Roto
Window & Door
Technology

Roto Safe E

E610 – Eneo CC and E611 – Eneo CF
Electromechanical multipoint locks for doors

Installation, maintenance and operation instructions for timber, PVC and aluminium profiles

Contact

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1 General information

1.1 Version history

Version	Date	Changes
v3	11/05/2020	Finger scan with app (new product) Cable junction (new products)
v4	12/12/2023	Installation instructions restructured Lever-operated espagnolette, standard added → *from page 34* 4in1 access control system (new product) → *from page 84*

1.2 Instructions

This manual contains important information, instructions, application diagrams (max. sash sizes and weights) and assembly instructions for the installation, maintenance and operation of hardware.

The information and instructions contained in this document refer to products belonging to the Roto hardware system named on the front page.

All steps must be completed in sequence.

The following documents apply in addition to these instructions:

Catalogue

- Roto Safe catalogue: CTL_86

Installation instructions

- Roto Safe E | Eneo Control Unit: IMO_288
- Connection diagrams: IMO_310

Quick guide

- Power supply unit specifications: SUG_3
- Roto Safe E | Cable junction: SUG_28
- Finger scan: SUG_37
- 4in1 access control system: SUG_43
- Roto Safe E | Eneo – replacing the drive unit: SUG_46

Additional guidelines and directives

- Instructions and information issued by profile manufacturers (e.g. manufacturers of windows and balcony doors),
- The applicable regulations, directives and national laws.

Storing the instructions

These instructions are an important part of the product. The instructions must be stored so that they are always to hand.

Explanation of the markings

The manual uses the following markings for emphasis (e.g. in figures or instructions):

Marking	Meaning
	Optional / alternative components seated in the leaf
	Leaf / components seated in the leaf
	Optional / alternative components seated in the frame

Marking	Meaning
	Frame / components seated in the frame
	Drill holes, routing, screw positions
	Unaffected components / indirectly affected components
	Components, arrows or movements that have just been described
1	Item number
[1]	Legend
[A]	Steps

INFO

Any dimensions without a unit in the instructions are given in millimetres (mm). Other units of measurement are clearly indicated by the presence of the differing unit.

INFO

Figures are provided in the right-hand version (DIN 107).

1.3 Symbols

Symbol	Meaning
■	First-level list
□	Second-level list
→	(Cross-)reference
▷	Result
▶	Unnumbered step
1.	Numbered step
a.	Numbered second-level step
⇨	Requirement

1.4 Pictographs

Symbol	Meaning
	Timber
	PVC
	Aluminium
	Door

1.5 Abbreviations

Abbreviation	Meaning
A	Amperes
W	Width
CTL	Catalogue
°C	Degrees Celsius
H	Height
IMO	Installation instructions

Abbreviation	Meaning
kg	Kilograms
L	Length
m	Metres
mA	Milliamperes
mm	Millimetres
ms	Milliseconds
MHz	Megahertz
Nm	Torque in newton metres
SUG	Quick guide
D	Depth
V	Volts
W	Watts

1.6 Explanation of terms

Locking

The term “locking” refers to the deadbolt in the main lock and the additional locking systems, used to lock the door securely.

Door secured

The term “door secured” means that the door is secured using the latch in the main lock but is not locked. Actuating the door lever handle causes the latch to retract, allowing the door to be opened.

Door locked

The term “door locked” means that the door is secured by an unsprung rigid deadbolt that has been pushed out of the main lock, and / or additionally by other additional locking systems. All locking elements engage in corresponding recesses in the door frame, or striker plates, the lock casing, etc.

1.7 Target groups

The information in this document is directed at the following target groups:

Hardware dealers

The “hardware dealers” target group includes all companies and individuals that purchase hardware from hardware manufacturers for resale, without modifying or further processing the hardware.

Door manufacturers

The “door manufacturers” target group includes all companies and individuals that purchase hardware from hardware manufacturers or hardware dealers and further process the hardware by integrating it in doors.

Building element dealers or installation companies

The “building element dealers or installation companies” target group includes all companies and individuals that purchase doors from door manufacturers for resale and installation in a construction project, without modifying the doors.

Builders

The “builders” target group includes all companies and individuals who place orders for the manufacture of doors for installation in their construction projects.

End users

The “end users” target group includes all individuals who use the installed doors.

1.8 Target groups' obligation to give instructions

INFO

Each target group must fulfil their obligation to give instructions in full.

Unless specified otherwise in the text below, documents and information can be passed on as a printed document, on a data storage device or via the Internet.

Responsibility of hardware dealers

Hardware dealers must pass the following documents on to the door manufacturer:

- Catalogue
- Installation, maintenance and operation instructions

Responsibility of the door manufacturer

The door manufacturer must pass the following document on to building element dealers or the builder, even if a subcontractor (installation company) is involved:

- Installation, maintenance and operation instructions

They must ensure that the end users are provided with the documents and information intended for them in printed format.

Responsibility of building element dealers / the installation company

Building element dealers must pass the following document on to the builder, even if a subcontractor (installation company) is involved:

- Maintenance and operation instructions

Responsibility of the builder

The builder must hand over the following document to the end user:

- Maintenance and operation instructions

1.9 Copyright protection

1.10 Limitation of liability

All information and instructions contained in this document have been compiled in consideration of the applicable standards and regulations, the latest developments in technology and many years of knowledge and experience.

The hardware manufacturer assumes no liability for damage caused by:

- Failure to comply with this document and all product-specific documents and other applicable directives (see the chapters entitled "Security" and "Stipulated use").
- Improper use / misuse (see the chapters entitled "Security" and "Stipulated use").
- Insufficient invitation to tender, non-compliance with installation specifications and non-compliance with the application diagrams (where available).
- Increased contamination.

Claims made by third parties against the hardware manufacturer on account of damage resulting from misuse or failure to comply with the obligation to give instructions on the part of hardware dealers, window, door and balcony door manufacturers and building element dealers or the builder are passed on accordingly.

The obligations agreed in the delivery contract, the general terms and conditions, the hardware manufacturer's terms and conditions of delivery and the legal provisions applicable when the contract was concluded shall apply.

The warranty only covers original Roto components.

We reserve the right to make technical changes as part of improvement to performance characteristics and further development.

1.11 Preserving the surface finish

ATTENTION

Surface treatments may cause property damage.

Surface treatments (e.g. painting and varnishing) on elements can damage components or prevent them from working properly.

- For masking, only use adhesive tape that does not damage the paint coats. Consult the manufacturer if in doubt.
- Protect components against direct contact with the surface treatment.
- Protect components against contamination.

ATTENTION

Using incorrect cleaning agents and sealing compounds may cause property damage.

Cleaning agents and sealing compounds may damage the surfaces of components and gaskets.

- Do not use aggressive or flammable liquids, acidic cleaners or abrasive cleaners.
- Only use mild, pH-neutral cleaning agents that have been diluted.
- Apply a thin protective film to the components, for example using a cloth soaked in oil.
- Avoid aggressive vapours (e.g. produced by formic acid, acetic acid, ammonia, amine compounds, ammonia compounds, aldehyde, carbolic acid, chlorine, tannic acid) around the element.
- Do not use any acetic acid-crosslinking or acid-crosslinking sealing compounds or those with the aforementioned constituents as both direct contact with the sealing compound and its fumes can corrode the surface of the components.

ATTENTION

Contamination may cause property damage.

Contamination prevents components working properly.

- Remove deposits and contamination caused by construction materials (e.g. plaster, gypsum).
- Keep components free of deposits and contaminants.

ATTENTION

(Permanently) damp room air may cause property damage.

Damp room air can lead to mould growth and corrosion caused by condensation.

- Provide adequate ventilation for components, particularly during the construction phase.
- Intensively air out the room several times per day by opening all elements for approximately 15 minutes. If intensive airing is not an option, place the elements in the tilt position and provide airtight masking inside the room, e.g. if there is fresh screed that cannot be walked on or must not be exposed to draughts. Discharge any humidity present in the room air to the outside using condensation dryers.
- Establish a ventilation plan for more complex construction projects if necessary.
- Provide adequate ventilation during holiday periods as well.

2 Security

This manual contains instructions relating to safety. The principal safety information in this chapter includes information and instructions relevant to the safe use or maintaining the safe condition of the product. Warning instructions that relate to handling warn of residual risks and are located before steps that are relevant to safety.

- Follow all of the instructions in order to prevent personal injury and property and environmental damage.

2.1 Presentation and structure of warning instructions

The warning instructions relate to individual actions and are structured as follows with a warning symbol:

DANGER

Nature and source of the danger.

Explanation and description of the danger and the implications.

- Measures to take to avert the danger.

2.2 Security levels of warning instructions

The warning instructions that relate to handling are identified differently according to the severity of the associated danger. The signal words and the associated warning symbols used are clarified below.

DANGER

Immediate risk of death or serious injuries.

- Observe these warning instructions to avoid personal injuries.

WARNING

Potential risk of death or serious injuries.

- Observe these warning instructions to avoid personal injuries.

CAUTION

Risk of injuries

- Observe these warning instructions to avoid personal injuries.

ATTENTION

Reference to property or environmental damage.

- Observe these warning instructions to avoid property or environmental damage.

2.3 Specific safety information

2.3.1 Batteries

Handling batteries incorrectly poses an immediate risk of death or serious injuries.

Handling batteries incorrectly can lead to hazardous situations or property damage.

- Store batteries out of reach of children, as they might play with the batteries and could swallow them.

  If a battery has been swallowed, consult a doctor immediately.

- Do not expose the battery to moisture, fire or high temperatures.
- Avoid connecting the positive (+) and negative terminals (–) (for example avoid wrapping the battery in aluminium foil). Risk of short-circuit!
- No not recharge or open batteries.
- Use only the type of batteries recommended in these instructions.
- Do not throw the battery into open flames. Risk of explosion!

2.4 Stipulated use

E610 – Eneo CC and E611 – Eneo CF

The multipoint lock described in these instructions is designed for installation in doors. The multipoint lock is only intended for further processing on doors for vertical installation made from the materials described in these instructions. The multipoint lock opens, closes and locks doors.

Cable junction

The cable junctions can be used for supplying power to electromechanical multipoint locks.

Finger scan with app

The finger scan makes it possible to open electromechanical multipoint locks using a fingerprint. Configuration and user management take place via the app.

4in1 access control system

The 4in1 access control system makes opening the door simple. The door can be opened by entering a PIN code or using a fingerprint, Bluetooth-capable smartphone or RFID-capable medium.

The 4in1 access control system can be used with all Eneo locks.

Hand-held transmitter

The hand-held transmitter is only permitted for use with electromechanical multipoint locks from Roto Frank Fenster- und Türtechnologie GmbH.

With its range of up to 10 metres, the transmitter makes it possible to conveniently open doors remotely.

There is no security against faults caused by other devices that are operated properly in the same frequency range.

Day / night changeover switch

The retrofittable day / night changeover switch makes it possible to specifically switch the automatic closing mechanism of the multipoint lock on or off.

Eneo Control Unit

The Eneo Control Unit is used to check for proper operation. This way, the door manufacturer can pass a tested door on to the next tradesperson involved.

Eneo power supply unit

The Eneo power supply unit provides the electronic components with a reliable supply of the energy they need.

The following applies to all products:

The stipulated use also includes compliance with all information contained in the product-specific documentation, such as:

- These installation, maintenance and operation instructions
- Product catalogues
- Information, specifications from profile manufacturers (e.g. light metal profiles, etc.)

- Applicable national laws and directives.

2.4.1 Misuse

Any use and processing of the products that goes beyond or differs from the stipulated use is considered misuse and can lead to hazardous situations.

WARNING

Misuse may pose a risk of death!

Misuse and incorrect installation of hardware can lead to serious injuries.

- Only use hardware combinations that have been approved by the hardware manufacturer.
- Only use original accessories or those that have been approved by the hardware manufacturer.
- Note the product-related documentation → *from page 8*.

2.5 Basic safety information

The following hazards may arise when handling the product:

2.5.1 Installation

Incorrect installation poses an immediate risk of death or serious injuries.

Incorrect installation or assembly of hardware can lead to hazardous situations or property damage. Depending on the height of the fall, this can result in serious to life-threatening injuries and glass breakage.

- Only use hardware combinations that have been approved by the hardware manufacturer.
- Only use original accessories or those that have been approved by the hardware manufacturer.
- Always have installation performed by a specialist company.

Heavy loads pose a risk of injury.

Lifting and carrying heavy loads may lead to injuries in the event of a fall or physical overexertion.

- Note the applicable accident prevention regulations.
- Transport heavy loads with two people and use suitable transportation means (such as an industrial truck).

Physical overexertion may be harmful to health.

Moving heavy loads for extended periods leads to physical injury in the long term.

- When carrying and lifting by hand, comply with a maximum weight of 25 kg for men and 10 kg for women.
- Carry and lift even small loads with an ergonomically correct posture.

2.5.2 Use

Falls from open windows and balcony doors present an immediate risk of death and pose the risk of serious injuries.

Opened sashes of windows and balcony doors create a danger zone. Depending on the height of the fall, this can result in serious to life-threatening injuries and glass breakage.

- Take care when in the vicinity of open windows and balcony doors.

- Keep children and anyone unable to understand the risks away from the hazardous area.

Trapping body parts in the opening between sash and frame may lead to serious injuries.

Gripping between the sash and frame when closing windows and balcony doors poses the risk of crushing injuries.

- When closing windows and balcony doors, never grip between the sash and frame and always exercise caution.
- Keep children and anyone unable to understand the risks away from the hazardous area.

Opening and closing leaves improperly poses the risk of injury and property damage.

Incorrect opening and closing of leaves can result in serious injuries and substantial property damage.

- When moving the sash, ensure that it will not slam against the frame or other leaves once fully opened or closed.
- Ensure that the sash is slowly guided by hand throughout its entire movement range, until it has been brought into a fully closed or opening position.
- When closing a sash and locking the hardware, the gasket counter force must be overcome.

Misuse poses a risk of injury and property damage.

Misuse can lead to hazardous situations and may destroy the hardware, frame materials or other individual components within the windows or balcony doors.

- Do not introduce any obstacles in the opening area between the frame and window or balcony door sashes.
- Do not place additional loads on windows and balcony door sashes.
- Refrain from intentionally or uncontrollably slamming or pushing the window or balcony door sash against the window reveal or the opening restrictor.

Improper maintenance poses the potential risk of injury and property damage.

Windows and balcony doors, including the hardware, require expert maintenance (care, cleaning, maintenance and inspection) in order to guarantee their proper condition and safe use.

- Keep the hardware free of deposits and contaminants.
- Carry out care and cleaning tasks as specified in these instructions.
- Always have regular maintenance, adjustment and repair work carried out by a specialist company.

2.5.3 Ambient conditions

Physical and chemical influences may result in property damage.

