

## **Roto** E-Tec DoorDrive

The concealed swing door drive for doors

Installation, maintenance and operation instructions  
for timber and aluminium doors



**Imprint**

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## Risk assessment

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This manual contains important information and instructions for safe operation.







This manual also contains binding guidelines to ensure that the duty to instruct is observed through to the end-user.

The information and instructions in this manual refer to the Roto E-Tec DoorDrive products.

This manual should be stored in such a manner that it can be quickly used, if needed.

### Additional markings

The following signs are used in this manual to highlight handling directives, results, lists, references and other elements:

Marking	Explanation
	Drill holes
	Hardware components
	Action steps
	First level of hierarchy in a list
	Unordered list (second level of hierarchy)
	(Cross) reference in tables
Refer to page 12	(Cross) reference in the text

The figures show DIN right-hand versions. All dimensions stated in mm. Otherwise the values are indicated.

### Copyright protection

The contents of this manual are protected by copyright. It is permissible to use these contents when working with the hardware. Any usage over and beyond this is not permitted without written permission from the manufacturer.

The information in this document is intended for the following target groups:

**Hardware dealers**

The “hardware dealers” target group includes all companies/persons who purchase hardware from the hardware manufacturer to resell it without the hardware being modified or subjected to further work.

**Door manufacturers**

The “door manufacturers” target group includes all companies/persons who purchase hardware from the hardware manufacturer or the hardware dealer and install it into doors.

**Building element dealers/installation companies**

The “building element dealers” target group includes all companies/persons who purchase doors from the door manufacturer in order to sell these on and to install them into a building development without modifying them.

The “installation company” target group includes all companies/persons who purchase doors from the door manufacturer or the building element dealer in order to install them into a building development without modifying them.

**Builders**

The “builder” target group includes all companies/persons who order doors for installation into their building project.

**End-users**

The “end-users” target group includes all persons who operate the installed doors.

### **Responsibility of hardware dealer**

The hardware dealer must forward the following documents to the door manufacturer:

- Catalogue
- Installation, maintenance and operation instructions

### **Responsibility of the door manufacturer**

The door manufacturer and the customer must conduct a risk assessment (refer to page 45 - 49) in accordance with DIN EN 16005:

- Installation, maintenance and operation instructions

The manufacturer must ensure that the end-user is provided with the documents and information intended for them, in printed format.

### **Responsibility of specialised dealer/installation company**

The specialised dealer must forward the following documents to the builder, even when a subcontractor (installation company) is acting as an intermediary:

- Maintenance and operating instructions (with the focus on hardware)

The specialised dealer and the customer must conduct a risk assessment (refer to page 45–49) in accordance with DIN EN 16005.

### **Responsibility of builder**

The builder must forward the following documents to the end user:

- Maintenance and operating instructions (with the focus on hardware)
- Specifications/information for end-users (VHBE)

In this manual, safety information is indicated by a symbol. The safety information is introduced by a key word that indicates the severity of the danger.



**DANGER!**

This combination of symbol and signal word indicates an imminently hazardous situation, which may lead to fatality or serious injuries, if it is not avoided.

---



**WARNING!**

This combination of symbol and signal word indicates a potentially hazardous situation, that may lead to fatality or serious injuries, if it is not avoided.

---



**CAUTION!**

This combination of symbol and signal word indicates a potentially hazardous situation, which may lead to minor or light injuries, if it is not avoided.

---



**NOTE!**

This symbol and signal word indicate a potentially hazardous situation, which may lead to property or environmental damage if it is not avoided.

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All the details and information in this document have been compiled based on the relevant standards and regulations, and state of the art development, along with many years of knowledge and experience.

The hardware manufacturer shall not accept liability for damage resulting from:

- Failure to comply with this document and all product-specific documents and related applicable directives (refer to the chapters on Safety and Stipulated Use).
- Non-stipulated use/misuse (refer to the chapters on Safety and Stipulated Use).
- Inadequate invitation to tender, failure to comply with the installation instructions.
- Forced opening / closing of the door.
- Increased soiling.

Claims by third parties against the hardware manufacturer on the ground of damages resulting from misuse or failure to follow the instruction obligation on the part of the hardware dealer, the door manufacturer, and of the specialised dealer or the builder are transferred accordingly.

The undertakings agreed in the delivery contract, the general terms and conditions, the hardware manufacturer's delivery conditions, and the legal regulations applicable at the time of concluding a contract are effective.

The warranty covers original Roto components only.

Subject to technical modifications conducted as part of the improvement process for performance characteristics and further development.

#### Roto E-Tec DoorDrive

- Is an electromechanical swing door drive
  - It is used solely for opening and closing doors with a sash weight up to a max. 120 kg
  - It has an operating voltage of 12V
  - Fulfils the low-energy requirements of DIN EN 16005
  - Is not suitable for use in escape routes and with fire protection doors
- Roto E-Tec DoorDrive is an aid which closes the door, but which does not lock it. The swing door drive is therefore not a theft-deterrent device and as such it does not absolve the user from his/her obligation to lock the door using the door lock.

Certification of the door system as per DIN EN 16005 is only valid with power supply units certified in accordance with EN 60335.

Stipulated use also includes adhering to all the specifications in the product-specific documents, such as:

- These installation, maintenance and operation instructions
- Product catalogues
- Information and specifications of the profile manufacturer (e.g. light metal profiles etc.)
- The valid national laws and directives

Any type of use that goes beyond or differs from the stipulated use shall be regarded as misuse.



#### **WARNING!**

#### **Danger from misuse, improper installation and improper initial operation**

Misuse and incorrect installation of hardware can result in hazardous situations.

- Never use combinations that have not been approved by the hardware manufacturer.
- Never use accessories that are not original products or that have not been approved by the hardware manufacturer.
- Only those control elements, settings or procedures described in this documentation should be used. (Control elements, settings or procedures that are not described in this documentation may cause electric shocks, hazards through electrical voltages / currents and/or hazards through mechanical processes.)

---

The following safety instructions are in accordance with DIN EN 16005, which regulates the safety specifications pertaining to automatic door systems as per the Machinery Directive (2006/42/EG).

Avoidance of any hazard is always preferable to securing the hazard.

The door equipped with Roto E-Tec DoorDrive is driven by a so-called low-energy drive. In other words, the energy of the automatically-moved doors is not any more than 1.6 Joules. This amount of energy is deemed to be non-critical for a group of users that is familiar with the operating principle of the driven door.

**WARNING!**

**Do not let children play with the regulation/control equipment.**

Keep the remote control unit out of the reach of children.

**WARNING!**

**Handling electrical equipment**

- All work on electrical systems may be performed by electricians specialists (electricians) only.
- Never insert metal objects into the Roto E-Tec DoorDrive openings, otherwise there is a risk of electric shock.
- If the Roto E-Tec DoorDrive is mounted into a metallic door sash, then the door leaf has to be properly grounded.

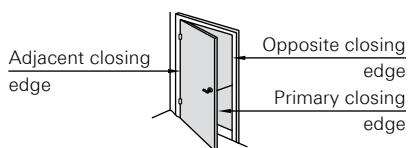
**NOTE!**

**Professional installation and diligent maintenance are central components of door reliability and safety.**

A professional installation and diligent maintenance are central components of door reliability and safety. In the information and examples listed here every attempt has been made to take a variety of the practical instances into consideration. Nevertheless no warranty can be given here for their completeness. If you are interested in any additional information, please contact your Roto processor.

**Hazards on closing edges and moving components**

The safety instructions should highlight the possible hazard points on power-operated doors, and show the affected safeguards or design requirements.

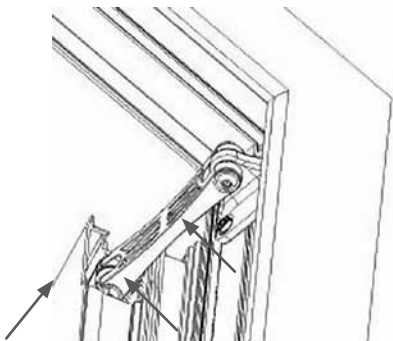
**DANGER!**

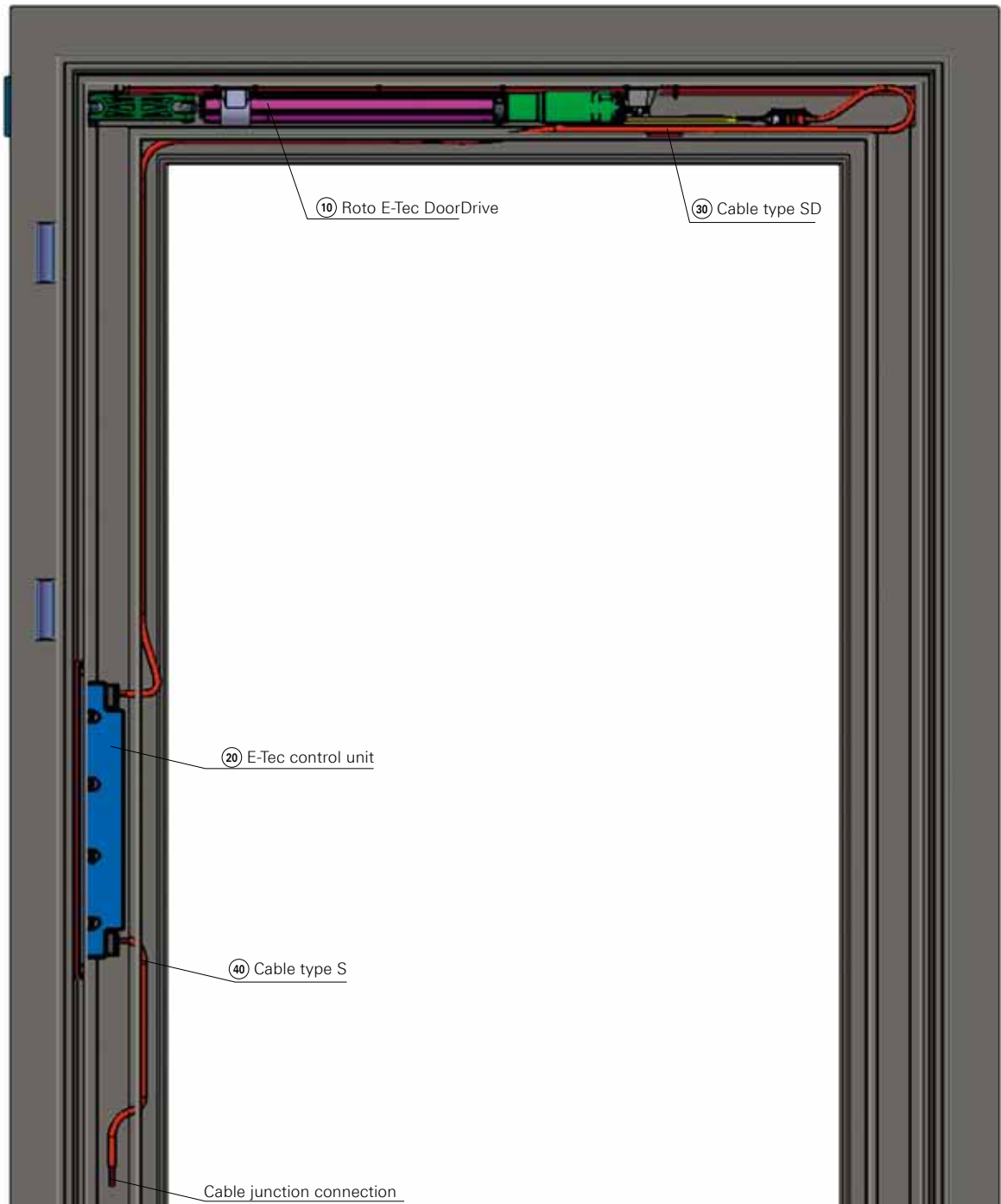
- There is a risk of crushing, shearing, bumping and pulling-in on the various closing edges on the automatic doors.
- There is a risk of crushing and shearing on the moving components of the door drive and the linkage system.

**Residual risk**

Depending on the structural conditions, door variants and safeguard options, residual hazards (e.g. crushing, force-limited impacts) cannot be ruled out.

