flashes	10 sec.	5 sec.	2 sec.
4	2 glows	15 sec.	10 sec.	3 sec.
5	3 flashes	20 sec.	15 sec.	4 sec.
6	3 glows	25 sec.	20 sec.	5 sec.
7	4 flashes	30 sec.	25 sec.	6 sec.
8	4 glows	35 sec.	30 sec.	7 sec.
9	5 flashes	40 sec.	35 sec.	-
10	5 glows	50 sec.	40 sec.	-
11	6 flashes	80 sec.	45 sec.	-
12	6 glows	100 sec.	50 sec.	-
13	7 flashes	120 sec.	55 sec.	-
14	7 glows	150 sec.	60 sec.	-
15	8 flashes	180 sec.	65 sec.	-
16	8 glows	255 sec.	70 sec.	-

Deactivating the automatic timer (both phases without function).

If in accordance with the table the open phase or warning phase is set "without function", the automatic timer is deactivated.

Programming the operator lighting/signal lights



The control unit is in an operating state (display 8 glows). If button P is pressed for longer than 10 seconds, the control unit switches over to the programming plane (display 8 flashes). Continue to press button P and with the \oplus oder \ominus buttons select the signal lights programming plane (display 5 flashes). Release button P.

Menu 1 "lighting phase" (display 1 flashes) selected.

Set the function in accordance with the table by pressing the \oplus or \ominus buttons. Store by pressing button P.

Menu 2 "signal lights" (display 2 flashes) selected.

Set the function by pressing the \oplus oder \ominus buttons.

Display 1 flashes: external signal light is glowing.

Display 1 glows: external signal light flashing.

Store by pressing button P.

Menu 3 "lighting" (display 3 flashes) selected.

Set the function by pressing the \oplus or \ominus buttons.

Display 1 flashes: operator lighting glows during the lighting phase.

Display 1 glows: operator lighting flashes during the warning phase.

Store by pressing button P.

The control unit is in an operating state (display 8 glows).

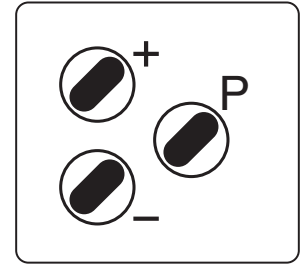
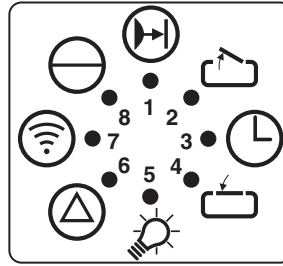
Table for lighting phases

Increment	Display	Lighting phase
1	1 flashes	2 sec.
2	1 glows	95 sec.
3	2 flashes	100 sec.
4	2 glows	110 sec.
5	3 flashes	120 sec.
6	3 glows	130 sec.
7	4 flashes	140 sec.
8	4 glows	150 sec.
9	5 flashes	160 sec.
10	5 glows	170 sec.
11	6 flashes	180 sec.
12	6 glows	190 sec.
13	7 flashes	200 sec.
14	7 glows	210 sec.
15	8 flashes	220 sec.
16	8 glows	240 sec.

Note:

To connect operator lighting, the "relay retrofit kit OPEN-CLOSE+LIGHT function for standard in-housing operators", item no. 152 646, is required.

Programming the operating modes



The control unit is in an operating state (display 8 glows). If button P is pressed for longer than 10 seconds, the control unit switches over to the programming plane (display 8 flashes).

Continue to press button P and with the (+) or (-) buttons select the operating modes programming plane (display 8 flashes).

After button P is no longer pressed, display 1 flashes (menu 1).

Set the function in accordance with the table by pressing the (+) or (-) buttons.

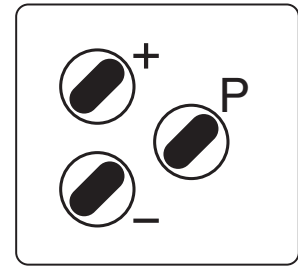
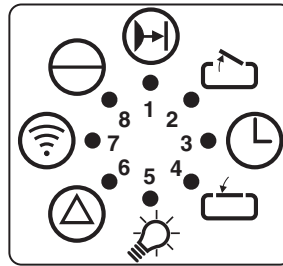
Press button P to store the function and select the next menu (displays 2-5).

After menu 5 the control unit is in an operating state.