Hardware components can be permanently damaged in a saline, aggressive or corrosive environment to the point that they can no longer function.

- Do not use the hardware components in a saline, aggressive or corrosive environment.
- Carry out care and cleaning tasks as specified in these instructions.
- Corrosion protection must be inspected by an authorised specialist company as part of regular maintenance work.

Moisture may cause property damage.

Depending on the outside temperature, relative humidity of the room air and installation situation of the windows and balcony doors, a temporary build-up of condensation may occur. This can lead to corrosion on the hardware

and mould growth on the frame or wall. Ambient conditions that are too damp, particularly during the construction phase, can lead to timber elements warping.

- Avoid preventing the circulation of air (e.g. due to deep reveals, curtains and unfavourable positioning of heaters or the like).
- Intensively air out the room several times per day.

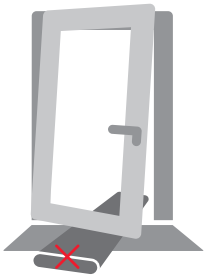
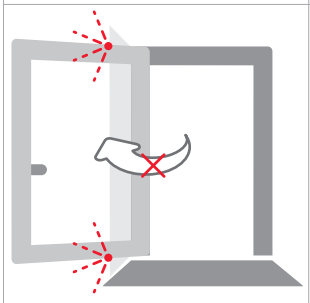
  Open all windows and balcony doors for approximately 15 minutes so that the air in the room can be completely replaced.
- Provide adequate ventilation during holiday periods as well.
- Create a ventilation plan for construction projects if necessary.

2.6 Operation

The safety symbols and markings and the associated warning instructions explained below apply to the safe operation of doors.

Safety symbols and markings

Symbol	Meaning
	**Trapping body parts in the opening between leaf and frame may lead to serious injuries.** When closing doors, never grip between the leaf and frame and always exercise caution. Keep children and anyone unable to understand the risks away from the hazardous area.
	**Placing additional loads on the leaf may lead to minor injuries and property damage.** Avoid placing additional loads on the leaf.
	**Opening and closing the leaf in an uncontrolled manner may result in minor injuries and property damage.** Ensure that the leaf is slowly guided by hand throughout its entire movement range, until it has been brought into a fully closed or opening position. Avoid exposing the open leaf to wind. Close doors in windy and draughty conditions.

Symbol	Meaning
	**Introducing obstacles into the opening between leaf and frame may result in minor injuries and property damage.** Avoid introducing obstacles into the opening between leaf and frame.
	**Pressing the leaf against the edge of an opening (reveal) may pose a risk of minor injuries and cause property damage.** Avoid pressing the leaf against the edge of an opening (reveal).

3 Information on the product

3.1 General hardware characteristics

Security

- Convenient opening from inside for a reliable exit in an emergency
- DIN EN 179-certified design (E611 – Eneo CF)
- Emergency opening using the key is possible at any time
- Additional lockings are push-back safeguarded without using the key

Comfort

- Quiet and powerful motor for effortless opening and locking
- Extremely short unlocking time
- LED switch for convenient changeover between day / night operation mode
- Plug & play connection for simple and error-free installation

Efficiency

- No free cam cylinder required
- Standardised locking patterns for reduced logistics and installation effort
- Profile-related frame components for efficient installation
- Eneo Control Unit for simple functional testing

Design

- Door designs up to 2400 mm for freedom of design
- Durable and scratch-resistant surfaces for a high-quality appearance in the long term
- Backsets from 35 to 80 mm for a high level of flexibility

Quality

- Certified long-term functional performance characteristics for permanent functional safety
- Corrosion-resistant surfaces for a safe investment

3.2 Functional principle

Unlocking the door from the outside

Depending on the access control system available, unlocking can be triggered by hand-held transmitter, finger scan, 4in1 access control system, etc.

Unlocking the door from the inside

E610 – Eneo CC and E611 – Eneo CF can be unlocked using the lever handle.

INFO

E610 – Eneo CC and E611 – Eneo CF

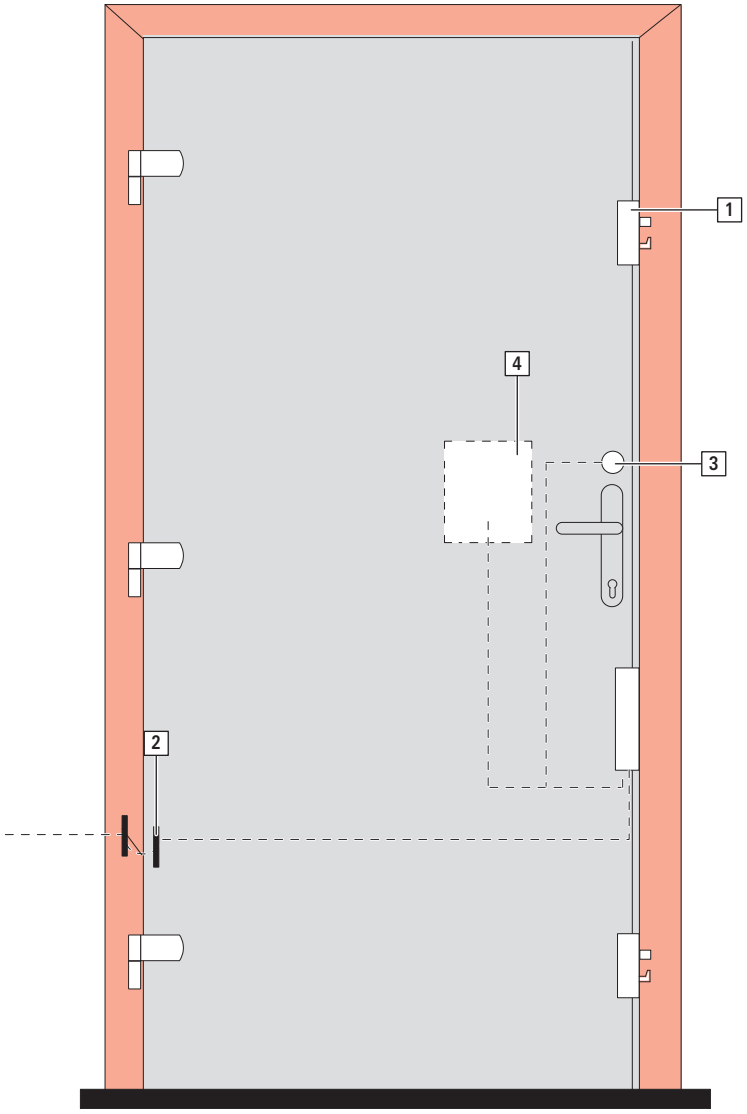
A pull handle or push bar must be fitted to the outside of the door.

4 Brief instructions

4.1 Installation sequence

	Step	Note	Page reference
Leaf	Route the profile for the multipoint lock.		→ *from page 37*
	Route the profile for the cable junction.		→ *from page 68*
	Route the profile for the accessories.	Finger scan 4in1 access control system Day / night changeover switch	→ *from page 76* → *from page 84* → *from page 92*
	Predrill the door lever handle set.		→ *from page 43*
	Turn the latch around if required.		→ *from page 46*
	Install the cable junction. Lay the cable.		→ *from page 70*
	Install and connect the access control system.	Finger scan 4in1 access control system	→ *from page 77* → *from page 86*
	Install and connect the day / night changeover switch.		→ *from page 93*
	Connect the drive unit.		→ *from page 48*
	Install the multipoint lock.		→ *from page 49*
	Install the lever-operated espagnolette (standard, Plus) on the second opening leaf.	Only for double-leaf doors	→ *from page 50*
	Install the lever handle set.		
Frame	Route the profile for the frame components.		→ *from page 41*
	Route the profile for the cable junction.		→ *from page 68*
	Install the cable junction.		→ *from page 70*
	Install the striker strip or strikers and any electrical openers required.		→ *from page 56*
	Install the top shootbolt protrusion striker.	Only for double-leaf doors	→ *from page 59*
	Install the bottom shootbolt protrusion striker.	Only for double-leaf doors	
Final acceptance	Make the necessary adjustments.		→ *from page 102*
	Lubricate the hardware.		→ *from page 120*
	Carry out a performance test on the multipoint lock.		→ *from page 110*
	Carry out a performance test on the cable junction.		→ *from page 73*
	Performance test on access control system	Finger scan 4in1 access control system	→ *from page 78* → *from page 87*

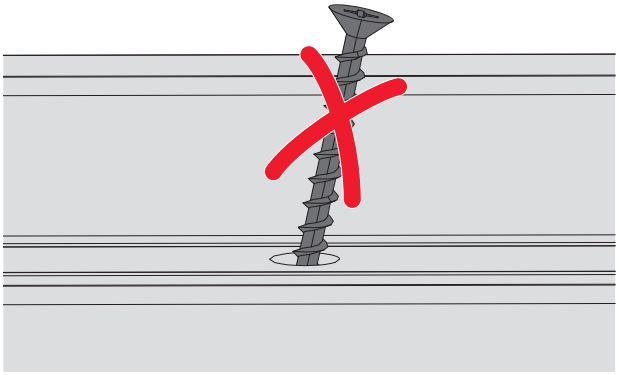
Example



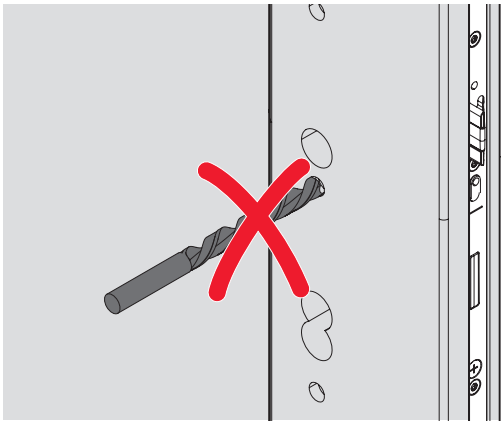
[1] Multipoint lock → *from page 23*
[2] Cable junction with cable → *from page 61*
[3] Day / night changeover switch → *from page 92*
[4] Access control system
Finger scan → *from page 75*
4in1 access control system → *from page 84*

5 Installation

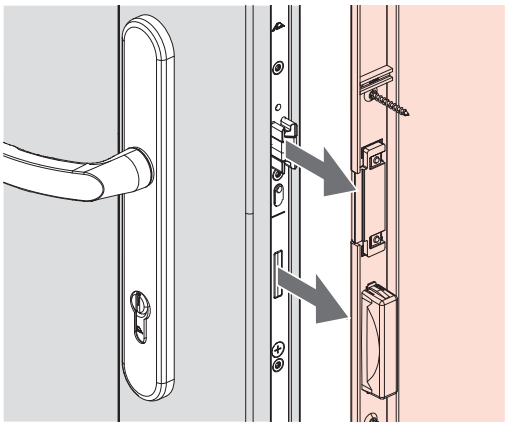
5.1 General information



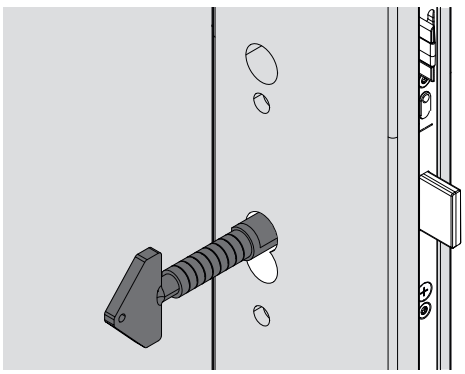
Turn the screws in straight so that no distortion can occur. Do not use stainless-steel screws on the Roto Sil surface. Use stainless-steel screws on stainless-steel components.



Do not drill through the lock area of the door leaf when the lock is installed (e.g. for protective hardware).

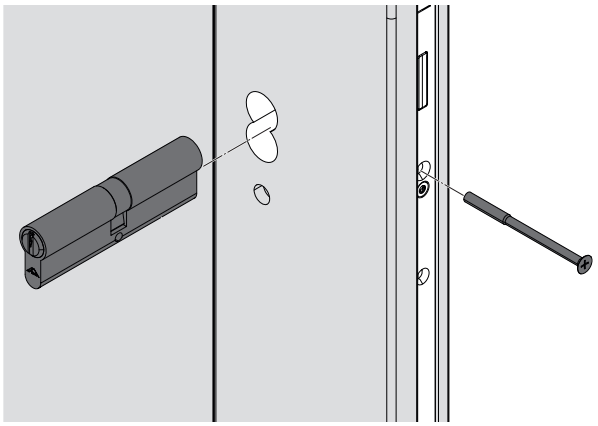


Manufacture door designs so that it is ensured that the locks always operate properly. Observe the axis dimension.



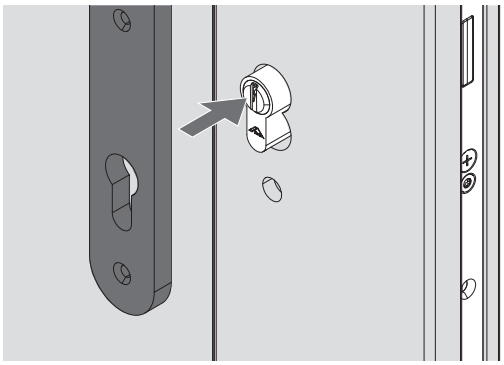
INFO

When an original cylinder is not installed, only lock and unlock the door using the Roto universal access key.



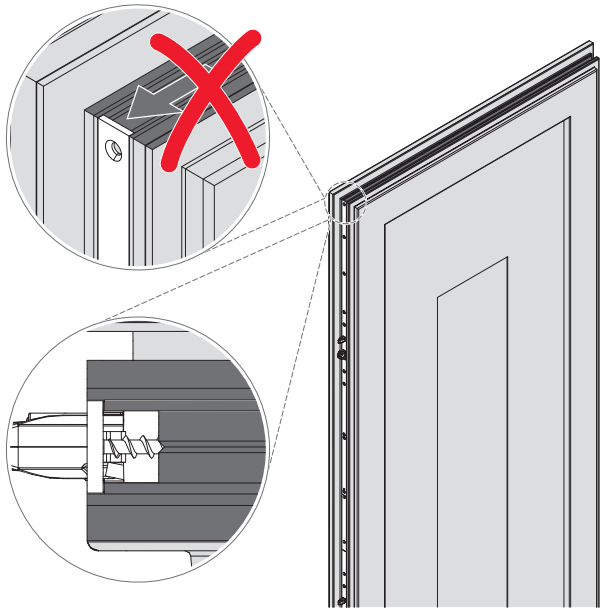
INFO

Install the profile cylinder and/or round cylinder without subjecting it to stress (align it 90° to the leaf).



INFO

Install the long plates and escutcheons without subjecting them to stress (align them 90° to the leaf).