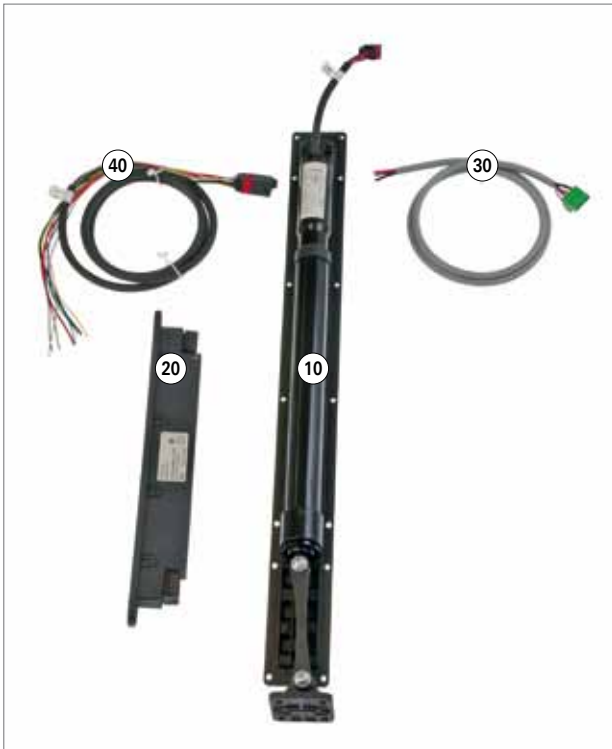
The hazard points that exist on every (even manually driven) Turn-Only sash door at the adjacent closing edge are generally known to all door users. This cannot be influenced by the swing door drive manufacturer.







## Scope of delivery for Roto E-Tec DoorDrive



## Scope of delivery

Pos.	Designation	Material no.
⑩	Roto E-Tec DoorDrive	<b>637922</b>
⑫	Roto E-Tec DoorDrive control unit	<b>637923</b>
⑬	Cable type SD length 1.5 m	<b>637924</b>
⑭	Cable type S length 1 m	<b>637957</b>
	Pluggable cable junction, 8-pin (not depicted)	<b>637956</b>
	Power supply unit 13 V for Roto E-Tec DoorDrive (not depicted)	<b>637955</b>
	Counterplate 60x55x5 mm incl. screws (not depicted)	<b>637958</b>

<b>Power supply unit</b>	<b>INPOTRON PSU-4351-09</b>
Door sash weight	Max. 120 kg
Door material	Aluminium and timber
Door panel	Interior or concealed sash
Sash width	Min. 700 to 1200 mm
Sash height	Min. 1600 to 2350 mm
Door opening angle	Max. 105°
Number of door hinges	Min. 3 pieces (2 x at top / 1 x at bottom) depending on type, poss. 4
Cable junction	Pluggable cable junction, 8 pin



**NOTE!**

At least 3 door hinges (2 x at top / 1 x at bottom) must be used. The door hinges must fulfil the Class 14 requirements in accordance with EN 1935.

**Overload protection**

To avoid any damage to the door and/or the swing door drive through slamming through extreme manual force or wind power, the swing door drive is equipped with a brake function.

If the door is moved at too fast a speed, the swing door drive is actively braked until the door comes almost to a standstill again.



**Einbauerklärung  
für eine unvollständige Maschine  
nach der EG-Richtlinie 2006/42/EG (Anhang II B)**

***Declaration of incorporation  
for a partly completed machinery  
in accordance of EC – Directive 2006/42/EC (annex II-part B)***

Hersteller  
*manufacturer* Roto Frank AG  
Wilhelm-Frank-Platz 1  
D-70771 Leinfelden-Echterdingen

Wir bestätigen, dass die Konformität des nachstehend bezeichneten Produktes:  
*We confirm herewith, that the conformity of the following designated product:*

Produktbezeichnung  
*product designation* E-Tec DoorDrive

Typenbezeichnung  
*type designation* C12844

Seriennummer, Baujahr  
*serial number, year of manufacture* siehe Typenschild  
*according to identification plate*

alle grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG erfüllt, soweit es im Rahmen des Lieferumfangs möglich ist. Ferner erklären wir, dass die speziellen technischen Unterlagen, gemäß Anhang VII Teil B dieser Richtlinie, erstellt wurden.  
*all essential requirements of the Machinery Directive 2006/42/EC are met, as far as it is possible, according to the scope of supply and services. We also declare, that the relevant technical documents, referred to in annex VII, part B of this directive, have been created.*

Folgende grundlegende Anforderungen kommen zur Anwendung:  
2006/42/EG, Anhang I, allgemeine Grundsätze;  
2006/42/EG, Anhang I 1, grundlegende Sicherheits- und Gesundheitsanforderungen  
*The following basic requirements are applied*  
2006/42/EG, annex 1, general principles;  
2006/42/EG, annex 1 1, general health and safety requirements

Die unvollständige Maschine entspricht zusätzlich den Bestimmungen der Richtlinie 2004/108/EG über elektromagnetische Verträglichkeit. Die Schutzziele der Richtlinie 2006/95/EG über elektrische Betriebsmittel werden eingehalten.  
*The partly completed machinery also complies with the provisions of Directive 2004/108/EC relating to electromagnetic compatibility. The safety objectives of directive 2006/95/EC on electrical resources are respected.*

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen gemäß Anhang VII B ist die Firma Roto Frank AG, Anschrift siehe oben.  
*Authorized representative to compile the relevant technical documents referred to in annex VII B, is the company Roto Frank AG, address see above.*

Wir verpflichten uns, den Marktaufsichtsbehörden (auf begründetes Verlangen), die technischen Unterlagen zu der unvollständigen Maschine per E-Mail oder Post zu übermitteln.  
*We obligate ourselves, to submit the national authorities (on a well-founded request), the relevant information about the partly completed machinery by e-mail or post.*

Die unvollständige Maschine darf erst dann in Betrieb genommen werden, wenn ggf. festgestellt wurde, dass die Maschine oder Anlage, in welche die unvollständige Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2006/42/EG über Maschinen entspricht und die EG Konformitätserklärung gemäß Anhang II Teil A ausgestellt ist.  
*The partly completed machinery must not be put into operation, if determined necessary was, that the machine or installation, in which the partly completed machinery has to be installed, should comply with the provisions of Directive 2006/42/EC on machinery and the EC declaration of conformity is issued in accordance with Annex II part A.*

Leinfelden-Echterdingen, 29.04.13

Ort, Datum  
*place, date*

  
Vorstand  
*member of the board of directors*

## Installation steps overview

1. Preparing profiles (milling, drilling)
2. Routing lines in profile
3. Installing swing door drive
4. Installing control electronics
5. Installing door
6. Conducting function test
7. Connecting power supply unit and additional peripherals/house wiring (electrician)

Steps 1 to 4 are conducted at the factory. Steps 5 to 7 are conducted at the building site or the door installation location.

## Preparation

When installing and positioning the door drive and its components in the door system, process the door profiles in line with the drilling and milling drawing available from Roto.

If the dimensions and tolerances in the drilling and milling drawing are not complied with, fault-free operation of the door drive cannot be guaranteed. Installation problems may also occur.

Mill out corner connector as far as required only. Make a corresponding corner bracket for reinforcement in the clearance.

Set the control to match the Roto configuration. (Refer to page 31). This programming step is best performed in advance, e.g. at the factory.

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### **NOTE!** **Installation sequence**

Install the wiring harness in the door sash before inserting the door panel.

The drill holes and milling must be conducted in accordance with the DIN ISO 2768-mK general tolerance.

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### **NOTE!**

Precautions should be taken when installing the door to ensure that any inadvertent opening beyond the maximum opening width is avoided, as otherwise the swing door drive could be damaged. An end stop must be fitted for the maximum opening position on site to ensure that the maximum opening angle (< 105° system specific) is not exceeded.

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### **NOTE!**

Sufficient clearance must be given between the frame and the sash at each point, as otherwise reliable closing and opening of the sash cannot be assured.

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### **NOTE!**

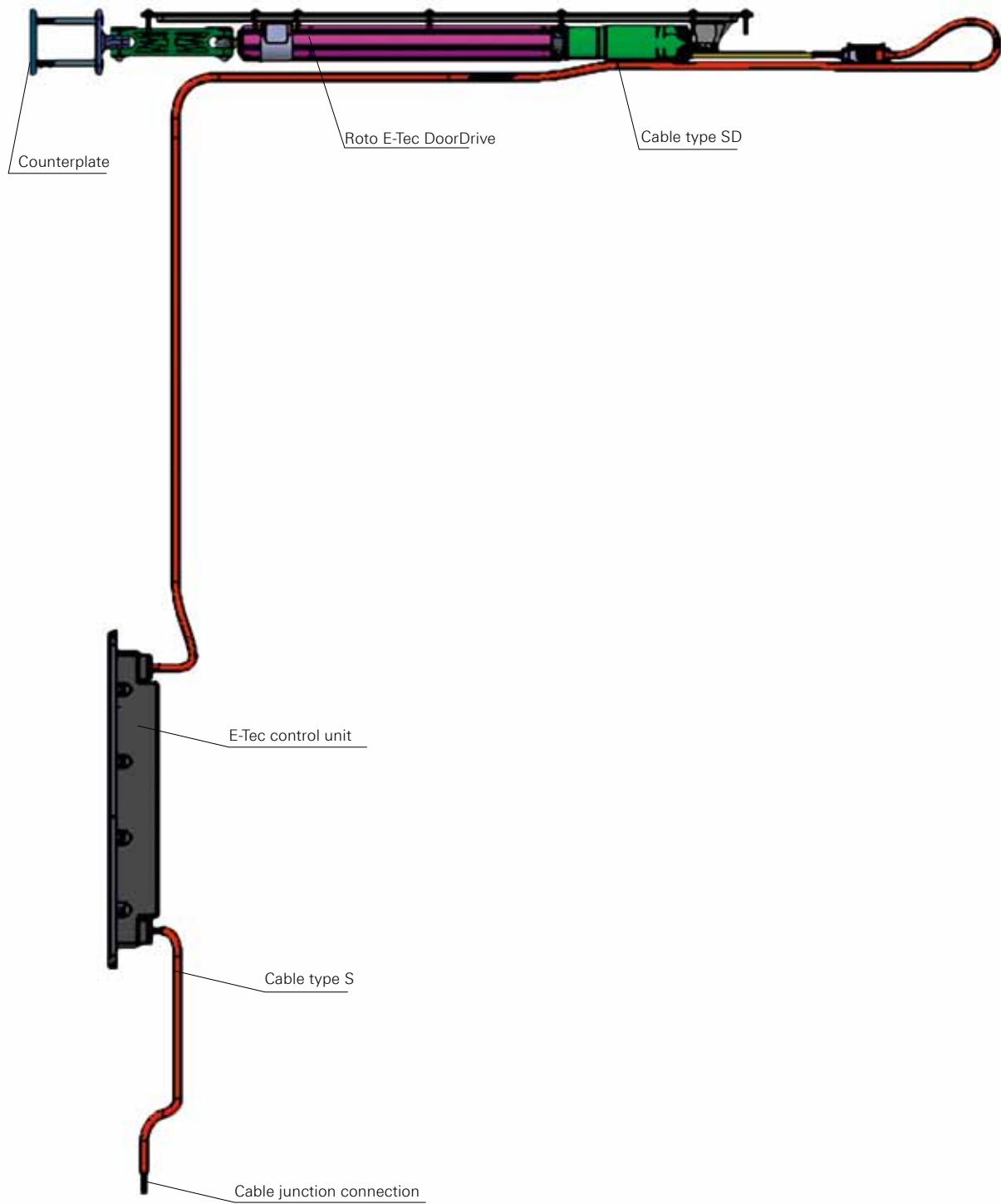
The sealing systems used must be capable of being sufficiently compressed to ensure that the sash is reliably closed.

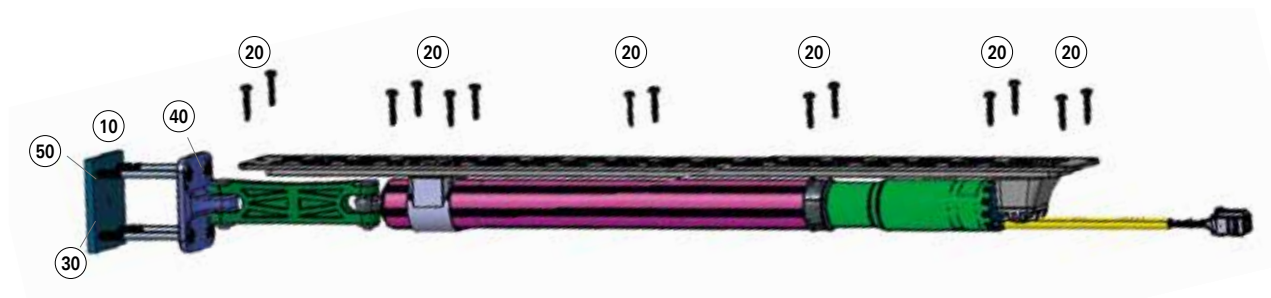
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The following drawing shows an overall view of the system.