Table for operating modes (display 8 flashes)

Operating modes Display / menu	Increment 1 Display 1 flashes	Increment 2 Display 1 glows
1/Press-and-release "OPEN"	Press-and-hold	with press-and-release
2/Press-and-release "CLOSE"	Press-and-hold	with press-and-release
3/Impulse commands "OPEN"	Start drive only	Start and stop drive
4/Direction commands "CLOSE"	Start drive only	Start and stop drive
5/Impulse function "OPEN"	Sequential control - Start in direction 1 - Stop - Start in direction 2	Impulse "OPEN" - always open, only close again from the final OPEN position

Programming the reverse modes



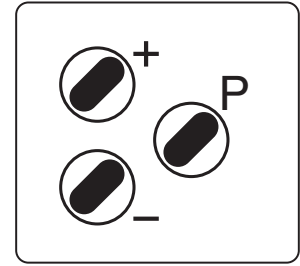
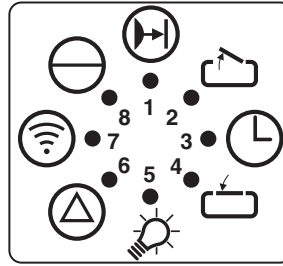
The control unit is in an operating state (display 8 glows). If button P is pressed for longer than 10 seconds, the control unit switches over to the programming plane (display 8 flashes). Continue to press button P and with the \oplus or \ominus buttons select the reverse modes programming plane (display 6 flashes). After button P is no longer pressed, display 1 flashes (menu 1). The function can be set in accordance with the table by pressing the \oplus or \ominus buttons.

The function is stored by pressing button P and the next menu (displays 2-6) is selected. After menu 6 the control unit is in an operating state.

Table for reverse modes (display 6 flashes)

Reverse modes Display / menu	Increment 1 Display 1 flashes	Increment 2 Display 1 glows	Increment 3 Display 2 flashes	Increment 4 Display 2 glows
1/"OPEN" power limit	STOP	Short reverse	Long reverse	not fitted
2/"CLOSE" power limit	STOP	Short reverse	Long reverse	not fitted
3/"OPEN" photocell	STOP	Short reverse	Long reverse	not fitted
4/"CLOSE" photocell	STOP	Short reverse	Long reverse	not fitted
5/"OPEN" closing edge safety device	STOP	Short reverse	Long reverse	not fitted
6/"CLOSE" closing edge STOP safety device	Short reverse	Long reverse	not fitted	

Programming the parameters



The control unit is in an operating state (display 8 glows). If button P is pressed for longer than 10 seconds, the control unit switches over to the programming plane (display 8 flashes). Continue to press button P and with the (+) or (-) buttons select the parameters programming plane (display 4 flashes). Release button P.

Menu 1 "travel time limit" (display 1 flashes) selected.

Set the function in accordance with the table by pressing the (+) or (-) buttons. Store by pressing button P.

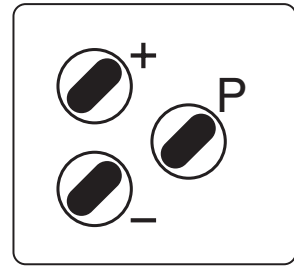
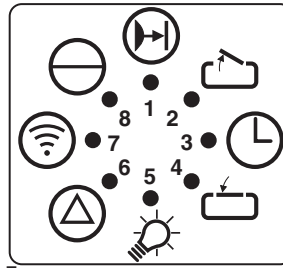
Menu 2 "learned power limit" (display 2 flashes) selected.

By pressing the (+) or (-) buttons, the function can be set in increments from 1 - 16 (1 = switched off, 2 = most sensitive setting). Store by pressing button P.

Menu 3 "power limit response sensitivity" (display 3 flashes) selected. By pressing the (+) or (-) buttons, the function can be set in increments from 1 - 16 (1 = switched off, 2 = most sensitive setting). Store by pressing button P.

The control unit is in an operating state (display 8 glows).

Table for parameters		
Increment	Display	Travel time limitations
1	1 flashes	55 sec.
2	1 glows	95 sec.
3	2 flashes	100 sec.
4	2 glows	110 sec.
5	3 flashes	120 sec.
6	3 glows	130 sec.
7	4 flashes	140 sec.
8	4 glows	150 sec.
9	5 flashes	160 sec.
10	5 glows	170 sec.
11	6 flashes	180 sec.
12	6 glows	190 sec.
13	7 flashes	200 sec.
14	7 glows	210 sec.
15	8 flashes	220 sec.
16	8 glows	240 sec.