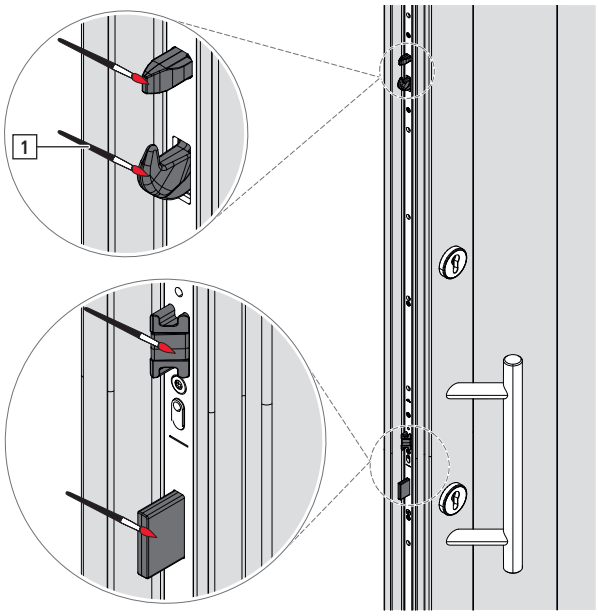


ATTENTION

Contamination may cause property damage.

Contamination may get behind the floating mullion and block the multipoint locking system.

- Do not wipe contamination in the upper area of the sash (e.g. plaster, gypsum) towards the floating mullion.



[1] Grease

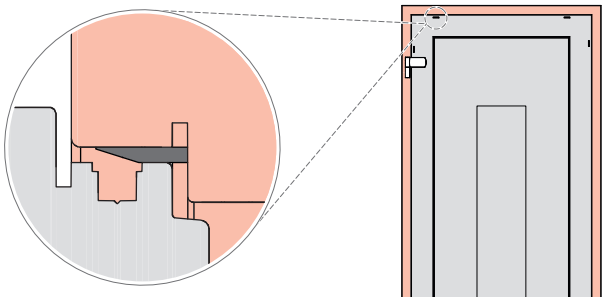
Lubricate locking components (latch, deadbolt, additional lock) at least once per year.

ATTENTION

Using incorrect lubricants may cause property damage.

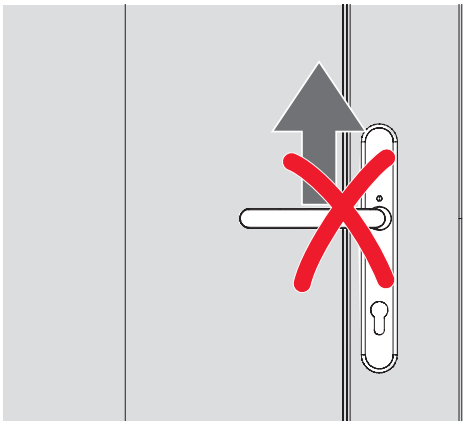
Substandard lubricants can prevent the hardware from working properly.

- Use high-quality lubricants.
- Only use resin-free and acid-free lubricants.
- Use appropriate lubricant in more challenging climatic conditions. Note the manufacturer specifications.



During transport, secure the leaf against the frame using suitable supports (run-up blocks, wedges, etc.).

Do not remove the cylinder fixing, which is a transport safety mechanism, until you are about to install the profile cylinder.



Do not carry the leaf by the door lever handle.

5.2 Screw connections

ATTENTION

Improper screw fixings may cause property damage.

Improper screw fixings may damage the components and the element as a whole, and stop them from working properly.

- Unless stated otherwise, turn screws in straight.
- Tighten screw heads until they are flush with the surface.
- Do not over-tighten screws. Note the torque. Choose a torque that will not deform the hardware and profile. Define profile-specific torques on the basis of the demo assembly.
- Use the recommended screws.
- Select the length of the screws according to the profiles used.

ATTENTION

Using incorrect screw material may cause property damage.

Using the wrong screws may damage the components.

- Only use galvanised zinc-plated and passivated steel screws.
- Use screws with additional sealing in more challenging climatic conditions.
- Use stainless-steel screws on stainless-steel components only.
- For aluminium components, use screws made of steel (coated with zinc-nickel or zinc flakes) or stainless steel.

General information

- During installation and screwdriving work, observe the specifications provided by the profile manufacturer; contact the profile manufacturer if necessary.
- Use the recommended screws.
- Select the length of the screws according to the profiles used.
- Ensure that the hardware components are adequately secured; contact the screw manufacturer if necessary.

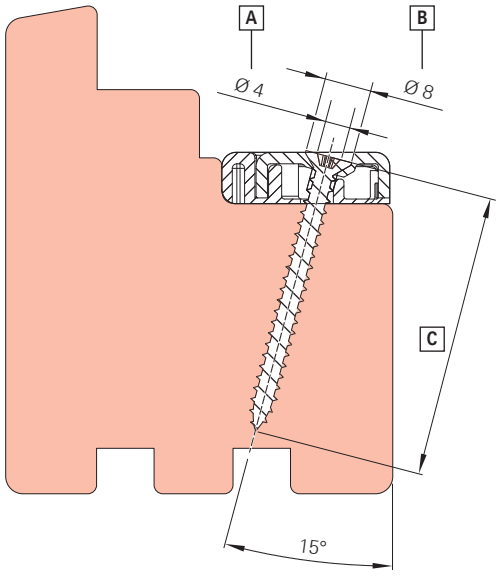
5.2.1 Timber

Fasten hardware components using electrogalvanised and passivated steel fixing screws. Use fixing screws with additional sealing in more challenging climatic conditions.

Fixing screws for timber strikers

INFO

It can be seen from each individual timber striker whether the fixing screws have to be turned in straight or at a 15° angle.



Choose screws for timber strikers with a 15° angle:

[A] Screw diameter

[B] Maximum possible head diameter

[C] Maximum possible screw length

5.2.2 PVC

ATTENTION

Incorrect screw connections may cause property damage.

Short screws will not pass through two walls in the steel reinforcement and will therefore not hold.
The multipoint lock can be pulled out of the leaf if it is not screwed through two walls.

- Select the length of the screws so that they will hold in the two walls of the steel reinforcement.

Fasten hardware components using electrogalvanised and passivated steel fixing screws. Use fixing screws with additional sealing in more challenging climatic conditions.

5.2.3 Aluminium

ATTENTION

Improper screw connections may cause property damage.

The multipoint locking can be pulled out of the profile if it is not screwed down correctly.

- Select the length of the screws so that they will hold in the aluminium profile.

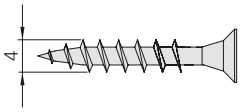
  If necessary, insert additional aluminium profiles or use rivet nuts.

INFO

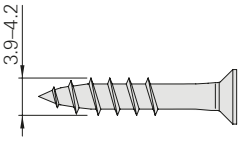
If rivet nuts are used instead of screws, use countersunk nuts.

5.2.4 Screwdriving recommendations

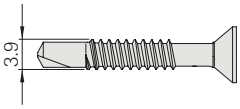
Timber



PVC



Aluminium



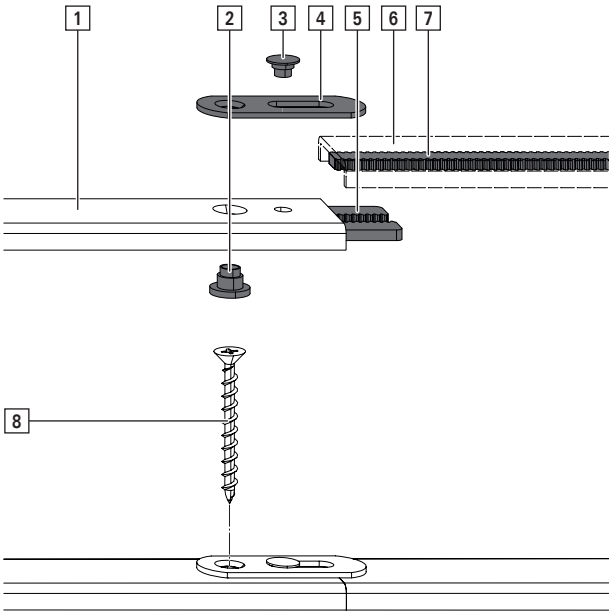
5.3 Force-fit connection

INFO

Force-fit connections are formed by screwing down components A and B so that forces and movements are transferred without loss.

Couplable hardware components always require a force-fit connection.

5.3.1 Lever-operated espagnolette

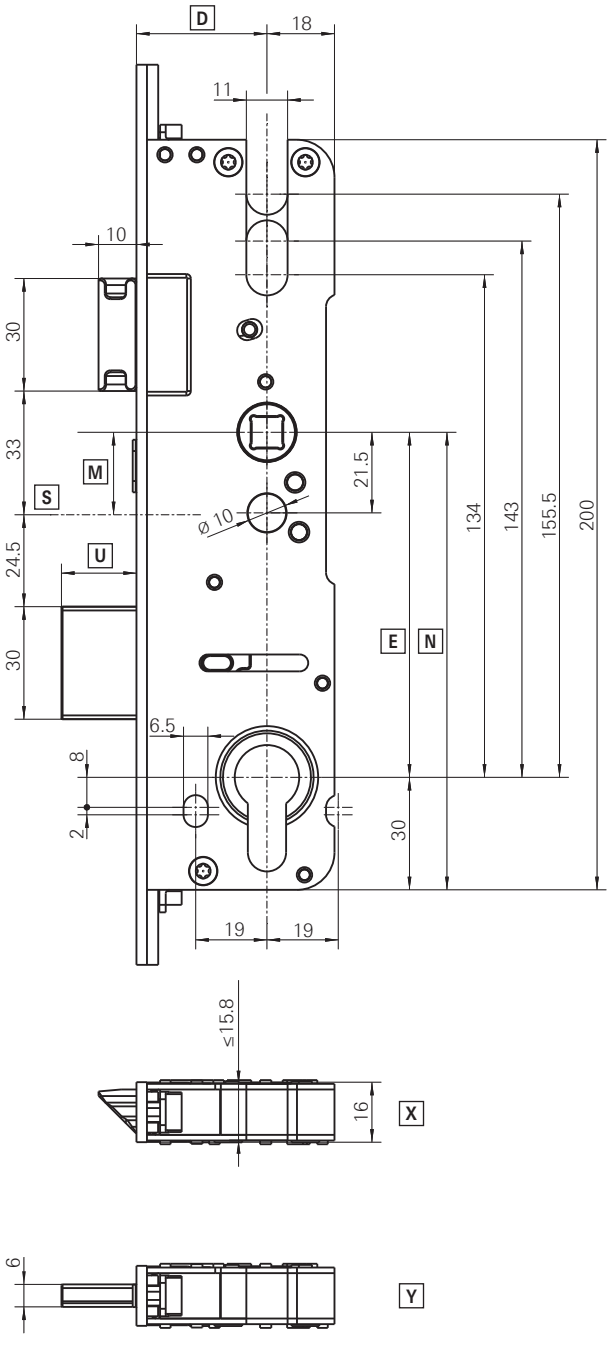


Assignment	Description
[1]	Component A
[2]	Retaining clip
[3]	Rivet
[4]	Faceplate link
[5]	Component A toothed segment
[6]	Component B
[7]	Component B toothed segment
[8]	Screw

5.4 Main locks

5.4.1 E610 – Eneo CC

E610 – Eneo CC | Backset from 35 mm

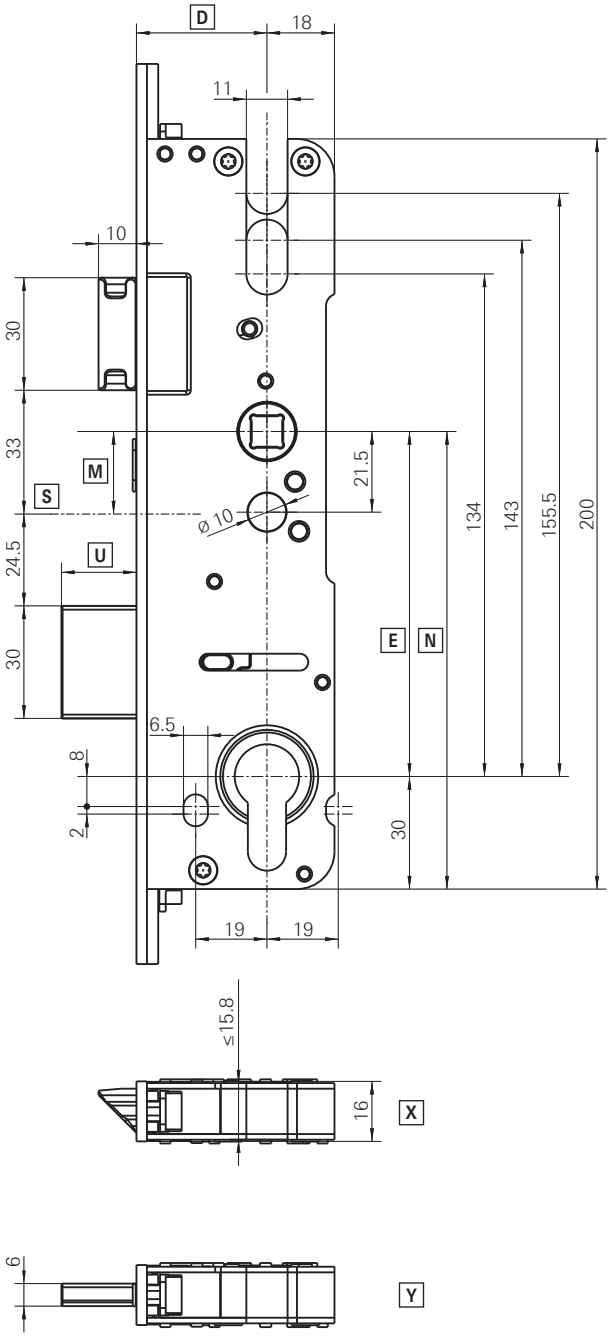


Assignment	Meaning	Value
[D]	Backset	35 to 80 mm
[E]	Distance	92 mm
[M]	Centre of spindle-receiver to centre of main lock	22 mm
[N]	Centre of spindle-receiver to lower edge of main lock	122 mm
[S]	Centre of main lock	–
[U]	Deadbolt protrusion	20 mm
[X]	Latch (can be turned around)	–
[Y]	Deadbolt	–

INFO
The backset and dimensions for the latch and deadbolt protrusion refer to a 3 mm faceplate thickness.

5.4.2 E611 – Eneo CF

E611 – Eneo CF | Backset from 35 mm



Assignment	Meaning	Value
[D]	Backset	35 to 80 mm
[E]	Distance	92 mm
[M]	Centre of spindle-receiver to centre of main lock	22 mm
[N]	Centre of spindle-receiver to lower edge of main lock	122 mm
[S]	Centre of main lock	–
[U]	Deadbolt protrusion	20 mm
[X]	Latch (can be turned around)	–
[Y]	Deadbolt	–

INFO
The backset and dimensions for the latch and deadbolt protrusion refer to a 3 mm faceplate thickness.