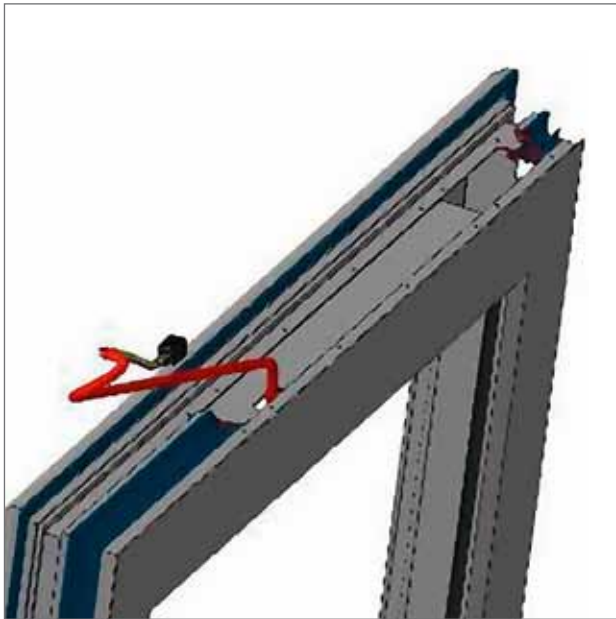


**Fastening means**

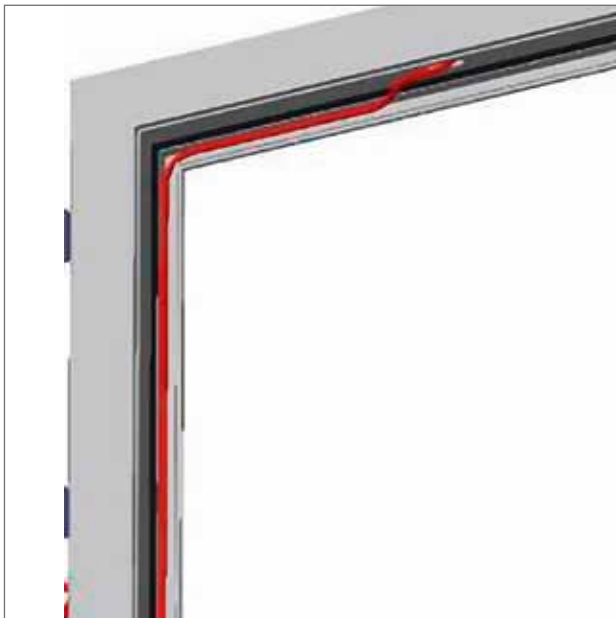
Pos.	Pcs	Designation	Description
10 <sup>2)</sup>	1	Counterplate t= 5 mm	60 x 50 x 5
20	14	Countersunk self-drilling screw (for aluminium fastening)	DIN 7982 C 3.9x19
20a <sup>1)</sup>	14	Spax countersunk screws with Torx TX20	4x40
30 <sup>2)</sup>	4	Allen screw	DIN 6912-M5x60-8.8
40 <sup>2)</sup>	4	Washer	DIN 125-A 5.3-140 HV
50 <sup>2)</sup>	1	Fillister head screw	DIN 7504 N 3.5x32
60	2	Countersunk self-drilling screw	DIN 7504 P 4.2x32

1) To fasten the door drive in a timber door (20) is replaced by (20a).

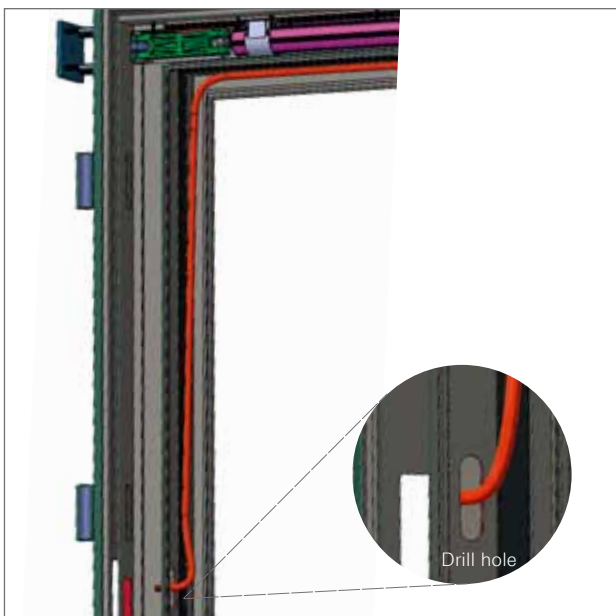
**NOTE!**  
Position 10, 30, 40 and 50 are included in the scope of supply for **637958**.



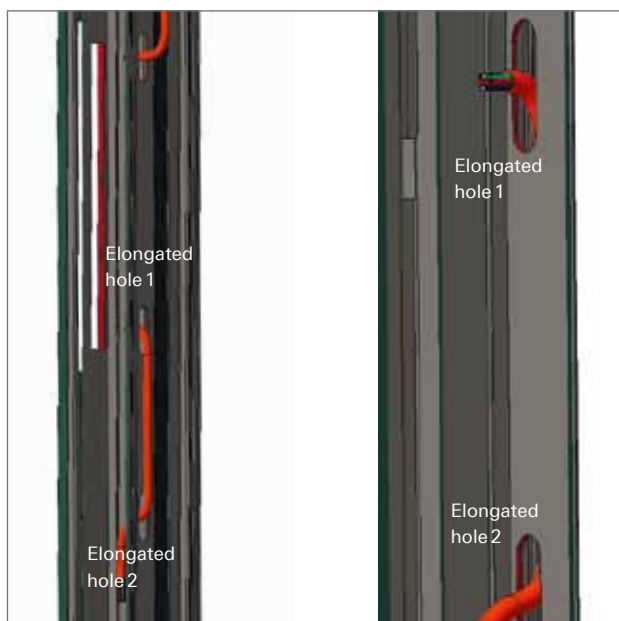
1. Pull cable type SD with the free end at the top through the milled recesses in the door sash into the interior (door panel). Pull cable type SD in far enough until a protrusion of approx. 400 mm still projects beyond the upper milled recess.



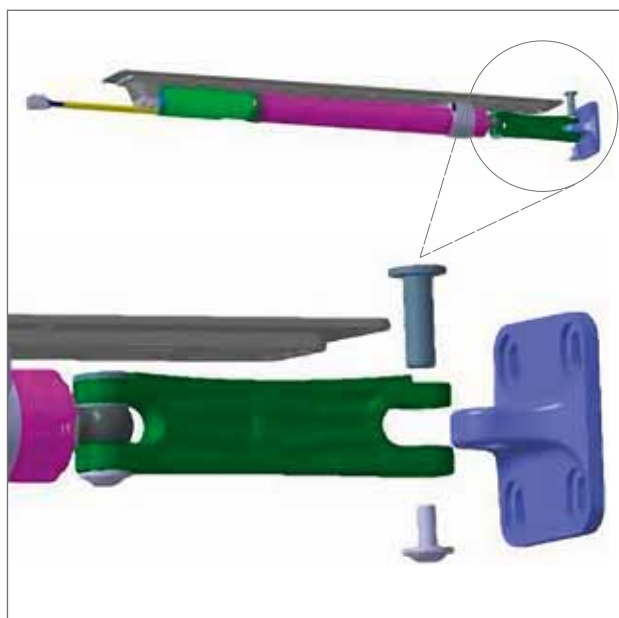
2. Route cable type SD into the glazing rebate up to the milled recess for the electronic unit. Ensure that the cable here has sufficiently large bending radii. Alternatively, the cable can also be routed into the profile chamber. To do this, the cable must however have been inserted before the corner connector is made.



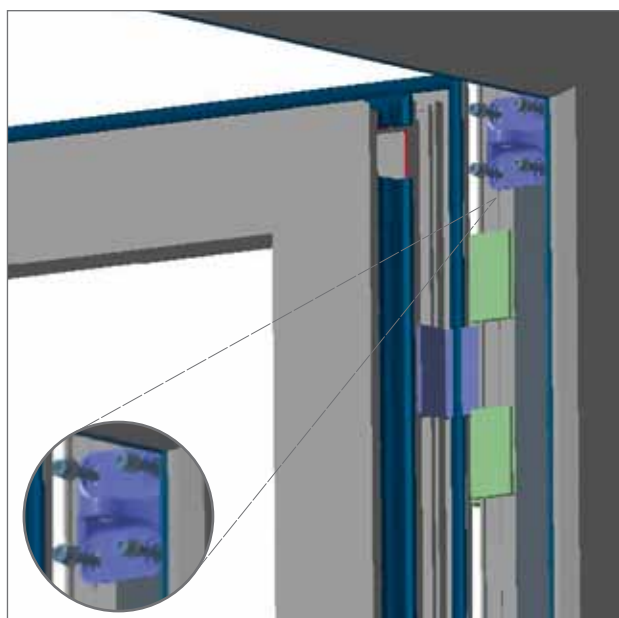
3. Route the cable type SD through the bore in the glazing rebate into the profile chamber. Seal the drill holes to the glazing rebate after routing the cable with vapour diffusion-proof adhesive tape.



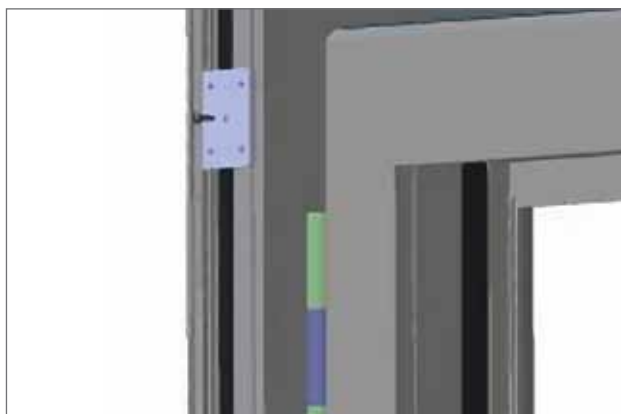
4. Route cable type S through the specified elongated hole 1 into the glazing rebate and then through elongated hole 2 back into the profile chamber. Seal the drill holes after connecting the electronic unit using vapour diffusion-proof adhesive tape.



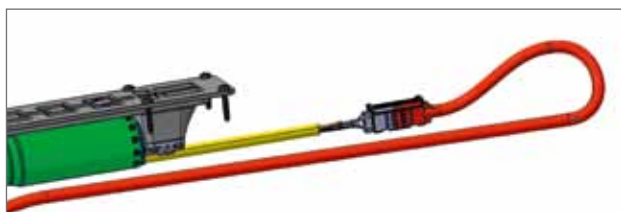
5. To install the door drive into the door sash, the assembly must be separated. To do so, release the fillister head screw and remove the threaded bushing.



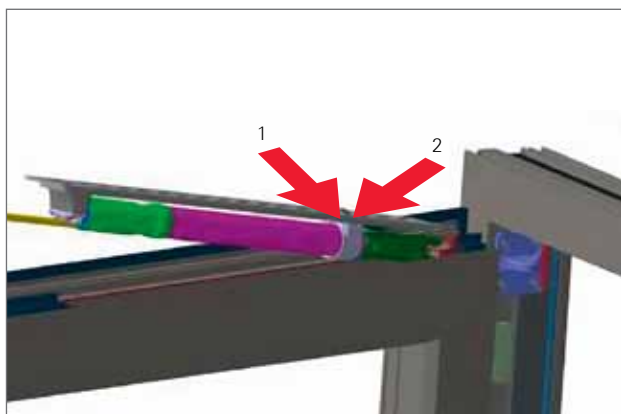
6. Open door sash to max. 90° and bolt the angle bracket using four Allen screws (30 Page 18) and washers (40 Page 18) into the specified drill holes in the frame profile to the counterplate (tightening torque max. 3Nm). When positioning the angle bracket make sure that the Allen screws (30 Page 18) are located in the centre of the elongated holes of the angle bracket. The elongated holes can be used for making positioning corrections if the door sash should sag.