**Test Instructions - only for the specialist -
Trouble shooting:**

Fault	Cause	Remedy
Display 8 doesn't glow.	No voltage.	Check mains supply. Check electric socket. Check operator mains fuse (pt. 13/L).
	Thermal protection in mains transformer activated.	Allow mains transformer to cool down.
	Defective control unit.	Cut off mains supply to operator. Remove housing cover (pt. 10). Unscrew control unit, pull slightly forward and withdraw the connecting plug. Remove control unit and have it checked.
Display 6 flashes. Fault 10	Automatic cut-out set too sensitively. Door operation too sluggish. Door blocks.	Re-set automatic cut-out to be less sensitive (pt. 17/4 - "OPEN" direction, pt. 17/5 - "CLOSE" direction). Ensure door moves easily.
Display 6 flashes. Fault 6 or 15	External photocell defective or interrupted.	Remove obstruction or have photocell checked.
No response on impulse. Fault 36	Connecting terminals for "IMPULSE" button bridged, e.g. due to short-circuit or wrong terminal connection.	Temporarily isolate cabled key switches or interior push buttons from control unit. Remove plug (pt. 14/R), insert plug (pt. 14/T) and look for cable fault.
	Short-circuit plug removed (pt. 14/T), but "STOP" button not connected.	Connect "STOP" button.
Drive only operates in "OPEN" but not in "CLOSE" direction. Fault 15	Photocell (pt. 17/1) programmed, but not connected.	Reprogramme photocell function or connect photocell.
Display 7 doesn't flash rapidly on impulse from hand transmitter	Electronic aerial disconnected.	Connect aerial to control unit (pt. 14/S).
	Hand transmitter coding is not consistent with receiver coding.	Check coding (pt. 17/6).
	Flat battery.	Insert new 9V battery IEC 6F22 (pt. 15). Flashing LED in transmitter indicates battery condition.
	Hand transmitter, control unit or electronic aerial defective.	Have all 3 components checked.
Insufficient range of remote control (less than 5 m).	Flat battery.	Insert new 9V battery IEC 6F22 (pt. 15). Flashing LED in transmitter indicates battery condition.
	Wrongly positioned electronic aerial.	Check rod aerial fitting (pt. 16).
Display 6 flashes. Fault 9	RPM sensor defective.	Have operator checked.

Test Instructions - continued -

The fault number is displayed by briefly pressing the programming button P

Fault	Fault No.	Display flashes irratically
Photocell actuated	6	Display 6
Programming terminated	7	Display 7
Defective RPM sensor	9	Display 8 + 1
Power limit	10	Display 8 + 2
Excess travel stop	11	Display 8 + 3
Photocell self-monitoring unit not o.k.	15	Display 8 + 7
Power limit self-monitoring unit	16	Display 8 + 7 + 1
Learned power limit	28	Display 8 + 7 + 6 + 5 + 2
Power limit response sensitivity	27	Display 8 + 7 + 6 + 5 + 1
Static current circuit interrupted	36	Display 1 - 8

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Initial operation

Power-operated windows, doors and gates for industrial or commercial use must be checked by a specialist after initial installation and then regularly at intervals of 1 year minimum.

Maintenance

The EST 24/25 garage door operator is virtually maintenance-free. However, all movable parts of the door and operator system should be checked regularly and kept in an easily movable condition. The "OPEN" and "CLOSE" automatic cut-out settings should be checked regularly. The door must be easy to operate manually.

Technical data:

EST 24/25

Sliding Gate Operator

Connected loads:

230 V, 50 Hz
2.5 A
Short-time duty 4 mins.

Door travel speed:

0,18 m/s

ZPush and pull force:

800 N

Opening phase (4 m gate width):

approx. 22 secs.



Automatic cut-out:

Electronic power limit through microprocessor and RPM sensor.

Automatic timer:

With additional relay for signal lights connection and photocell to monitor the through-traffic area (both items available as accessories). Warning phase adjustable from 2 to 70 seconds. Open phase adjustable from 5 - 255 seconds.

Control voltage:

Low voltage - 24 V DC.

Release:

Through claw coupling integrated into the drive unit with SW 17 ring spanner.

Temperature tolerance:

- 20° C bis 60° C

Protection category:

IP 65