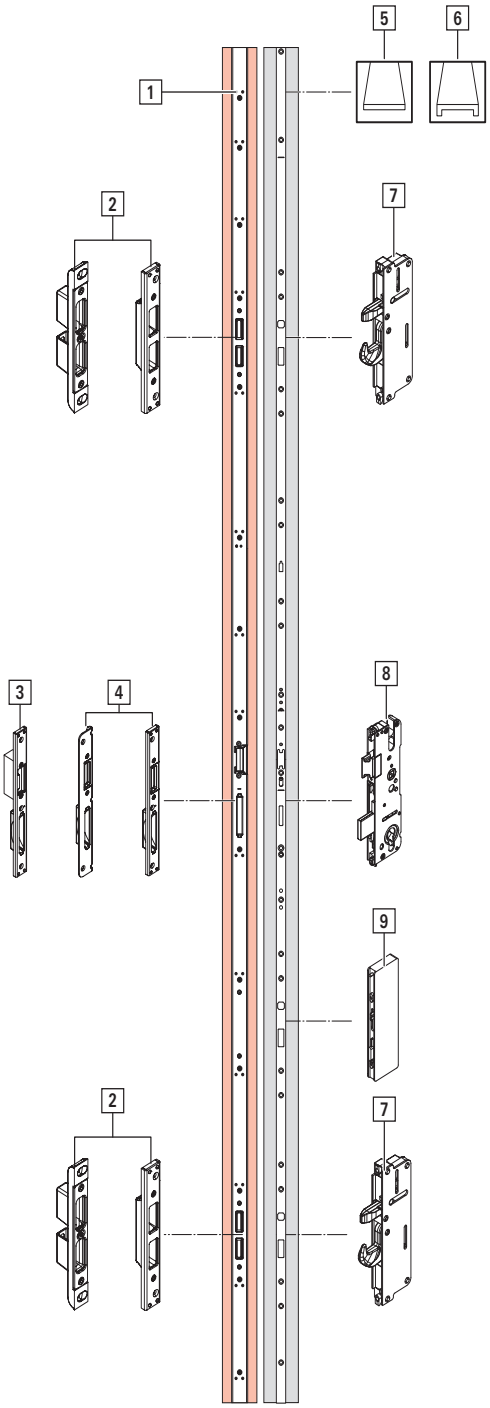
5.5 Overview of multipoint locks

Possible additional lock versions

Abbreviation	Meaning
2C	2 combination locks

Possible striker strip versions (combination locks)

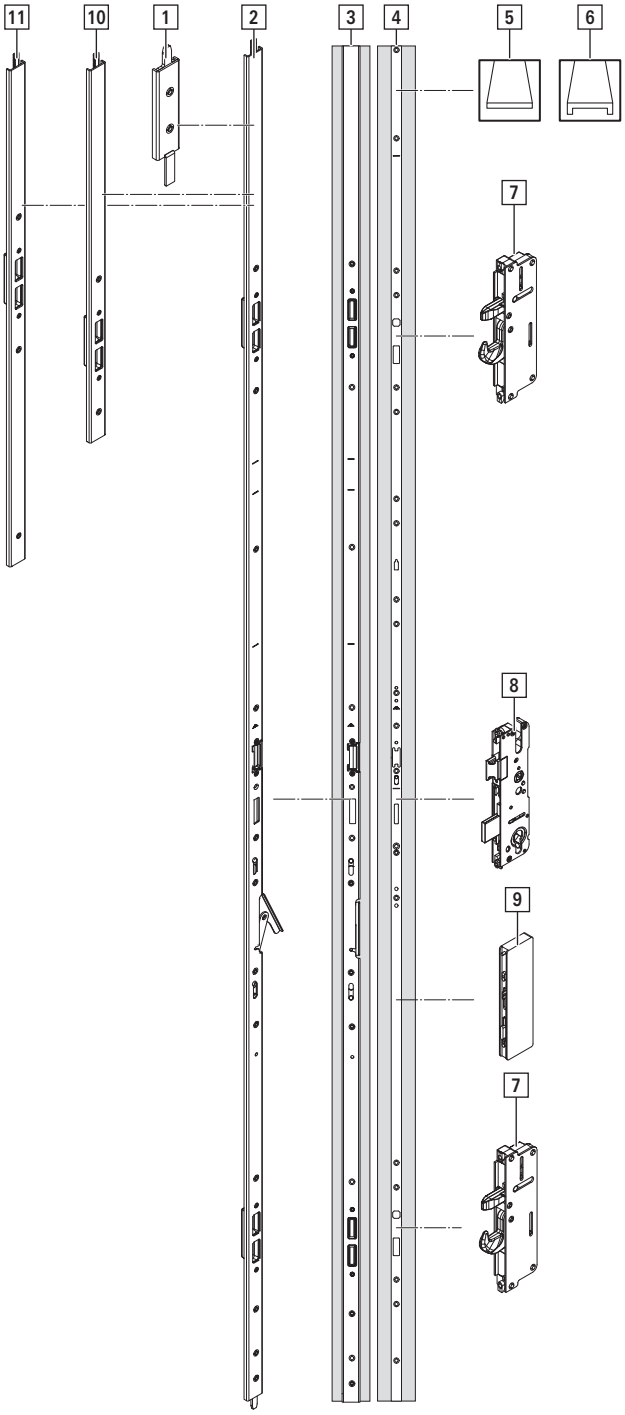
Abbreviation	Meaning
2C	2 combination locks



Frame		Leaf	
[1]	Striker strip	[6]	U-shaped faceplate
[2]	Combination striker	[7]	Additional lock (2C)
[3]	Electrical opener / deadbolt striker	[8]	Main lock E610, E611
[4]	Latch / deadbolt striker	[9]	Drive unit
[5]	Flat faceplate		

5.6 Double-leafed doors

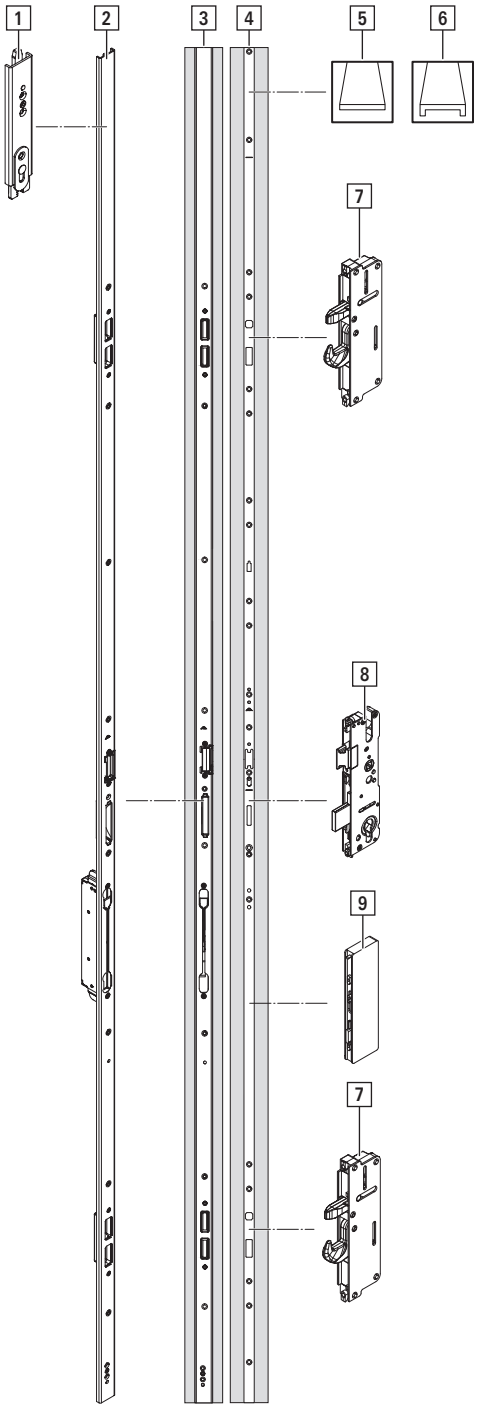
5.6.1 Lever-operated espagnolette, standard



Assignment	Meaning
[1]	Connector component for lever-operated espagnolette, standard
[2]	Lever-operated espagnolette, standard
[3]	Second opening leaf
[4]	First opening leaf
[5]	Flat faceplate
[6]	U-shaped faceplate
[7]	Additional lock (2C)
[8]	Main lock E610 and E611
[9]	Drive unit

Assignment	Meaning
[10]	Extension 600
[11]	Extension 800

5.6.2 Lever-operated espagnolette Plus



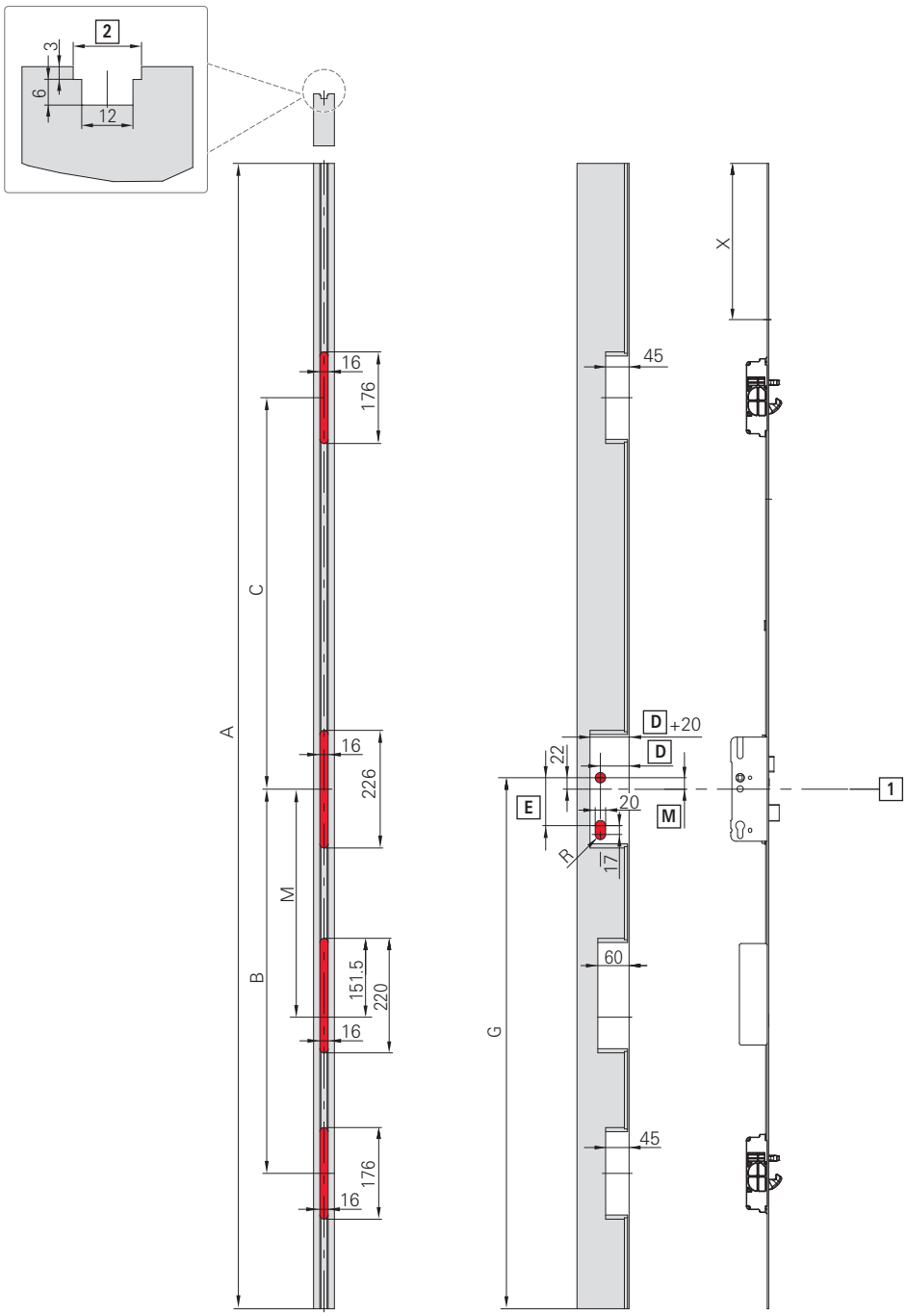
Assignment	Meaning
[1]	Connector component for lever-operated espagnolette Plus
[2]	Lever-operated espagnolette Plus
[3]	Second opening leaf
[4]	First opening leaf
[5]	Flat faceplate
[6]	U-shaped faceplate
[7]	Additional lock (2C)

Assignment	Meaning
[8]	Main lock E610, E611
[9]	Drive unit

5.7 Drilling and routing dimensions

5.7.1 Leaf

5.7.1.1 Additional lock (2C)



[1] Faceplate marking

[D] Backset

[E] Distance

[M] Centre of spindle-receiver to centre of main lock

[X] Cropping range

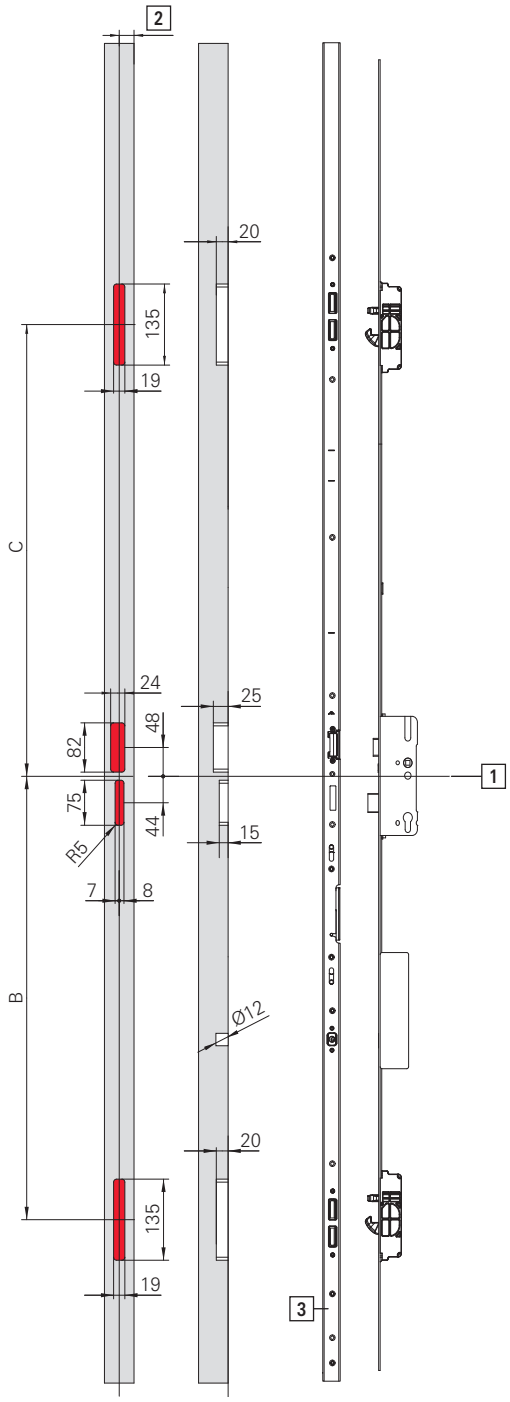
Carry out the routing work as shown in the drawing.