7. Secure the counterplate using the self-drilling screw (Ⓢ Page 18).



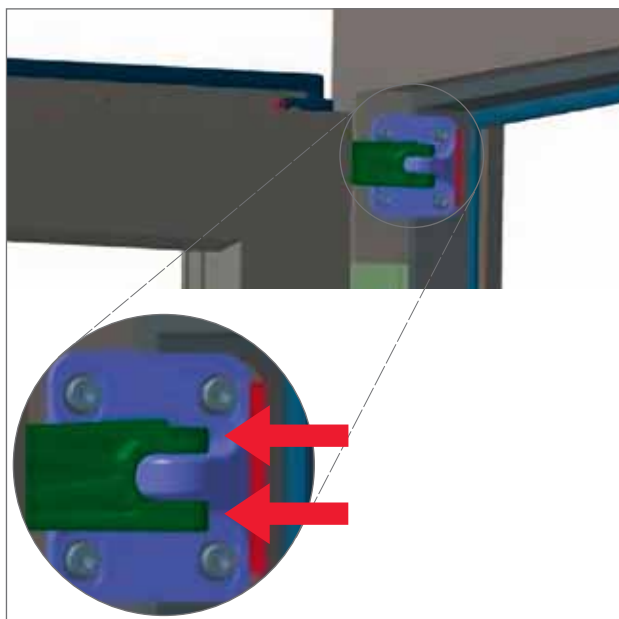
8. Fasten plug-and-socket connection between cable type SD and door drive connector.



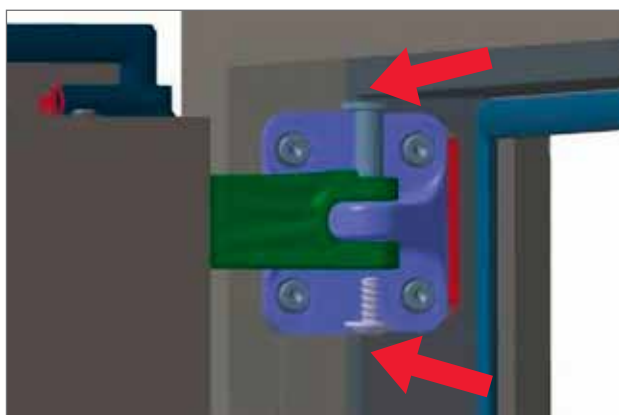
9. Apply light coating of grease to complete circumference of guide tube on flexible bearing on both sides (1+2) using Klübersynth LI 44-22 or Berulub FR 43  
Insert door drive from above into milled recess of door sash.  
Make sure when inserting, that the cable type SD is not damaged or kinked.



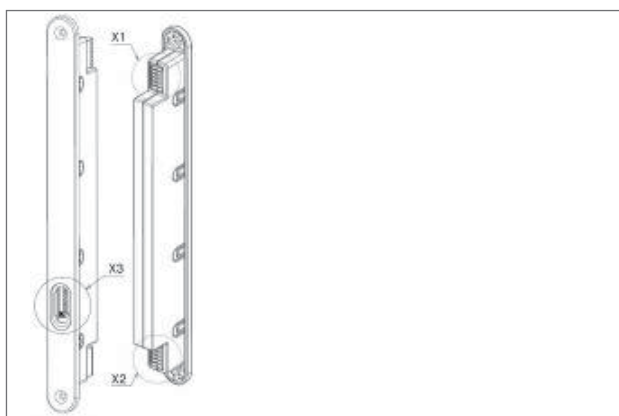
10. Screw the door drive from the top using 14 fixing screws (Ⓢ Page 18) onto the door sash.  
(Tightening torque max. 1.4Nm)



- 11.** Manually pull the coupling rod approx. 80 mm out of the door sash. Then, by moving the door sash, join the coupling rod with the angle bracket. When joining, make sure that the system remains free of tension and that the gap widths between the coupling rod and the angle bracket are spaced equally apart.

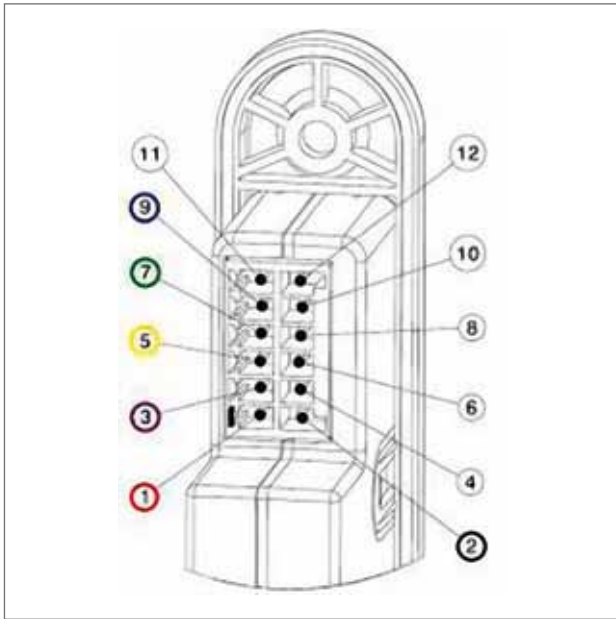


- 12.** Slide the threaded bushing from above into the coupling rod and through the angle bracket. Fasten this in place using the fillister head screw. When bolting together, press with the finger from above onto the threaded bushing. (Tightening torque max. 2.5 Nm)



- 13.** The two plug-and-socket connectors on X1 and X2 cannot be interchanged, and they have reverse-polarity protection. Therefore, make sure that they are wired correctly.

- Connect to X1 cable type SD to Roto E-Tec DoorDrive.
- On X2, connect cable type S to the cable junction.

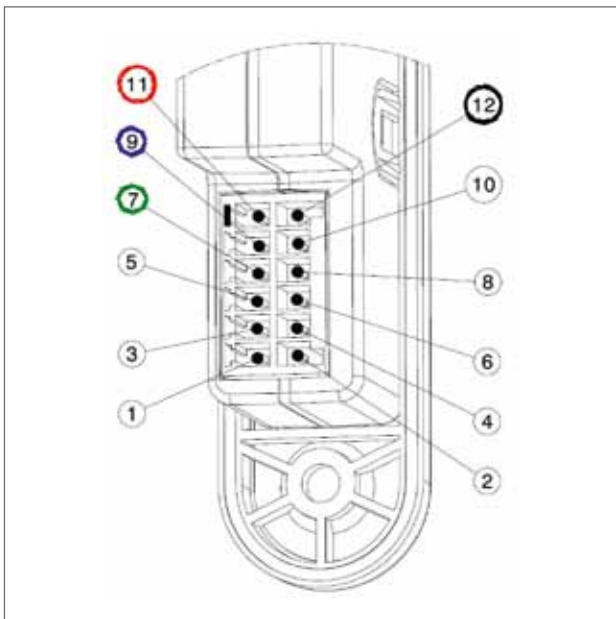


14. Strip the required wires (refer to Table 1 or sketch on left) on cable type SD to 9 mm. Connect the stripped wires to the plug-and-socket connector X1 denoted by the white dot, as per Table 1. The contacts are numbered at the side on the connector. The wires are coloured.

**NOTE!**  
 When shortening the cable it is advisable to strip the insulation for an area of at least 5 cm, because the cable in the stripped insulation area is flexible, this in turn enables the excess length required in the profile to be simply cleared away.

**Table 1: Assignment of plug-and-socket connector X1 to the door/to the spindle drive on cable harness 1**

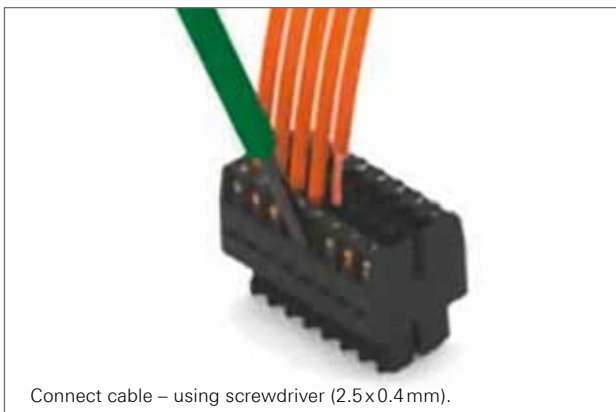
Contact	Description	Abbreviation	Wire colour
①	Motor +	M+	Red
②	Motor -	M-	Black
③	Hall GND	HGND	Violet
④			
⑤	Hall Vcc	HVCC	Yellow
⑥			
⑦	Hall Speed 2	HS2	Green
⑧			
⑨	Hall Speed 1	HS1	Blue
⑩			
⑪			
⑫			



15. Connect the second plug-and-socket connector X2 to cable type S as per Table 2 (similar to first plug-and-socket connector).

**Table 2: Assignment of plug-and-socket connector X2 to house wiring/lock to cable type SD**

Contact	Description	Abbreviation	Wire colour
①	Lock signal	SSIG	
②	Lock ground	SGND	
③	Lock supply	S+	
④	Lock feedback	SRM	
⑤	Driver output	OFF	
⑥	Antenna	ANT	
⑦	Signal 1	IN1	Pink
⑧	Signal 1 AC	IN1AC	
⑨	Signal 2/	IN2	Blue
⑩	Signal 3	IN3	
⑪	Supply voltage	12V	Red
⑫	Ground	GND	Black

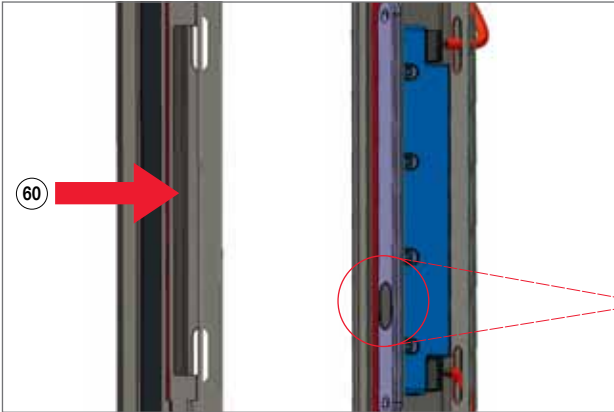
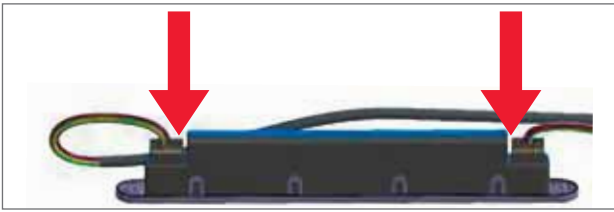


To jam the plug-and-socket connector in place, insert a screwdriver at an incline onto the outer visible spring in the terminal strip. The screwdriver opens the spring contact and sticks there in place (it can then be released).

Insert the wire and remove the screwdriver again. The contact numbering is printed on to the side.

The two connectors are coded and they cannot be interchanged. Therefore, when connecting the lines make sure that the correct plug-and-socket connector has been selected.





16. Join the two connectors to the control unit.

17. Insert the electronic wiring for the door drive into the designated milled recess in the door sash. When doing so make sure that the cable is not kinked or damaged.

Then, using the two self-drilling screws (Ⓜ Page 18), connect the door drive electronics to the door frame.



**CAUTION!**

The opening for programming the control system must be down.

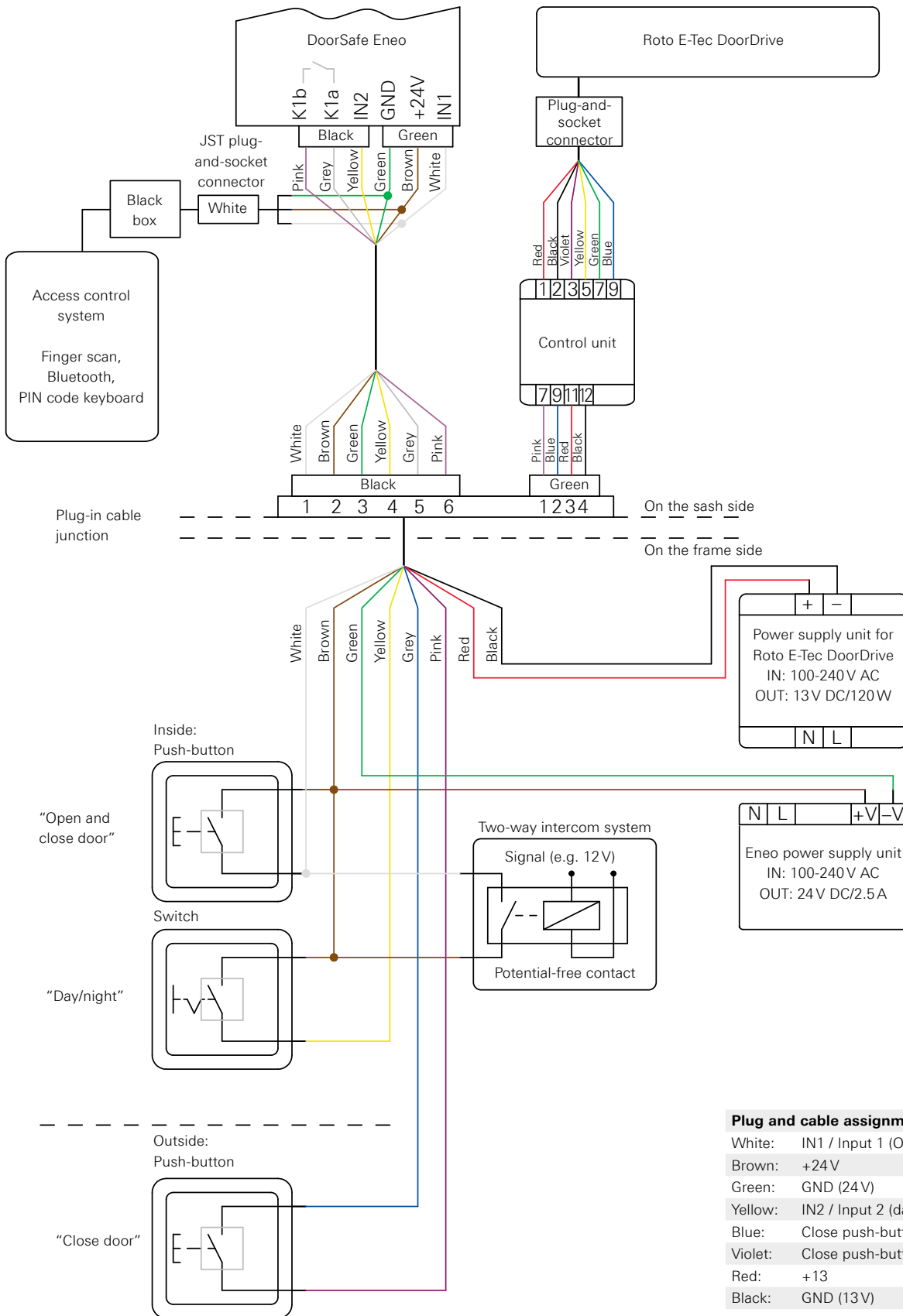


**NOTE!**

When installing the door, precautions have to be taken to ensure that any unintended opening over and beyond the maximum opening angle is avoided – risk of damage to the swing door drive!

- The maximum opening angle (< 105°) must not be exceeded.
- The specified position of the retaining bracket relative to the swing door drive must be maintained. The coupling rod must not be tensioned when it is installed.
- The specified wiring must be maintained exactly as stipulated.

Connection diagram for Eneo C/CC with Roto E-Tec DoorDrive



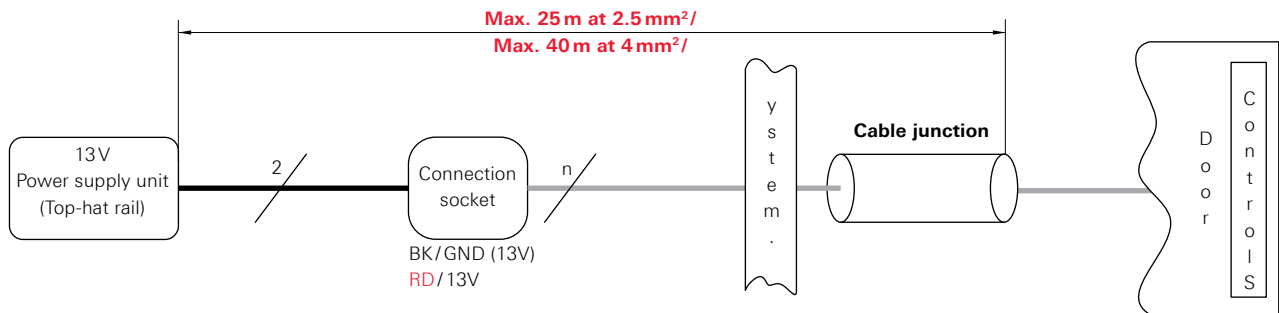
**Plug and cable assignment**

White:	IN1 / Input 1 (OPEN)
Brown:	+24V
Green:	GND (24V)
Yellow:	IN2 / Input 2 (day/night)
Blue:	Close push-button
Violet:	Close push-button
Red:	+13
Black:	GND (13V)



**NOTE!**

If a 24 V voltage is applied to terminal 4, the lock is in the "day operation mode". If voltage is not applied, the lock is in the "night operation mode" (optional).



For reliable operation, including with door blocking and a high load, a power supply line resistance is required from the power supply unit to the cable junction of less than  $0.3\Omega$  for an output wire.

**NOTE!****House wiring**

To ensure that correct operation is possible the power supply line from the 13 V power supply unit for the control system must fulfil specific requirements. Because of the power transfer involved, a wire cross-section of at least  $1.5\text{ mm}^2$  is recommended. Orientation is provided here by the illustration.

### Initial operation steps

1. Preparation
2. Connect Eneo lock
3. Convert to Roto setting
4. Teach-in closed position
5. Teach-in open position
6. Optional: conduct function test
7. Set up delivery status

Initial operation is only possible with the INPOTRON PSU-4351-09 power supply unit.



#### CAUTION!

Initial operation (electrical connection) of the door with a swing door drive may be performed by skilled electricians specialist (electrician) only.



III. 1

### Parameter configuration using DIP switch

Using the DIP switch (III. 1) under the rubber plug enables various settings for the door to be made to the electronic circuits on the hinge side.

Select the required configuration and confirm the set value. To do so, press one of the two push-buttons for a programmed remote control or a connected operation mechanism (push-button, etc.) for longer than 5 seconds.

Acceptance of the setting is indicated by acoustic feedback. The number of signal tones heard is equivalent to the configured value.

Five short beeps indicate an invalid setting.

Once all the required settings have been made, the DIP switches must be reset to "0" (i.e. "00000000").

The following settings can be made:



#### CAUTION!

If one of the eight DIP switches is not set to "0", electrical control of the swing door drive is not possible.

## 1. Preparation

Remove the rubber plug of the elongated hole over the DIP switches using a finger nail or a screwdriver. The DIP switches are now visible, refer to illustration.

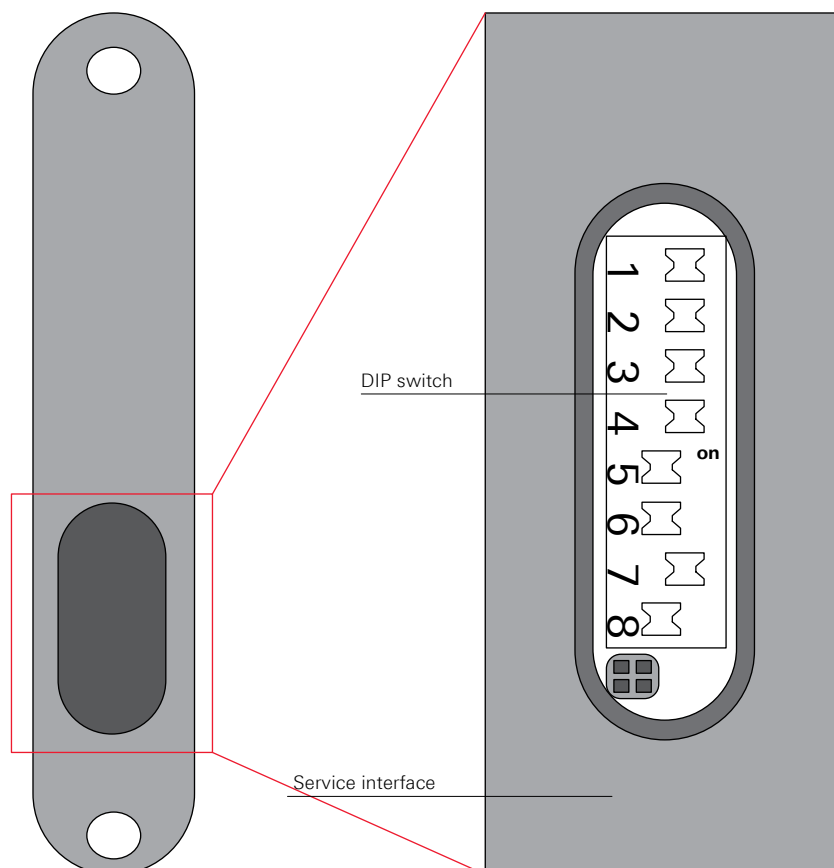


Illustration of DIP switch position

### Control logics

Select DIP switches 1–4 in required top group.  
Change DIP switches 5–8 function for top group.

0 = OFF 1 = ON

Prepare power supply unit (Status: switched off). Connect the red wire of the cable harness to the positive output. Connect the black wire to the negative output.



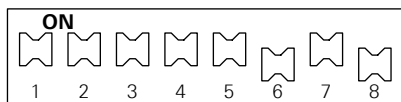
Illustration of power supply unit with connection terminals



### NOTE!

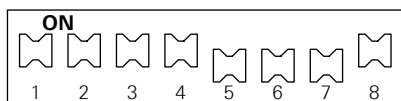
To be conducted by electric specialist (electrician) only.

The default position for the DIP switch is OFF, this position has to be adopted again following every action.



**2. Connecting multi-point locking system**

Connect Eneo C/CC multi-point locking system with the operation mechanism as per the wiring diagram to the power supply units. Switch on power supply units or plug connector into power socket.



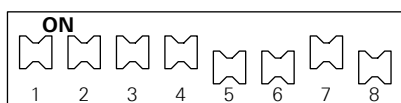
**3. Converting to Roto setting**

Activate Roto settings. To do so, switch on power for control system and set DIP switches to 1111.1010. Confirm by pressing one of the operation mechanisms for 3 seconds.



**NOTE!**

Operation mechanisms are Eneo hand-held transmitters (they have to be programmed beforehand, refer to Eneo C/CC IMO\_190 installation instructions or refer to page 26).



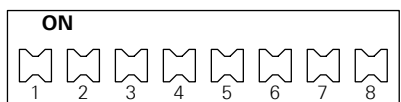
**4. Teaching-in closed position**

Set DIP switches to 1111.0001. Close door and use hand to keep it closed. Press an operation mechanism for 5 seconds until acoustic feedback is issued indicating the action was successful.



**NOTE!**

Use hand to keep door closed until the acoustic feedback is heard.



**5. Teaching-in open position**

Manually open the door to gain access to the DIP switches. Set the DIP switches to 1111.0010, move door to the required open position and hold it there. Press an operation mechanism for 3 seconds until acoustic feedback is issued indicating the action was successful.



**NOTE!**

A fault reason can also be an error in step 4. Set the DIP switches to position 0000.0000.

**6. Conducting optional function test**

Check closing and opening of the door to match the selected settings or configurations. The operation mechanism should be able to initiate the door opening and door closing process.

**8. Setting up delivery status**

Set up required delivery status. For example:

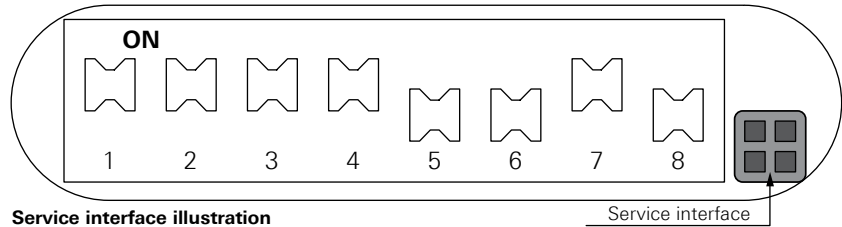
- Disconnect the power supply unit from the mains, detach connection to the door
- Insert rubber plug into cover opening
- Stow away the remote controls and supply unit



A service dongle is required for certain individual settings (denoted by \* in the following text), which only the door manufacturer may make. Plug the service dongle onto the service connector. The correct function is indicated by the LED on the service dongle lighting up. All the other settings can be made by the end user.



Illustration of service dongle, the tab acts as a reverse-polarity protection



Service interface illustration

Roto settings are available in the tables in **bold**. These default values are replaced during initial operation in step 3.

**Individual setting**



**NOTE!**

All settings denoted by \* require a service dongle.

**1. Operating mode**

Setting operating mode on DIP switches 1–4 = 0000

DIP switch	Description	Feedback signal	Personal setting
0 0 0 0	<b>Normal operation</b> <b>Basic setting</b>		
0 0 0 0	1 1 1 1 Change to parameterisation mode = Activate serial interface		

**2. Push to close/Push to open**

Push to close or Push to open can be set to suit requirements.

In this function several options can be defined for the parameter as separate settings can be made for “Push to close/Push to open”. Push to open means that the door is automatically opened by approx. 10° following a manual impulse. Push to close is the same except the door closes here instead of opening.