INFO
The routing width depends on the faceplate width used.

Handle height at various distances	
[G]	1020
[E]	92
[M]	22

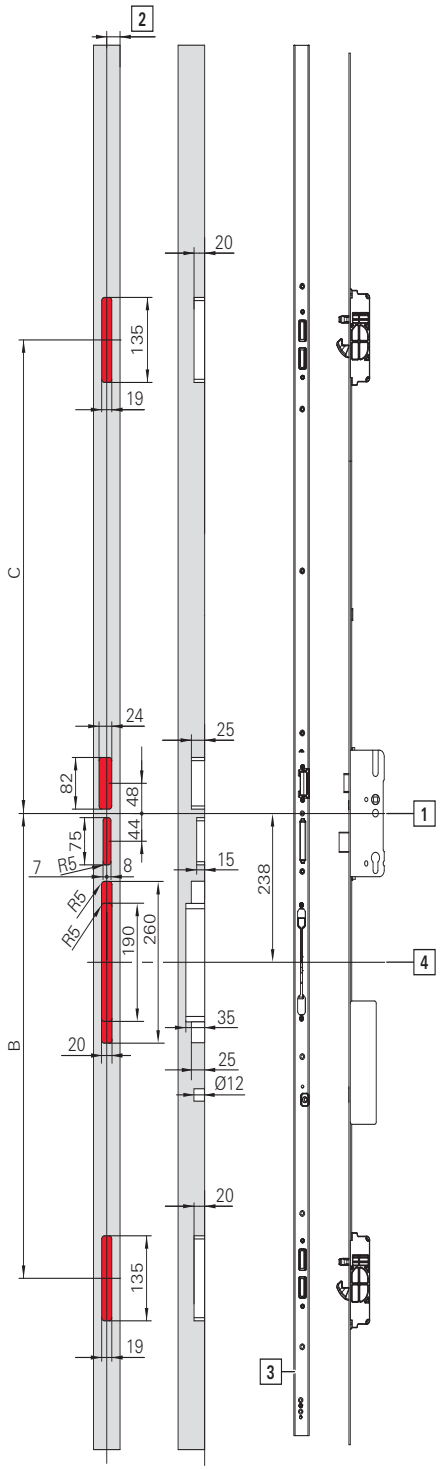
V locking pattern	A	B	C	X	G	M
02+E/03	2200	738	752	300	1020	438
02+E/07	2400	738	982	300	1020	438

5.7.1.2 Lever-operated espagnolette, standard



[1] Faceplate marking
[2] Routing axis
[3] Lever-operated espagnolette, standard

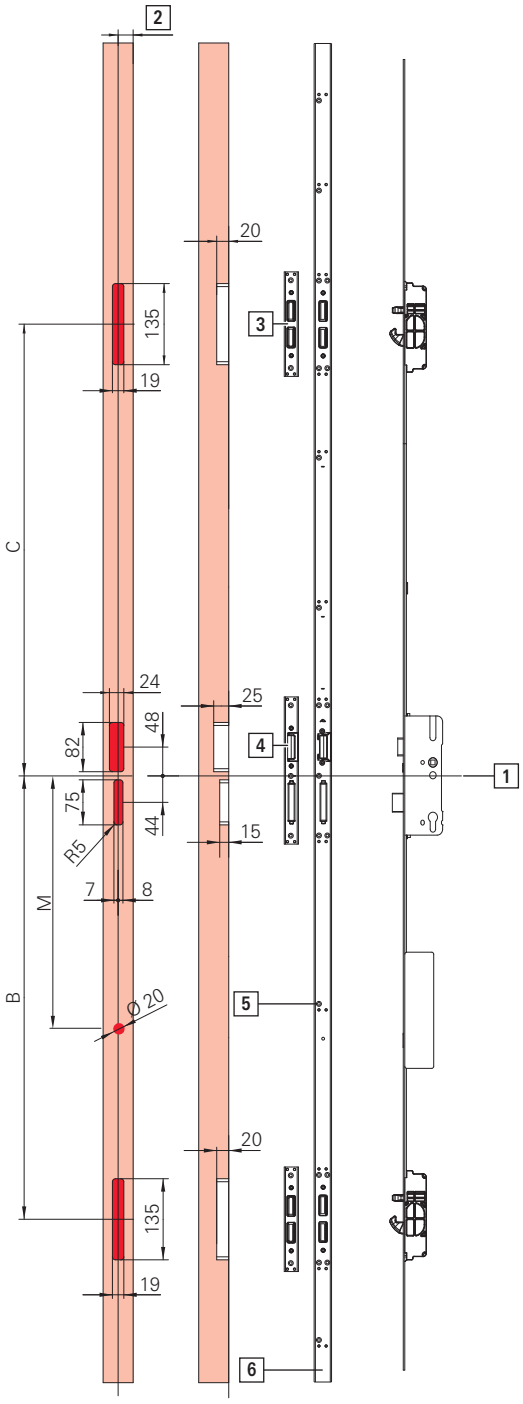
5.7.1.3 Lever-operated espagnolette Plus



[1] Faceplate marking
[2] Routing axis
[3] Lever-operated espagnolette Plus
[4] Centre of routing

5.7.2 Frame

5.7.2.1 Additional lock (2C)



[1] Faceplate marking
[2] Routing axis
[3] Combination striker
[4] Latch / deadbolt striker
[5] Drill hole for universal magnet
[6] Striker strip

▶ Carry out the routing work as shown in the drawing.

INFO

The routing refers to PVC and aluminium strikers.

Request the routing drawing for timber strikers.

INFO

The routing depth depends on the leg height on the striker.

Example – combination striker:

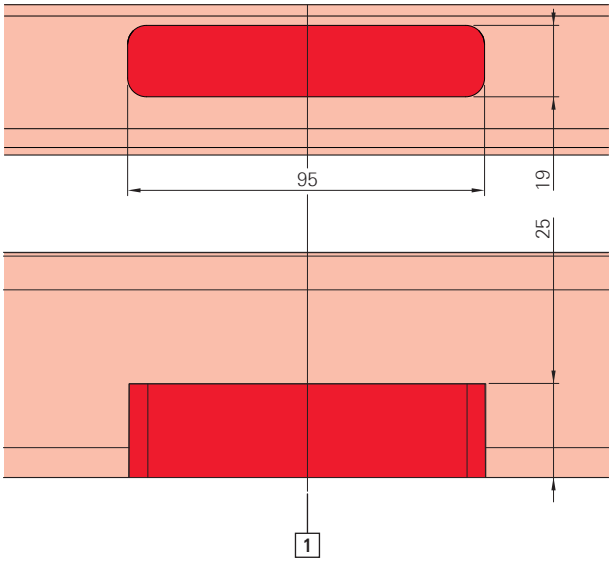
- Striker height = 24.5 mm
- Leg height = 7 mm
- Min. routing depth = 17.5 mm

INFO

The routing axis depends on the profile.

V locking pattern	B	C	M
02+E/03	738	752	438
02+E/07	738	982	438

5.7.2.2 Top shootbolt protrusion



[1] Centre of lever-operated espagnolette

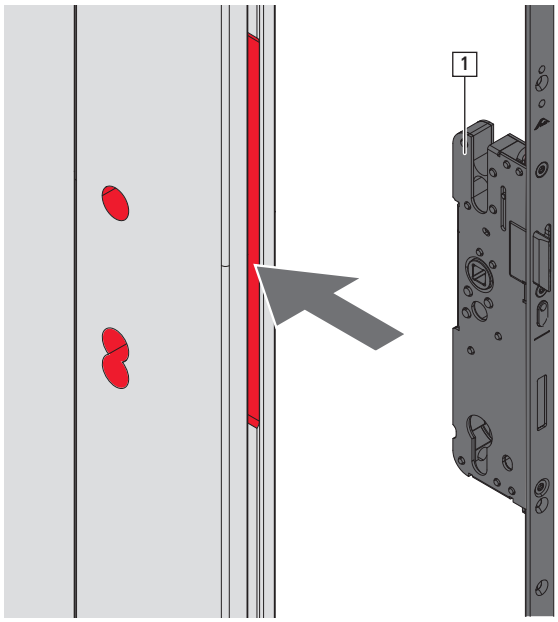
5.8 Leaf

5.8.1 Predrilling the door lever handle set

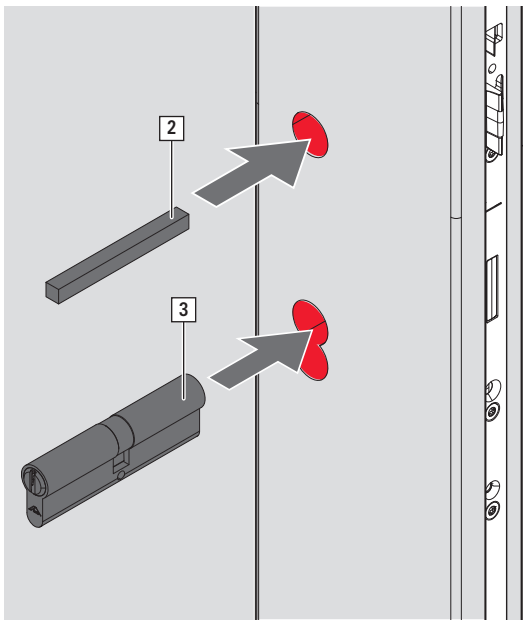
PRECONDITION
Drilling and routing work carried out on the leaf → *from page 37*.

ATTENTION
Incorrect drilling methods may result in property damage.
If holes are drilled in the lock area with the multipoint lock inserted, the lock may be damaged.
- Remove the multipoint lock before drilling.

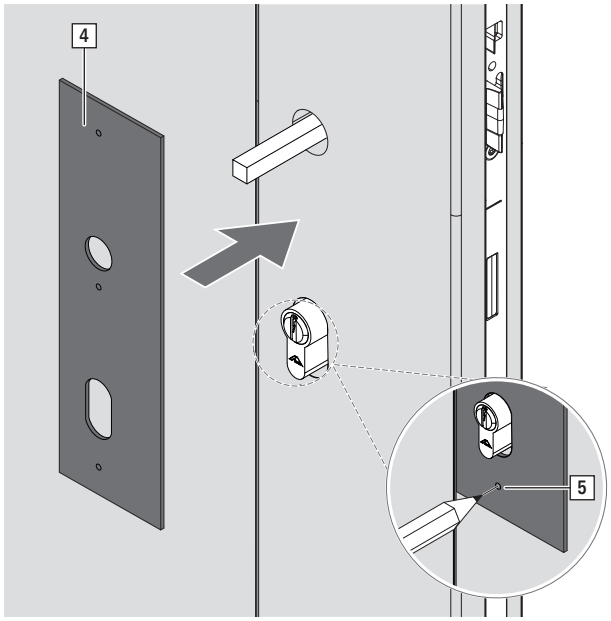
1. Insert the multipoint lock [1] into the leaf.



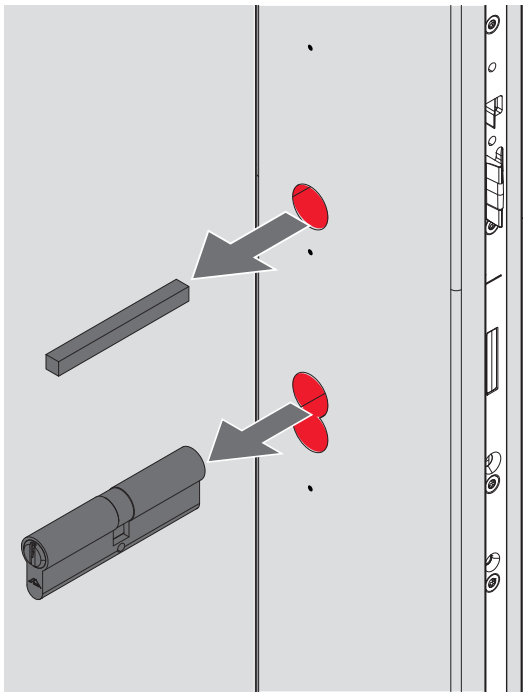
2. Insert the square spindle [2] and profile cylinder [3] in predrilled holes in the leaf.



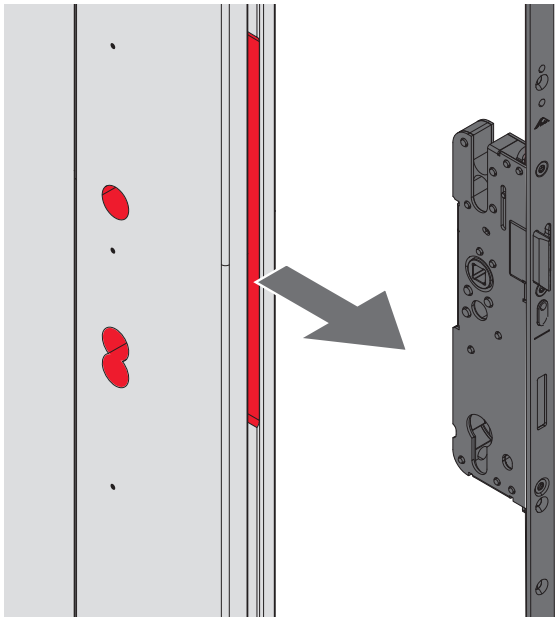
3. Position the drilling jig [4] from the relevant manufacturer and mark the drill holes [5].



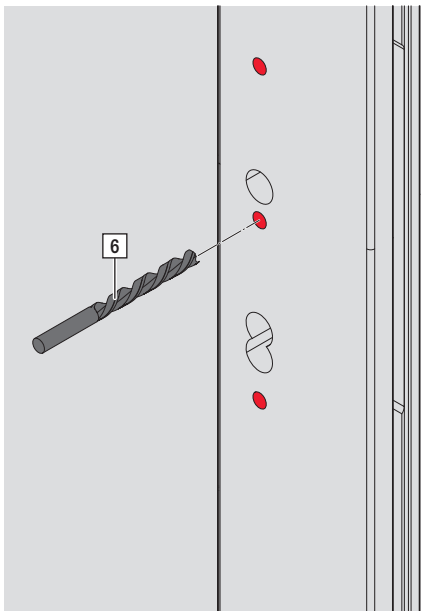
4. Remove the square spindle and profile cylinder.



5. Remove the multipoint lock.



6. Drill the holes [6].



7. If necessary, deburr the drill holes and remove chips.

5.8.2 Turning the latch around

ATTENTION

Turning the latch around incorrectly may cause property damage.

If the latch is installed incorrectly, the lock may be damaged.

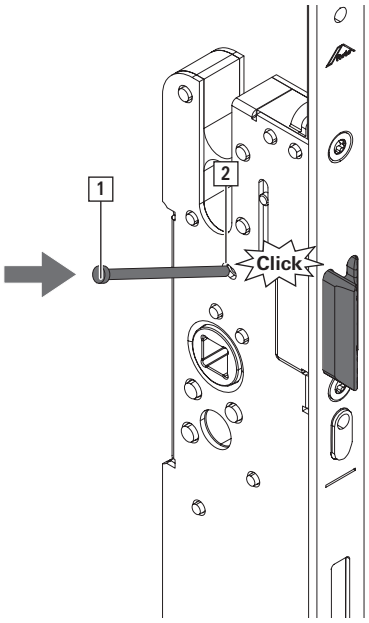
- Only turn the latch around in the vertical lock position.
- Do not use the door lever handle or key when turning the latch around.

The latch can be turned around to use the main lock for DIN left or DIN right doors.

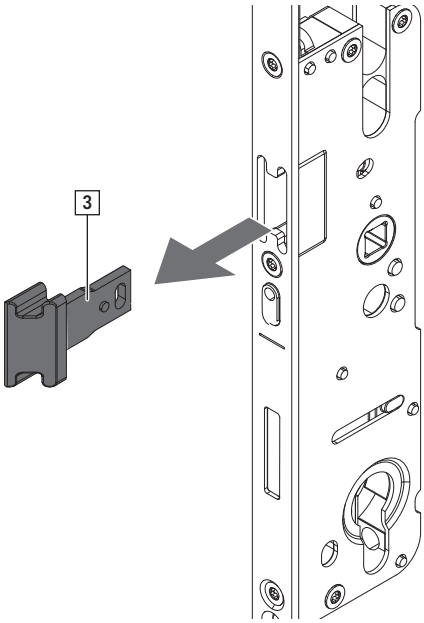
1. Push the pin (Ø max. 2.5 mm) [1] into the inspection opening [2] until you hear it click.

INFO

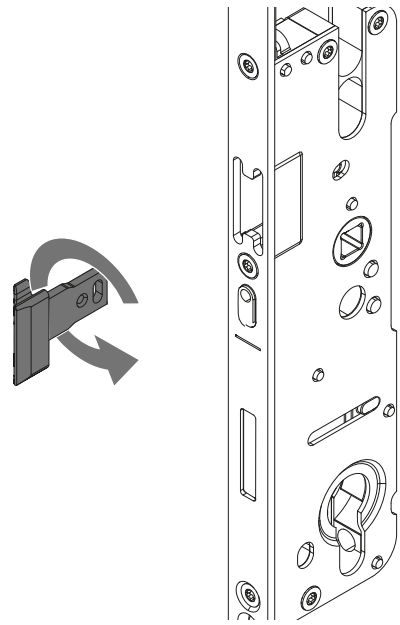
Do not push out the locking pin while doing so.



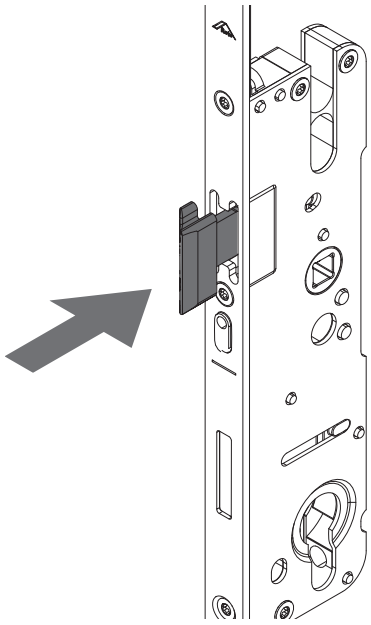
2. Remove the latch [3].



3. Turn the latch 180°.



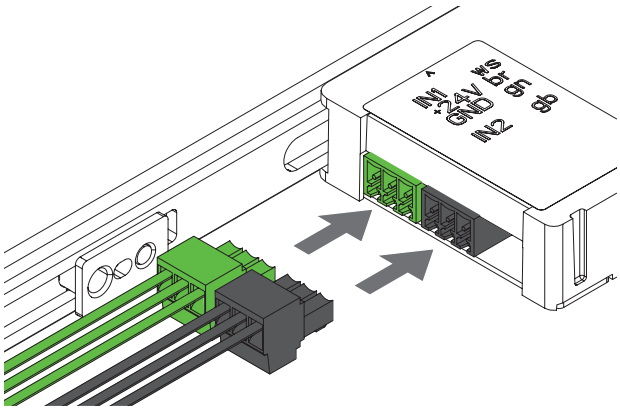
4. Insert the latch straight into the shaft and push it in.



5. Push the locking pin in.

5.8.3 Preparing to connect Eneo to the power supply

1. Insert the cable (type E, EZ or cable junction for lengthways installation).



Additional accessories → *from page 61* and connection to access control systems → *from page 95*.

5.8.4 Multipoint lock

Fasten the multipoint lock with the recommended screw type (M4).

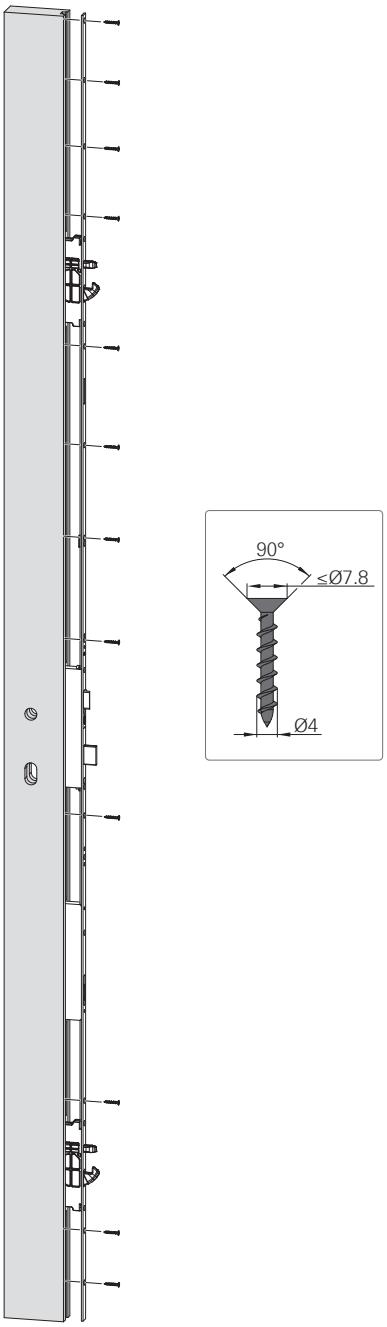
INFO

Do not use stainless-steel screws on the Roto Sil surface.

Use stainless-steel screws (type A2) on stainless-steel components.

INFO

The screw length depends on the profile used.

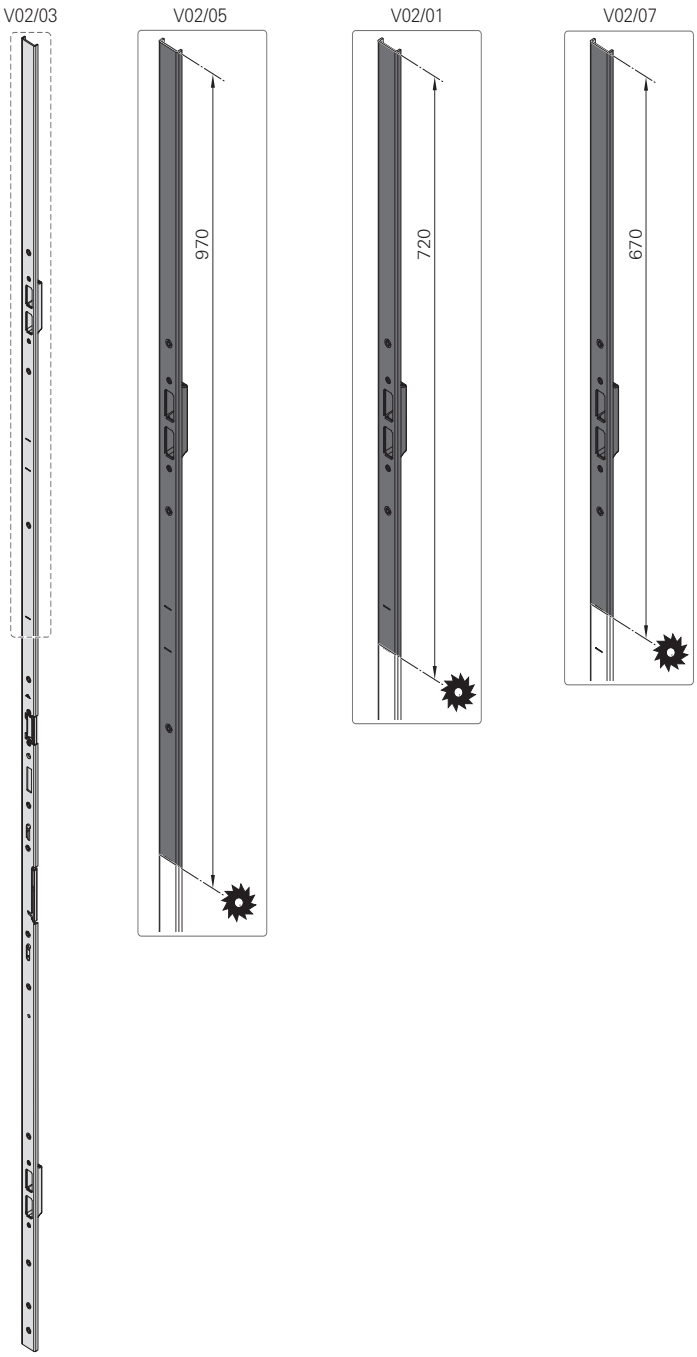


5.8.5 Lever-operated espagnolette, standard (second opening leaf)

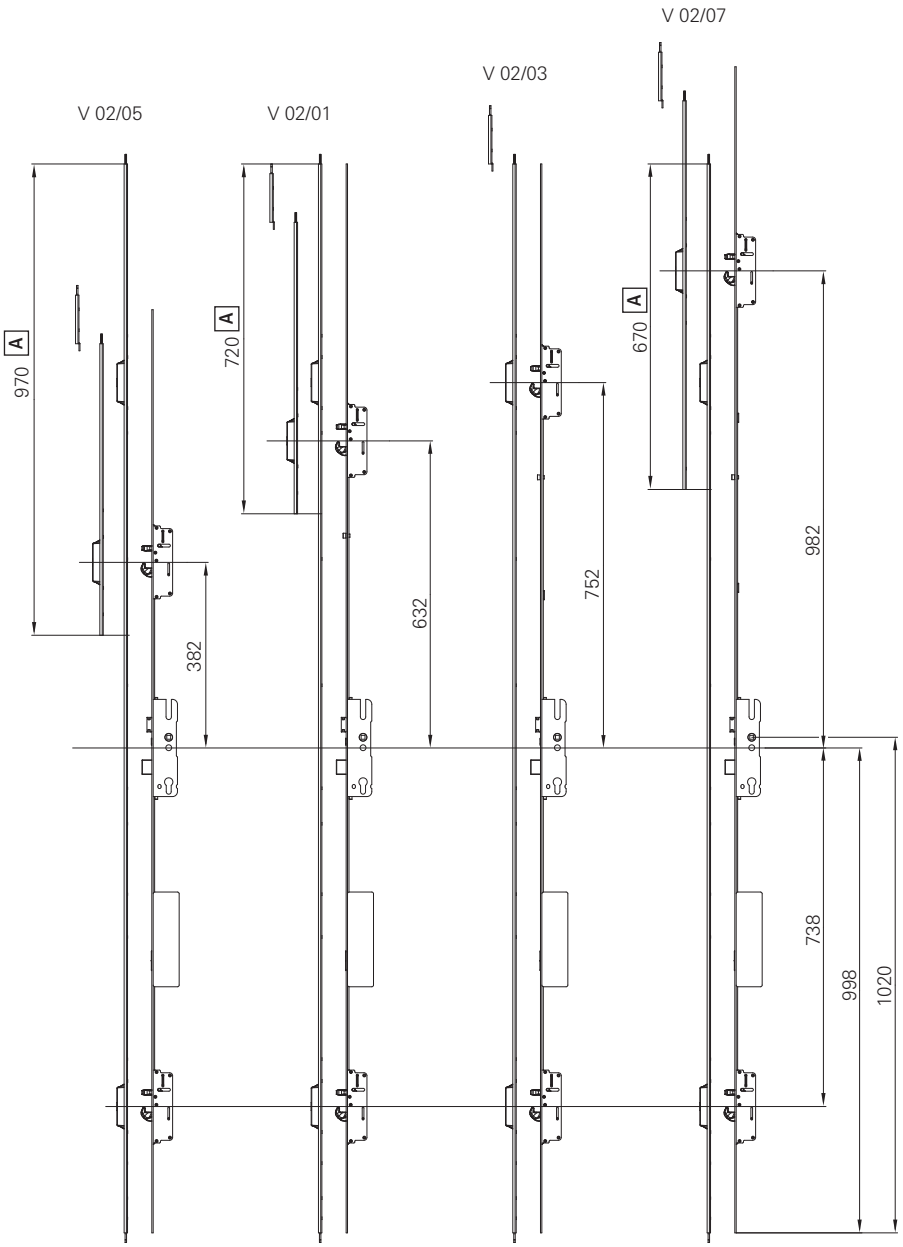
5.8.5.1 Variable locking pattern

The lever-operated espagnolette, standard with locking pattern V02/03 is adaptable. The lever-operated espagnolette, standard can be machined to adapt it to locking patterns V02/01, V02/05 and V02/07.

The diagram below shows the individual markings where the lever-operated espagnolette, standard can be adapted.