Setting general functionality /comfort on DIP switches 1–4 = 0001

DIP switch	Description	Feedback signal	Personal setting
0 0 0 0	0 0 Feedback on current status	–	
	0 1 Push to close OFF	1	
	1 0 <b>Push to close ON</b>	2	
0 0 0 1	0 0 Feedback on current status	–	
	0 1 Push to open OFF	1	
	1 0 <b>Push to open ON</b>	2	
1 0	0 0 Feedback on current status*	–	
	0 1	1	
	1 0	2	

\* Placeholder

### 3. Actuation inputs\*

The door is equipped with three different actuation inputs to which various operation mechanisms (remote control, card reader, Bluetooth receiver, area push-button, etc.) can be connected to which the door will respond.

Various system response modes for each connected operation mechanism can be selected:

- Direct actuation: Door opens/closes immediately
- Authorisation: Connected operation mechanisms are processed as authorisation – the system is activated for a programmable period (enabled, authorised). Door movement is not actuated without other operation mechanisms.
- Authorised actuation: Connected operation mechanisms are only accepted as valid operation when authorisation has been issued.
- Immediate opening: Door opens or remains open
- Immediate closing: Door closes or remains closed
- Authorised opening: Door only opens when authorisation has been issued or it remains open
- Authorised closing: Door only closes when authorisation has been issued or it remains closed

Actuation input E1:

DIP switch	Description	Feedback signal	Personal setting
0 0 1 0	0 0 0 0	Feedback on current setting	–
	0 0 0 1	E1 not assigned	1
	0 0 1 0	E1 direct actuation	2
	0 0 1 1	E1 authorised actuation	3
	0 1 0 0	E1 authorisation	4
	0 1 0 1	<b>E1 direct actuation</b>	5
	0 1 1 0	E1 direct closing	6
	0 1 1 1	E1 authorised opening	7
	1 0 0 0	E1 authorised closing	8

Actuation input E2:

DIP switch	Description	Feedback signal	Personal setting
0 0 1 1	0 0 0 0	Feedback on current setting	–
	0 0 0 1	E2 not assigned	1
	0 0 1 0	E2 direct actuation	2
	0 0 1 1	E2 authorised actuation	3
	0 1 0 0	E2 authorisation	4
	0 1 0 1	E2 direct actuation	5
	0 1 1 0	<b>E2 direct closing</b>	6
	0 1 1 1	E2 authorised opening	7
	1 0 0 0	E2 authorised closing	8

Actuation input E3:

DIP switch	Description	Feedback signal	Personal setting
0 1 0 0	0 0 0 0	Feedback on current setting	–
	0 0 0 1	<b>E3 not assigned</b>	1
	0 0 1 0	E3 direct actuation	2
	0 0 1 1	E3 authorised actuation	3
	0 1 0 0	E3 authorisation	4
	0 1 0 1	E3 direct actuation	5
	0 1 1 0	E3 direct closing	6
	0 1 1 1	E3 authorised opening	7
	1 0 0 0	E3 authorised closing	8





#### 4. Programmable output\*

The door control is equipped with its own programmable output to which, e.g. the light in the input area is connected and where it can be configured such that it is switched on when the door is opened. A small LED lamp can also be connected, which lights up when authorisation has been issued.

It is also possible to configure the output so that it is only briefly actuated, in other words it flashes on and off briefly or it is permanently activated.



#### NOTE!

In the standard wiring the signal for the programmable output is not routed out of the door.

DIP switch	Description	Feedback signal	Personal setting	
0 1 1 0	0 0	Feedback on current status	–	
	0 1	<b>General setting: Continuous signal as long as authorisation issued</b>	1	
	1 0	General setting: Continuous signal if not closed	2	
	1 1	General setting: Precision setting at bottom	3	
	0 1	0 0	Feedback on current status	–
		0 1	Signal when opening: None	1
		1 0	Signal when opening: Output activated for 0.5 seconds	2
		1 1	<b>Signal when opening: Output activated as long as actuation issued</b>	3
	1 0	0 0	Feedback on current status	–
		0 1	Signal when closing: None	1
		1 0	Signal when closing: Output activated for 0.5 seconds	2
		1 1	<b>Signal when closing: Output activated as long as actuation issued</b>	3

### 5. Authorisation period

Authorisation means that the door receives a pulse, which indicates to the door that the pulse transducers are authorised to operate the door.

The authorisation period enables the validity of an actuated authorisation to be defined. If the authorised operation mechanism is used, the authorisation is then cancelled. In other words, the operation mechanism has to be authorised again before each usage. The Roto setting for the authorisation period is one minute.

**Example:** DIP switch set to 01110111 (Roto setting): Following authorisation, the door has to be opened within a period of one minute. Operation during authorisation does not extend the authorisation period, but rather it cancels it. If the door is to then be closed again, authorisation has to be issued once more to enable the door to be closed within the one minute period.

DIP switch		Description	Feedback signal	Personal setting
0 1 1 1	0 0	0 0 Feedback on current setting	–	
		0 1 <b>Authorisation for activation period</b>	1	
		1 0 10 seconds	2	
		1 1 20 seconds	3	
	0 1	0 0 30 seconds	4	
		0 1 40 seconds	5	
		1 0 50 seconds	6	
		1 1 1 minute	7	
	1 0	0 0 1 minute 15 seconds	8	
		0 1 1 minute 30 seconds	9	
		1 0 1 minute 45 seconds	10	
		1 1 2 minutes	11	
	1 1	0 0 2 minutes 30 seconds	12	
		0 1 3 minutes	13	
		1 0 4 minutes	14	
1 1 5 minutes		15		



## 6. Acoustic signal transmitter

This option can be used to set whether you hear a signal or not when you issue the door with a command or not. The "Successful close signal" option enables you to choose whether an acoustic signal should be issued when the door latches shut or not. This is only possible for a lock equipped with feedback.



### NOTE!

**In the event of a fault, feedback is always issued in the form of an acoustic signal.**

In the "For start of actuation" setting, you will hear an acoustic signal once at the start of the process. If you choose "as long as the actuation", this signal is repeated until the process is completed. In other words, until the door is fully opened or closed.

You can also select this setting separately for the opening and closing process.

DIP switch	Description	Feedback signal	Personal setting
0 0	0 0 Feedback on current status	–	
	0 1 Signal for successful closing* OFF	1	
	1 0 Signal for successful closing* ON	2	
1 0 0 0	0 0 Feedback on current status	–	
	0 1 <b>Signal when opening: None</b>	1	
	1 0 Signal when opening: During start of actuation	2	
	1 1 Signal when opening: As long as actuation issued	3	
1 0	0 0 Feedback on current status	–	
	0 1 Signal when closing: None	1	
	1 0 <b>Signal when closing: During start of actuation</b>	2	
	1 1 Signal when closing: During start of actuation	3	

\* only effective for lock with feedback

## 7. Hold-open period

This setting can be used to define the period until the door is automatically closed. This is only valid however, when the door is electrically opened to its end position. The time in the table below indicates the timespan in which the door remains open until an automatic closing process is initiated.

DIP switch	Description	Feedback signal	Personal setting
0 0	0 0 Feedback on current setting (as per operation mechanism)	–	
	0 1 <b>Automatic closing inactive = Continuously open</b>	1	
	1 0 After 5 seconds	2	
	1 1 After 10 seconds	3	
0 1 1 1	0 0 After 20 seconds	4	
	0 1 After 30 seconds	5	
	1 0 After 40 seconds	6	
	1 1 After 1 minute	7	
1 0	0 0 After 1 minute 15 seconds	8	
	0 1 After 1 minute 30 seconds	9	
	1 0 After 1 minute 45 seconds	10	
	1 1 After 2 minutes	11	
1 1	0 0 After 2 minutes 30 seconds	12	
	0 1 After 3 minutes	13	
	1 0 After 4 minutes	14	
	1 1 After 5 minutes	15	

## 8. Crush guard

This setting is used to choose the resistance which has to act on the door before it stops an opening or closing process.

DIP switch		Description	Feedback signal	Personal setting
1 0 1 1	0 0	0 0	Feedback on current setting	–
		0 1	Light triggering (Door stops at slightest resistance)	1
		1 0	<b>Medium = Normal triggering</b>	2
		1 1	Heavy triggering (Door only stops for substantial resistance)	3

## 9. Reversing when closing\*

This defines how the door behaves if it is blocked when closing. This is only possible for closing. If the door encounters an obstacle when closing and the reversing function is switched on, it opens again somewhat and - after a brief pause - it tries to close again for a specified number of attempts. If the reversing function is switched off, the door stops at the position that it encountered the obstacle. When opening, the door comes to a standstill without any further attempt to open further.

The number of continuation attempts and the pause time each have a value that can be configured by Service (factory setting: 4 second waiting period, 2 continuation attempts). This value cannot be changed by the DIP switches.

DIP switch		Description	Feedback signal	Personal setting
1 1 0 0	0 0	0 0	Feedback on current setting	–
		0 1	Reversing on, without continuation after pause	1
		1 0	<b>Reversing on, with continuation after pause</b>	2
		1 1	Reversing off, without continuation after pause	3
	0 1	0 0	Reversing off, with continuation after pause	4



## 10. Fault memory

The fault memory stores the last 14 system faults. These faults can be called up by corresponding DIP switch settings.

Apart from this, the number of faults can be examined or all faults cleared.

DIP switch		Description	Feedback signal	Personal setting
1 1 1 0	0 0	0 0 <b>Feedback = Number of stored faults matches number of signals</b>		
		0 1 1. Display fault memory		
		1 0 2. Display fault memory		
		1 1 3. Display fault memory		
	0 1	0 0 4. Display fault memory		
		0 1 5. Display fault memory		
		1 0 6. Display fault memory		
		1 1 7. Display fault memory		
	1 0	0 0 8. Display fault memory		
		0 1 9. Display fault memory		
		1 0 10. Display fault memory		
	1 1	1 1 11. Display fault memory		
		0 0 12. Display fault memory		
		0 1 13. Display fault memory		
1 0 14. Display fault memory				
	1 1 Acknowledge / delete all faults			

Fault codes for faults at position 1-14 (Number of tones issued)	Fault
1	RAM fault
2	ROM fault
3	Hall fault
4	Undervoltage fault
5	Excess current fault
10	Fault memory overrun

## 11. Special functions

Teach-in of zero position, usually this is the closed door position.

Teach-in of maximum opening angle for the door, the angle which describes how far the door swings open when electrically opened. These two settings must undergo teach-in before being used for the first time!

Similarly, the configurations have to be reset to factory settings.

DIP switch		Description	Feedback signal	Personal setting
1 1 1 1	0 0 0 1	Programming the zero position		
	0 0 1 0	Programming the maximum opening angle		
	1 1 1 0	Resetting to factory settings*		

**Feedback**

**Acknowledgement key:** An acknowledgement key is deemed to be any operation mechanism connected to the control system, which generates a continuous signal or the push-buttons on a previously programmed remote control unit

**Continuous sound:** Continuous beep

**DIP switch:** Small slide control. Accessible here in the control system below the rubber cap.

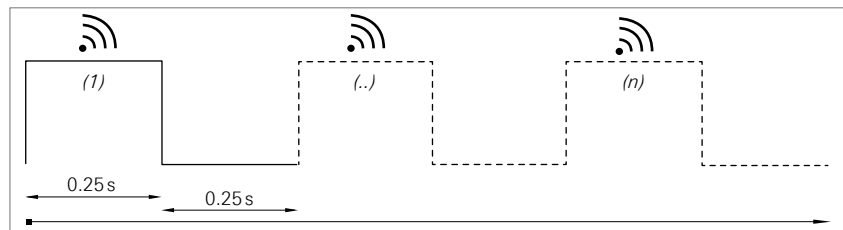
**ESD:** Electro Static Discharge

**Door electronics:** Component on hinge side of door sash, which accommodates the control system for the Roto E-Tec DoorDrive.

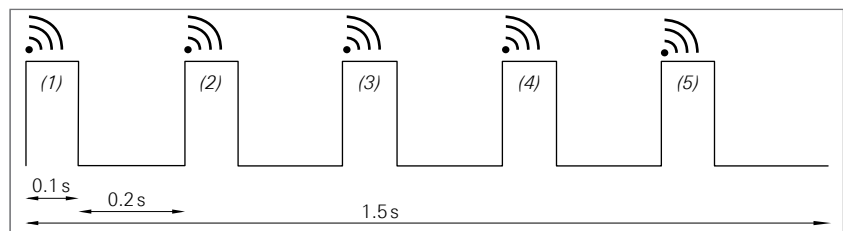
**Encoding:** A text/code is used in a secret translation.

**Changeable code:** Code that changes constantly. A code is valid once only. Its use prevents any impermissible access through repetition of a previously used radio signal when opening a door.

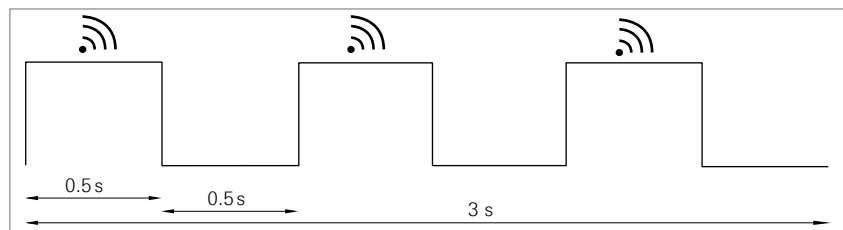
**Regular beeping:** 0.25 s beep and 0.25 s no beep.



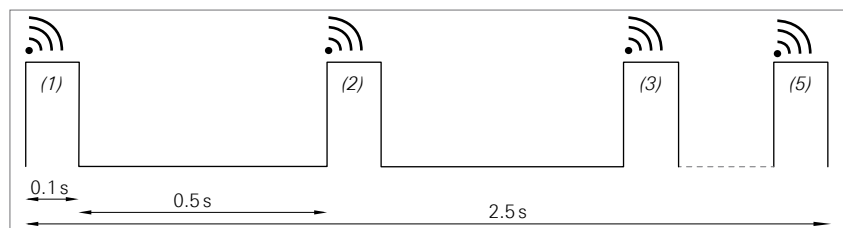
**Signal sequence for a fault:** 5 shorter beeps (0.1 s beep + 0.2 s no beep).



**Signal sequence for a successful action:** 3 longer beeps (0.5 s beep/0.5 s no beep).



**Signal sequence for an active clearance guard:** 5 shorter beeps with extended pauses (0.1 s beep + 0.5 s no beep).





### Errors

The swing door drive complies with a high quality standard and all the necessary technical regulations and specifications. Internal safety circuits and external safety circuits managed by the swing door drive are monitored on a cyclical basis. Situations may occur during operation of the Roto E-Tec DoorDrive system that lead to malfunctions.

The swing door drive attempts to determine the reasons for this and to respond accordingly. The response will be proportionate to the severity of the reason, and it can lead to a shut down of the automatic swing door drive function. In this instance, the door can be manually opened and closed.

Hardware defects, installation faults and manual operation during the safety test can cause fault messages whereupon the system will changeover into operation. The following option is available to reset fault messages:

**Mains reset:** Switch off the mains voltage for the swing door drive (circuit breaker).

A service technician must be notified promptly in the event of a defective or malfunctioning swing door drive.

However, some faults can be checked and rectified without the need for a technician, and the following table should provide assistance here:

Troubleshooting				
Problem	Possible causes	Corrective action	Specialist company	End-users
Door fails to open automatically, only manual operation possible.	– Control system, power supply or hand-held transmitter indicate a fault.	– Switch on power supply unit, system reset through power supply unit: Deactivate circuit breaker for house wiring for power supply unit for 15s or contact the specialist company.	<input type="checkbox"/>	<input type="checkbox"/>
	– Closed or open position not programmed.	– Refer to Initial operation.		<input type="checkbox"/>
	– Door jams, may be caused by door sagging	– Re-adjust hinges or contact specialist company.	<input type="checkbox"/>	<input type="checkbox"/>
	– Lock unlocks too late.	– Contact specialist company.	■	–
Door fails to open, beeps in response to open request	– Clearance guard has actuated. This occurs to prevent any damage through continuous operation.	– Wait for approx. 15 seconds, the swing door drive can then be used again.	<input type="checkbox"/>	<input type="checkbox"/>
	– Acoustic fault signal is issued.	– System reset through power supply unit: Deactivate power supply unit for 15seconds, otherwise contact the specialist company; programming error was determined, reprogram control system (contact specialist company).	■	

**Troubleshooting**

Problem	Possible causes	Corrective action	Specialist company	End-users
Door fails to close completely.	– Door jams, may be caused by door sagging or damaged gasket	– Re-adjust hinges, correct gasket or contact specialist company.	<input type="checkbox"/>	<input type="checkbox"/>
	– Lock sluggish.	– Grease or contact specialist company.	<input type="checkbox"/>	<input type="checkbox"/>
	– Closed position no longer programmed	– Reprogram closed position or disconnect system from mains voltage for 15 seconds.	<input type="checkbox"/>	<input type="checkbox"/>
Door opens automatically, but only closes after an extended period or not at all.	– “Hold-open period” parameter incorrectly set.	– Adjust hold-open period on DIP switch.	<input checked="" type="checkbox"/>	–
	– Obstacle in door opening area, which prevents it from closing.	– Clear opening area.	<input type="checkbox"/>	<input type="checkbox"/>
	– Door open too far (open 10% beyond programmed open position).	– Manually close door and check opening angle, if necessary install door stopper; program new open position (still open)	<input type="checkbox"/>	<input type="checkbox"/>
Door reverses without crushing instance	– Sluggishness in system	– Check whether an obstacle can be detected at the swing door drive and remove it (foreign object). – Check door settings. – If necessary, contact specialist company.	<input checked="" type="checkbox"/>	–
	– Wind load/wind gust	– Adapt crush guard setting using the DIP switch.	<input type="checkbox"/>	<input type="checkbox"/>
Noise	– Joints not greased or dusty.	– Grease again with specified grease, refer to Maintenance.	<input type="checkbox"/>	<input type="checkbox"/>
	– Swing door drive damaged. – Door has sagged	– Contact specialist company. – Check door setting and readjust if necessary.	<input checked="" type="checkbox"/> <input type="checkbox"/>	– <input type="checkbox"/>
Blocking	– Opening area blocked by an obstacle, blocked by swing door drive (crush guard).	– Clear opening area.	<input type="checkbox"/>	<input type="checkbox"/>
Blocking of swing door drive in closed position, opening not possible	– Swing door drive or actuation defective.	– Contact specialist company, manual opening remains possible	<input checked="" type="checkbox"/>	–
	– Lock defective.	– Have lock replaced, contact specialist company.	<input checked="" type="checkbox"/>	–

■ = To be carried out **only** by a specialist company

– = **Not** to be carried out by the end-user; the end-user may not carry out installation work!

□ = To be carried out either by a specialist company or by the end-user

The DIP switches enable the fault memory to be read out.





Long-term dependability and reliable operation of the automatic door can be assured through regular maintenance.

Have maintenance conducted at least once annually by qualified personnel. Qualified personnel is trained for the following specified work. If, during initial operation, the end user is also given instruction, then the maintenance described here can also be performed by the end user. Your Roto specialist dealer will be only too glad to provide you with assistance.

- Install certified genuine replacement parts only.
- Your Roto specialist dealer will provide you with replacement parts.



### SAFETY!

#### Danger through moving door sash

#### Risk of injuries through crushing or shearing

- Before performing any mechanical work on the swing door drive, disconnect it from the power supply,
- Secure door against moving, e.g. with a door stopper.
- Do not touch the closing edge when checking functions.
- Keep children away from the working area.

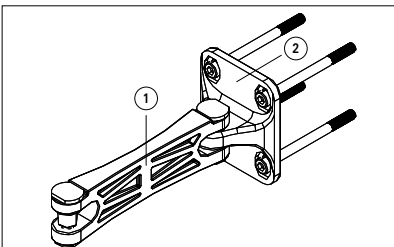
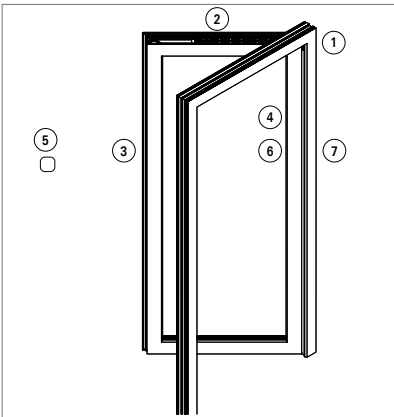
#### Property damage through incorrect handling

- The electronic circuit must not come into contact with water.
- Do not open door sash any further than 105°.

### General maintenance

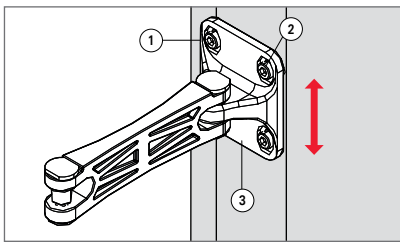
#### Maintenance points

- ① Angle bracket/coupling rod
- ② Fastening of swing door drive
- ③ Door latch
- ④ Electronic circuit
- ⑤ Power supply unit
- ⑥ Fastening of door frame
- ⑦ Cable junction



#### Checking angle bracket and coupling rod

- The fixing screws of the angle bracket ② and the coupling rod ① must not be loose.
- Re-tighten loose screws using screwdriver finger tight.
- Check angle bracket and coupling rod for obvious damage and visible signs of wear.
- Have damaged parts replaced by qualified personnel.



### Checking coupling rod alignment

- The coupling rod must be aligned parallel to the edge of the door.
  - To readjust, apply light pressure to adapter profile on inner closing edge ① to release it and remove it, to then enable all the screws to be accessed.
  - Release screws ② on angle bracket ③.
  - Slide angle bracket so that the coupling rod runs parallel to the upper edge of the door.
  - Tighten screws using screwdriver finger tight.
- Attach adapter profile again.

### Checking fastening of swing door drive

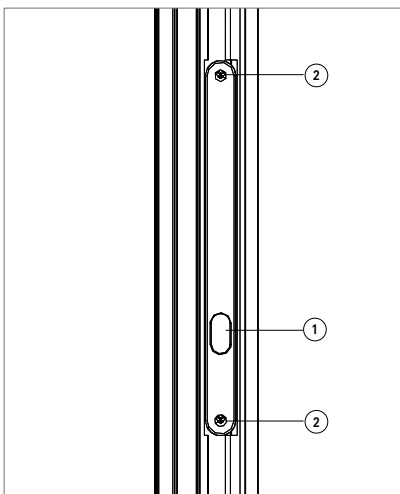
The swing door drive is installed into the door leaf below the upper edge of the door. The fastening of the swing door drive can be accessed from above.

- The fixing screws of the swing door drive must not be loose.
- Re-tighten loose screws using screwdriver finger tight.
- Check swing door drive for obvious damage and visible signs of wear.
- Have damaged parts replaced by qualified personnel.



### Checking door latch for ease of movement

- Door latch must close smoothly.
- Remove any coarse soiling.
- Clean door latch using clean cloth.
- If necessary, also lubricate door latch.



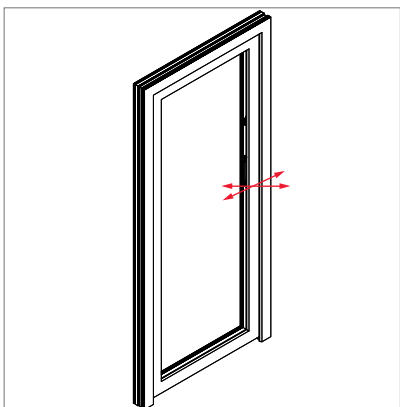
### Visually inspecting electronic circuits

The electronic circuits are installed in the door leaf.

- No soiling or moisture in the electronic circuits.
- Clean electronic circuits on outside using clean cloth.
- If sealing plug ① is damaged or missing, replace it.
- Re-tighten ② screws on cover of electronic circuits.

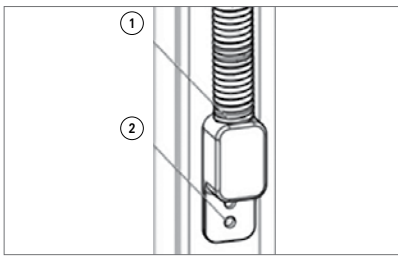
### Checking temperature of power supply unit with hand

- When installed, power supply unit is warm to the touch.
- If the power supply unit is hot, have the power supply unit checked or replaced by qualified personnel.
- If necessary, switch off the circuit breaker to disconnect the power supply unit from the mains supply.