5.8.5.2 Overview of locking patterns



[A] Cropping

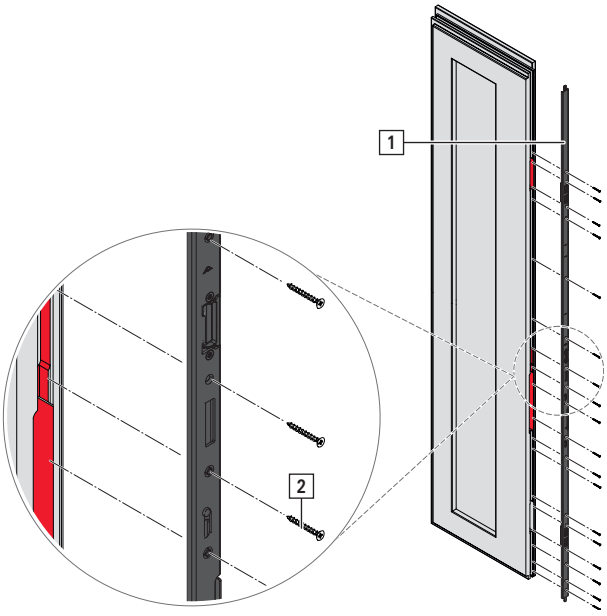
Pattern	Min. SRH	Max. SRH
V02/05	1615	1930
V02/01	1931	1974
V02/03	1975	2214
V02/07	2215	2430

5.8.5.3 Installation

1. Insert the lever-operated espagnolette, standard [1] into the leaf groove.

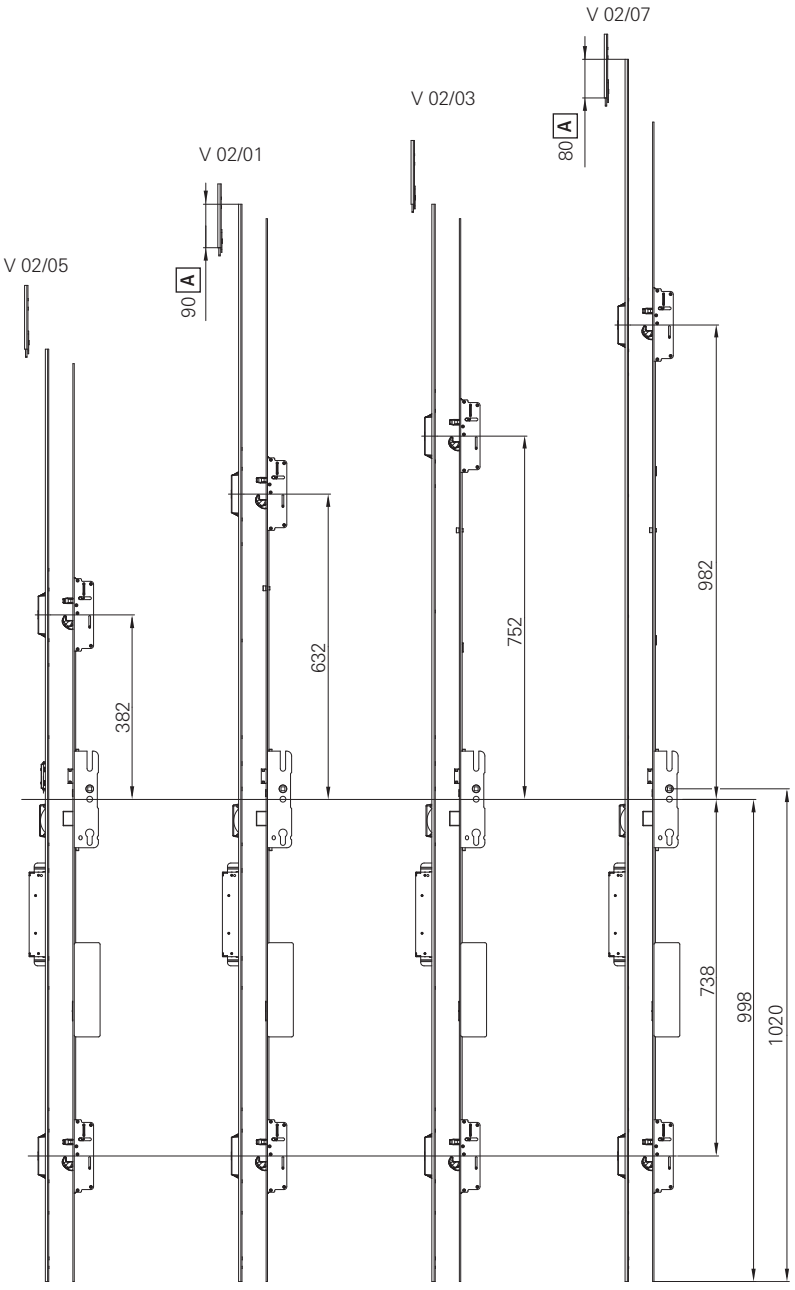
2. Fasten the lever-operated espagnolette, standard with screws [2].

INFO
Fill every screw position. Turn in screws straight.
→ *from page 25*



5.8.6 Lever-operated espagnolette Plus (second opening leaf)

5.8.6.1 Overview of locking patterns



[A] Cropping

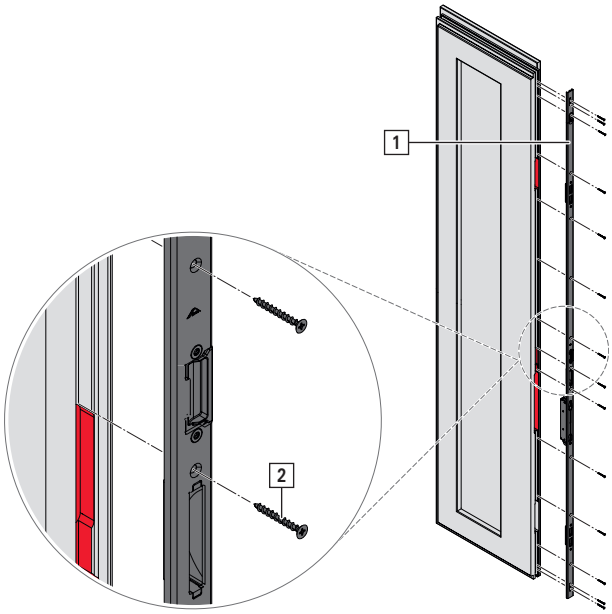
Pattern	Min. SRH	Max. SRH
V02/05	1760	1900
V02/01	1901	2070
V02/03	2071	2270
V02/07	2271	2590

5.8.6.2 Installation

1. Insert the lever-operated espagnolette Plus [1] into the leaf groove.

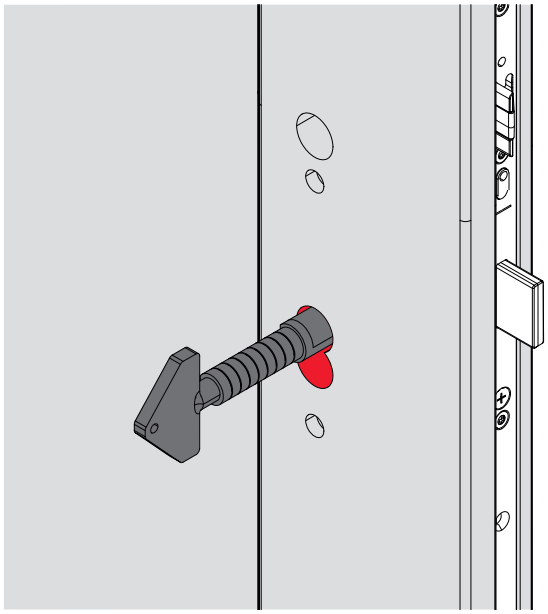
2. Fasten the lever-operated espagnolette Plus with screws [2].

INFO
Fill every screw position. Turn in screws straight.
→ *from page 25*



5.8.7 Door lever handle set

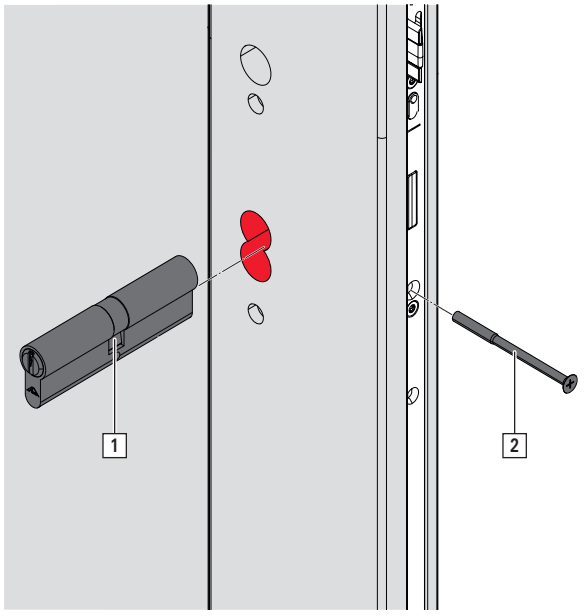
INFO
When an original cylinder is not installed, only lock and unlock the door using the universal access key.



INFO
Install the profile cylinder without subjecting it to stress and align at a right angle to the leaf.

INFO
When changing the profile cylinder, choose a faceplate screw length based on the backset.

1. Insert the profile cylinder [1] and fasten with a screw [2].

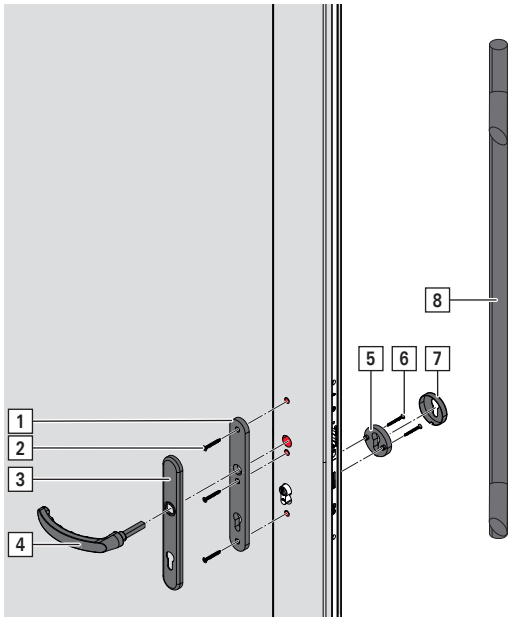


Door lever handle set with long plate and escutcheon

INFO
Fit long plates and escutcheons without subjecting them to stress.

1. Fit the door lever handle set with long plate and escutcheon according to the hardware manufacturer's specifications.

   [1] Long plate
   [2] Screw for long plate
   [3] Cover for long plate
   [4] Door lever handle
   [5] Escutcheon
   [6] Screw for escutcheon
   [7] Cover for escutcheon
   [8] Pull handle



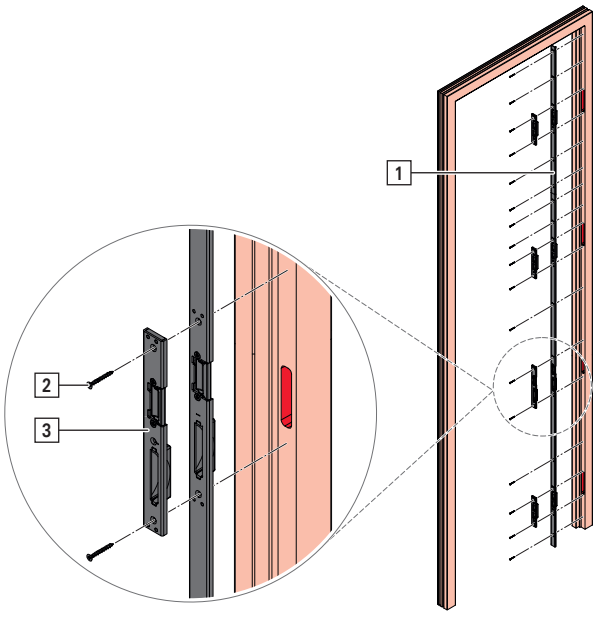
5.9 Frame

5.9.1 Striker strip / striker

1. Insert the striker strip [1] or striker [3] into the frame.

2. Fasten the striker strip or striker with screws [2].

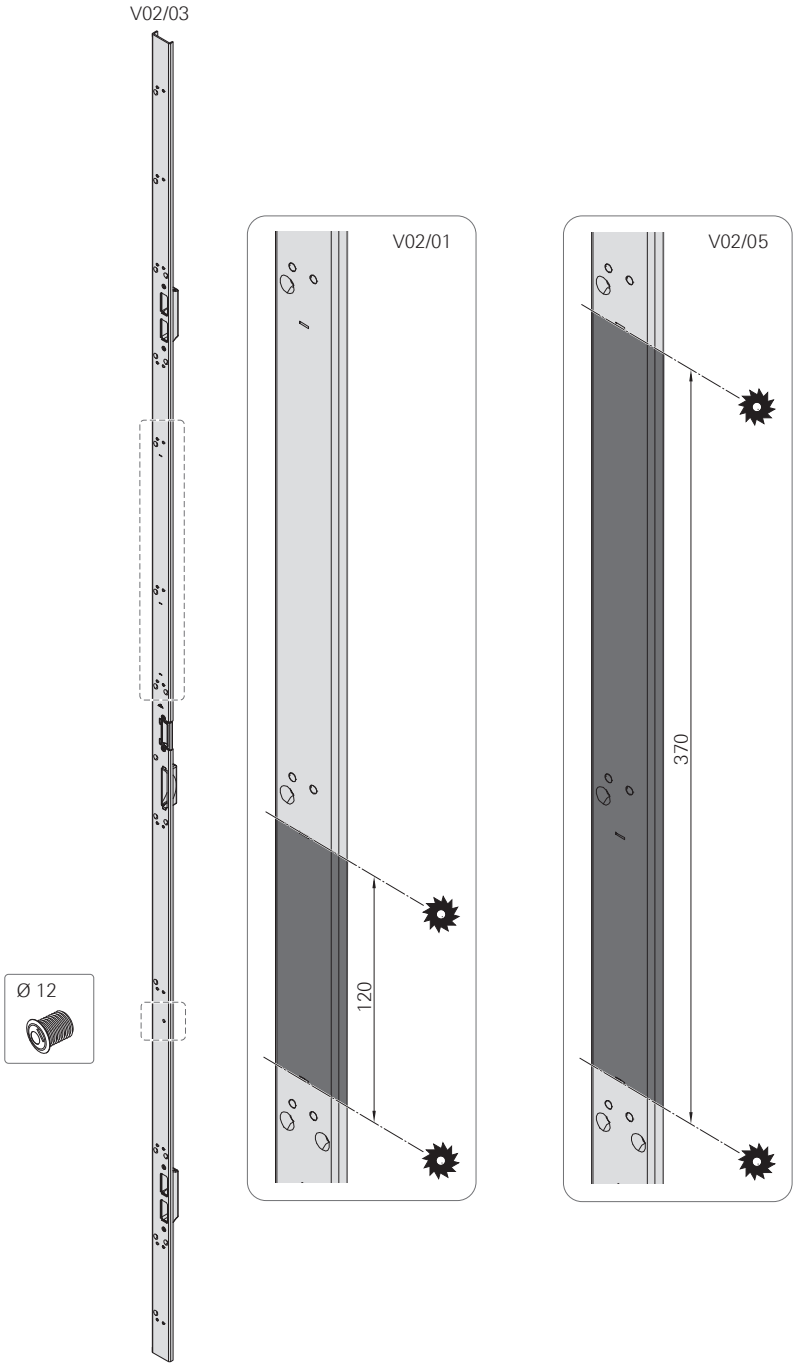
INFO
Fill every screw position. Turn in screws straight.
→ *from page 25*



5.9.2 Variable striker strips

Striker strips with locking pattern V02/03 are adaptable. The variable striker strip can be machined to adapt it to locking pattern V02/01 or V02/05.