### Checking mounting of door in masonry

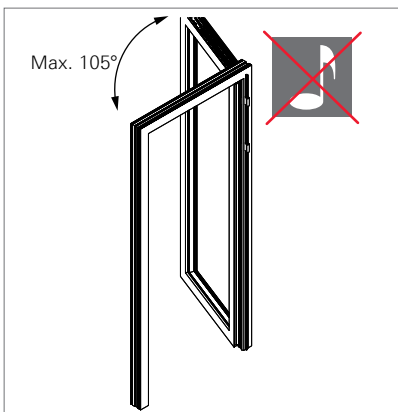
- The door frame is mounted firmly into the masonry. No gaps are visible between the frame and the masonry. When the door sash is moved the frame does not move.
- Door edges or frame edges are horizontal or vertical.
- The closed door sash makes close and even contact with all the closing edges and the frame.
- Check the position of the frame and the door sash using a spirit level.
- If necessary, have frame adjusted or mounted again by qualified personnel.



### Checking cable junction for firm seating

- The cable junction ① must be firmly mounted to the frame and to the door sash.
- Tighten fixing screws ② of cable junction finger tight.

### Door functions



### Checking programmed door functions

- The opening angle matches the configured value.
- The behaviour of the functions corresponds to the settings:
  - Crush guard
  - Reversing
  - Push to close, etc.
- The swing door drive operates silently.
- If necessary, have door functions set by qualified personnel.

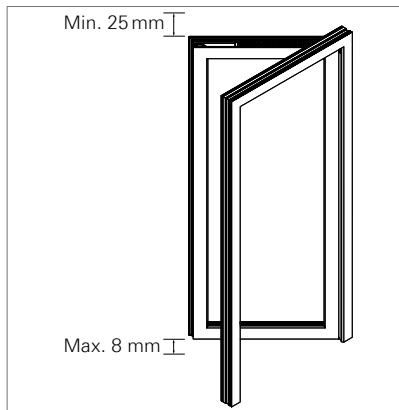
### Carrying out manual test run

- Door can be opened and closed without any power supply.
- Disconnect swing door drive from mains supply (switch off circuit breaker).
- Open door sash all way to end stop and then close again.
- Switch on circuit breaker again.
  - When next actuated the door closes, irrespective of the current position.
- Have faulty behaviour checked and rectified by qualified personnel.

### Checking maximum opening angle

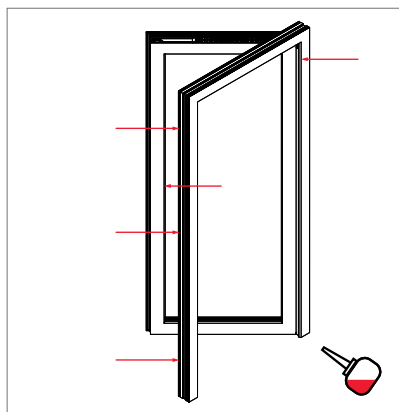
- The maximum opening angle for automatic opening is equivalent to the value in the setting log.
- The door sash cannot be opened manually or automatically any further than 105°.
- Check maximum opening angle for automatic and manual operation. Use an angle protractor or prepared template for the measurement.
- Check door hinge or end stop and – if required – have adjusted by qualified personnel.
- If necessary, use door stopper to limit opening angle.

**Structural surroundings**



**Avoiding hazardous areas**

- The following on-site requirements must be given:
  - The distance between the ground and the lower closing edge is less than 8 mm.
  - The distance between the upper edge of the door sash and the room ceiling is greater than 25 mm.
  - There are no obstacles on the ground.
 The specifications are dependent on the conducted safety analysis and the individual assessment of residual risks.
- Should you have any queries or if anything is unclear, please contact your local Roto specialist dealer.



**Lubrication**

Purchase all lubrication from your Roto specialist dealer.  
As and when required or at least once a year:

**Lubricating door latch and locking cam**

- Remove any old, excess lubricant using a dry, lint-free cloth.
- Apply one drop of resin-free oil (e.g. Molykote Omnigloss) to moving parts.

**Lubricating door hinge**

- Remove any old, excess lubricant using a dry, lint-free cloth.
- Apply a drop of oil to the door hinge (e.g. Molykote Omnigloss).

**Care**

	Specialist company	End-users
Keep the hardware free from deposits and soiling.	<input type="checkbox"/>	<input type="checkbox"/>
Never use aggressive, acidic cleaning or scouring agents.	<input type="checkbox"/>	<input type="checkbox"/>
Only use mild, pH-neutral cleaning agents in diluted form.	<input type="checkbox"/>	<input type="checkbox"/>
Use a soft cloth only for cleaning.	<input type="checkbox"/>	<input type="checkbox"/>

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- = **Not** to be carried out by the end-user; the end-user may not carry out installation work!

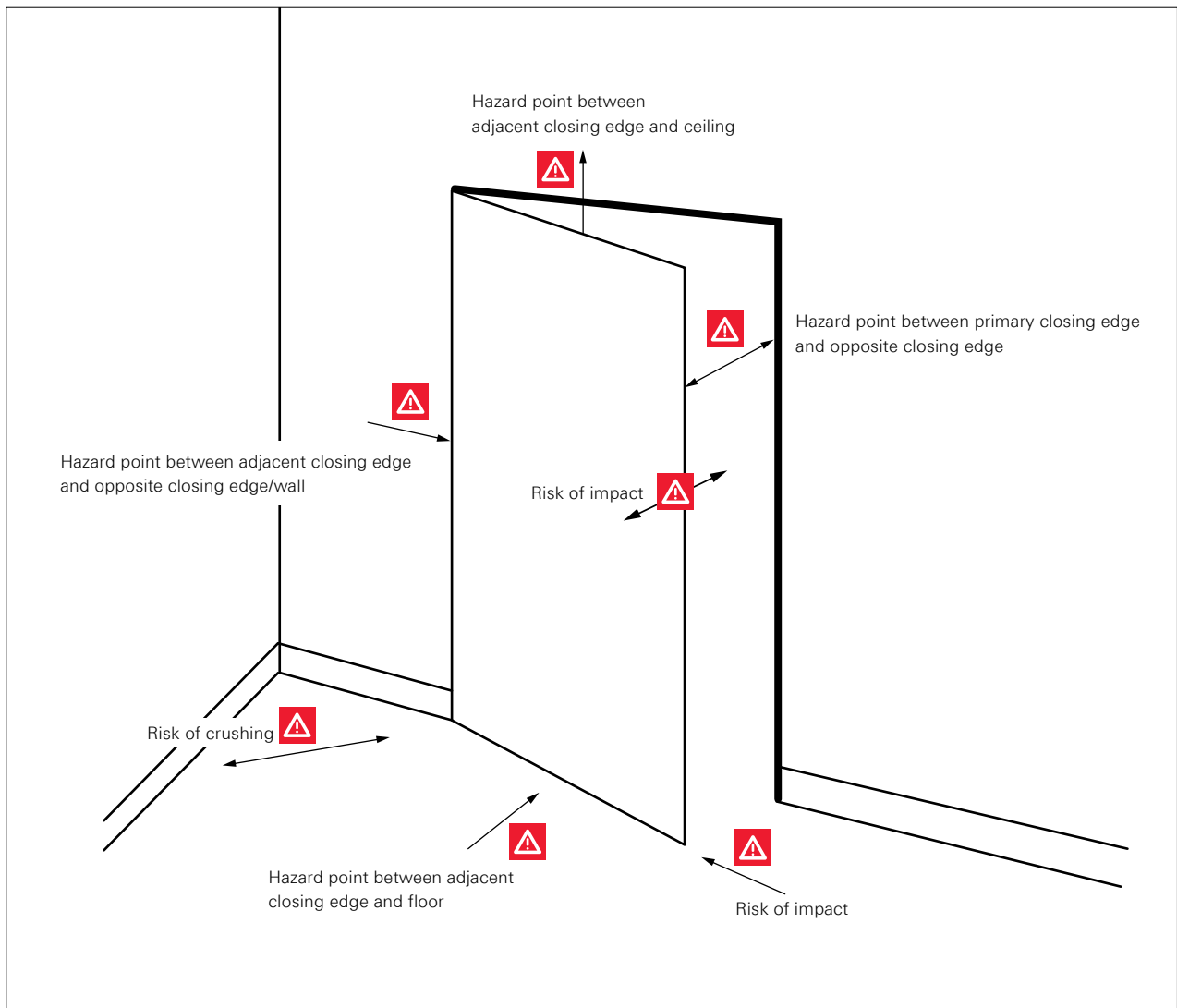
□ = To be carried out either by a specialist company or by the end-user

No legal claims can be derived from these recommendations. Application is to be geared to each specific individual case. The door manufacturer must ensure that builders and end-users are made aware of the importance of these maintenance instructions. Roto Frank AG recommends that manufacturers enter into maintenance agreements with their end-users.




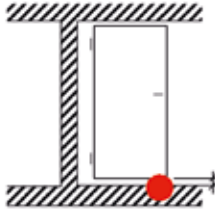

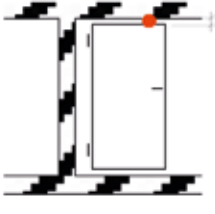
**The door manufacturer (door system installer) shall conduct a risk assessment with the customer (operator) in accordance with DIN EN 16005:**

	<b>General details</b>
Project (building site/builder)	
Address	_____
	_____
	_____
Installation location e.g. ground floor, basement, garage, etc.	_____
	_____
	_____
Door and swing door drive type	Turn-Only sash door with automatic door drive, 1 sash inward opening, sash overlapping on one or both sides.
Door opening angle	Max. 105°
Sash width	Min. 700 to 1200 mm
Sash height	Min. 1600 to 2350 mm
Door sash weight	Max. 120 kg
Automatic door system user group	<b>“Private area”</b> Private area (1 and 2 family home) Regular use for defined and authorised persons, controlled access points, use for instructed and trained persons only.







**Hazard points and protection measures**

Hazard point	Measure undertaken	Remark
Risk of crushing and impact when closing the door sash (primary closing edge).	Low-energy operation	
Risk of crushing and impact when opening the door sash (primary closing edge).	Low-energy operation	
Risk of crushing on hinge side (between sash and frame, adjacent closing edge).	The crushing risk is not influenced by the swing door drive.	This hazard point is also present on swing doors without swing door drive. It should be assumed that users are familiar with these hazard points from everyday handling of manual doors. Generally, the swing door drive manufacturer has no influence on such hazard points. The risk of crushing – in contrast to the situation on the lock side (= primary closing edge) – is not protected by the low-energy operation. When operating the door, it should be ensured that people are not inadvertently crushed.
Risk of being pulled in between the sash and the flooring (adjacent closing edge).	Safety distances are maintained.	Distance less than 8 mm (important for floor layer!).   <b>This must be taken into consideration during the planning phase!</b>  
Risk of being pulled in between the sash and the ceiling (adjacent closing edge).	Safety distances are maintained.	Distance greater than 25 mm.   <b>This must be taken into consideration during the planning phase!</b>  

**Hazard points and protection measures**

Hazard point	Measure undertaken	Remark
Risk of cutting	Use of safety glass in sash and side part; no sharp edges on door sash, on door panel or on side part (combined).	
Risk of tripping	No obstacles in passage area; no threshold or step in passage area (thresholds and platforms ≤ 20 mm).	 <b>This must be taken into consideration during the planning phase!</b>
Risk through weathering, e.g. ice in front of door, etc.	Protection against weather influences.	 <b>The door installation position is to be chosen to match the planning requirements</b> , e.g. through installation in the reveal, protection through canopy, not to be installed on weather side, no heavy shadow or direct sunlight.
Risk though operating error	Operation of opening/closing function for authorised people only (Operator = "Builder") instruction of user group (builder, resident)	The door operator is responsible for its safe operation.





**Details on residual risks, special functions, changes in use**

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**Examples of residual risks:**

- Steps or stairs in immediate vicinity of door
- Door opens too late for configured actuation delay
- Impact against primary closing edge of an opening or closing door sash
- Thresholds
- Risk of crushing / shearing through rolling levers or linkage



**SAFETY!**

The safety instructions must be observed and checked both before and after installation of the door.

The signatory opposite hereby confirms that the hazard points have been adequately secured and considered, and that the automatic door system can therefore be put into operation.

**Address**

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.....  
Place, Date

.....  
Signature of door system installer

The operator hereby declares that the residual risks are known, that he is familiar with the installation and operating instructions, that he has received appropriate instruction, and that he will ensure that the user group (builder, resident) receives corresponding instructions.

.....  
Place, Date

.....  
Operator signature



Both the Roto E-Tec DoorDrive and the packaging consist mainly of raw materials that can be recycled. The Roto E-Tec DoorDrive and the accessories should not be disposed of with domestic waste. Make sure that the old device and any accessories are routed to an appropriate disposal process. Ensure that legal, national regulations are complied with here.



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