The diagram below shows the individual markings where the striker strip can be adapted.



INFO
Universal magnet is mandatory for E610 – Eneo CC and E611 – Eneo CF.

5.9.3 Installation

Fasten the striker strip or strikers with the recommended screw type (Ø4).

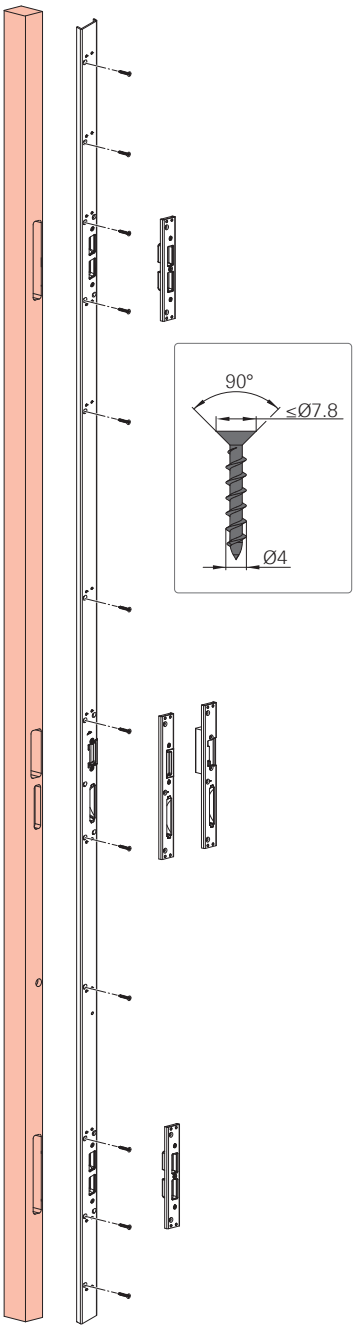
INFO

Do not use stainless-steel screws on the Roto Sil surface.

Use stainless-steel screws (type A2) on stainless-steel components.

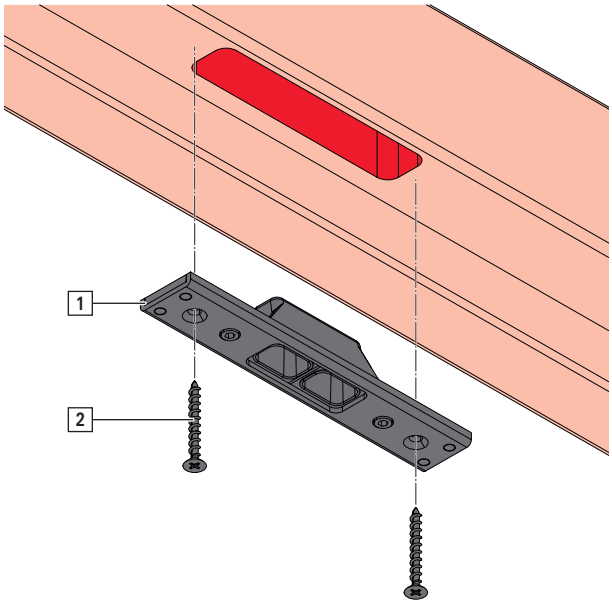
INFO

The screw length depends on the profile used.



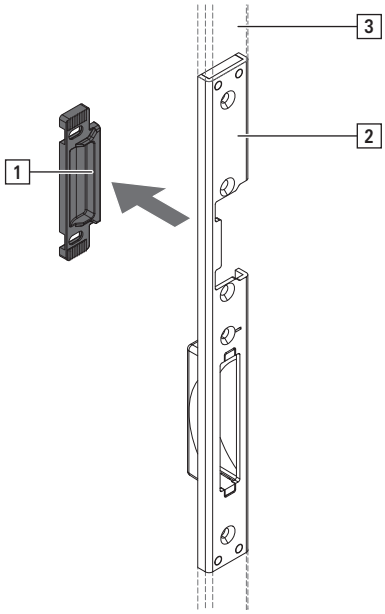
5.9.4 Shootbolt protrusion striker

1. Fasten the shootbolt protrusion striker [1] with two screws [2].



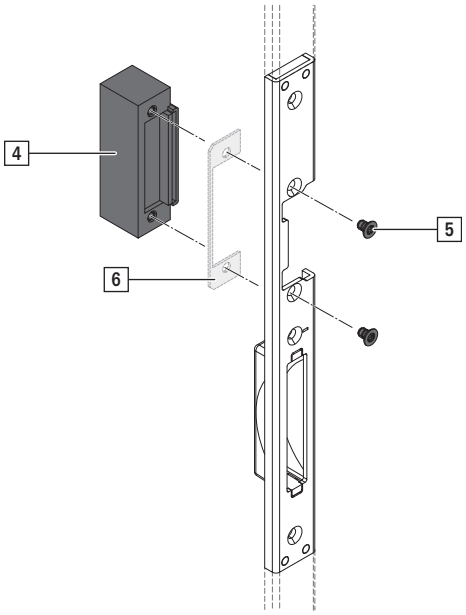
5.9.5 Electrical opener

1. Remove the replaceable part [1] from the striker [2] or from the striker strip [3].



2. Fasten the electrical opener [4] to the striker or striker strip with two screws [5].

   Optional: install the packer [6].



6 Accessories

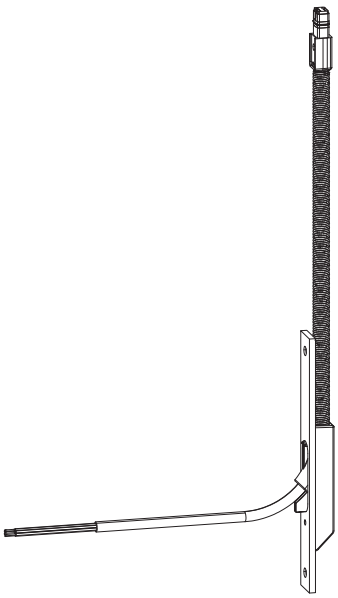
6.1 Cable junction

6.1.1 Overview of versions

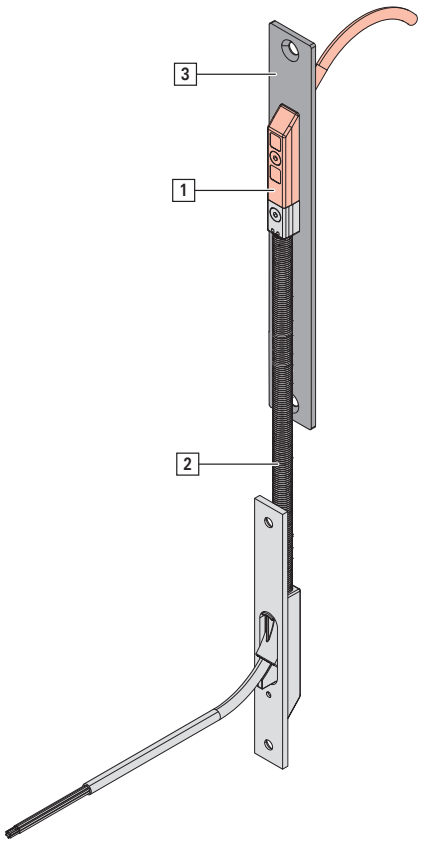
Version 1 – rebate clearance 12 / 16 mm

Mat. no. 820187

Mat. no. 820255



Installation situation

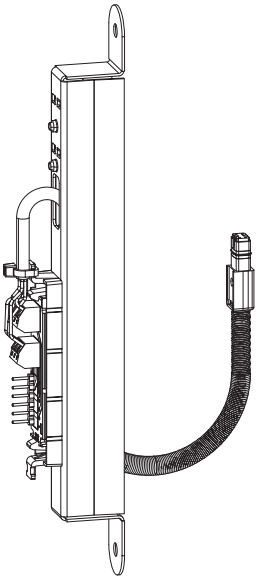


[1] Frame component
[2] Leaf component
[3] Cover plate

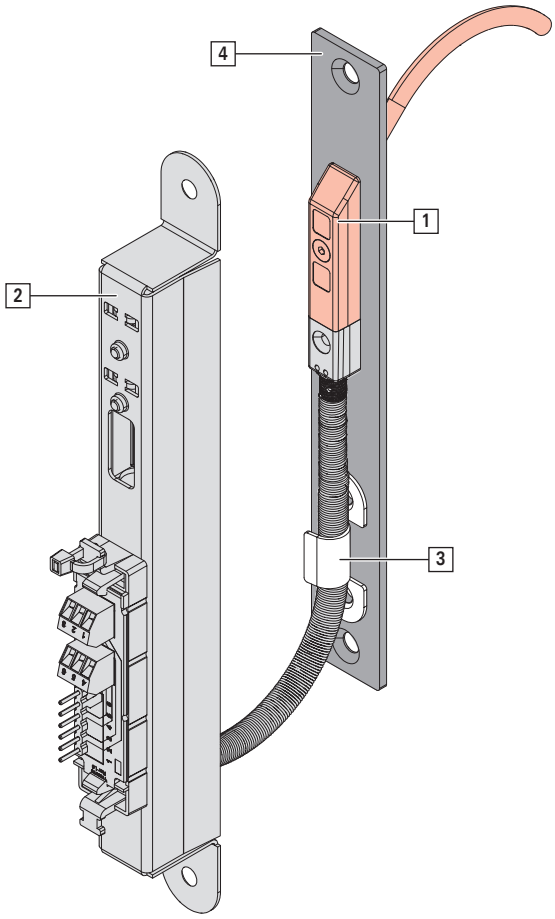
Version 2 – rebate clearance 4 / 12 mm

Mat. no. 820187

Mat. no. 820194



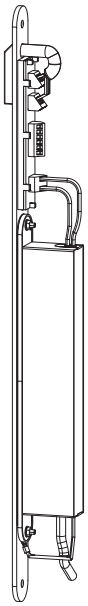
Installation situation



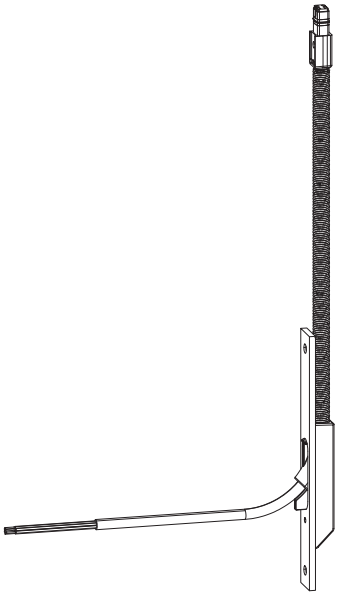
[1] Frame component
[2] Leaf component
[3] Retaining bracket
[4] Cover plate

Version 3 – rebate clearance 12 / 16 mm

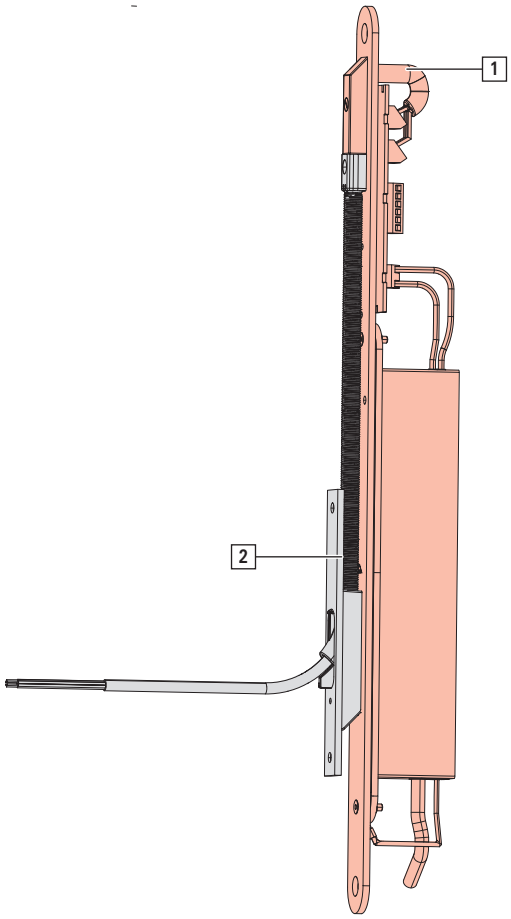
Mat. no. 817028



Mat. no. 820255



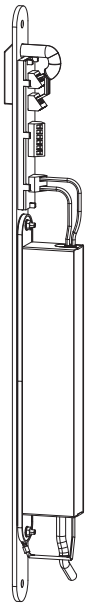
Installation situation



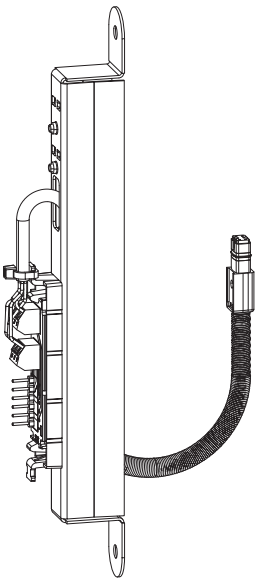
[1] Frame component
[2] Leaf component

Version 4 – rebate clearance 4 / 12 mm

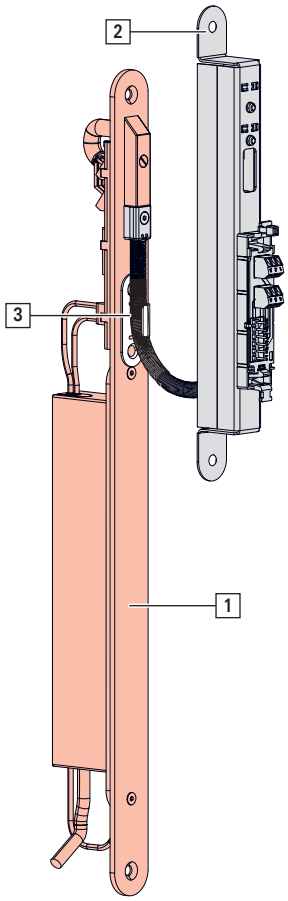
Mat. no. 817028



Mat. no. 820194



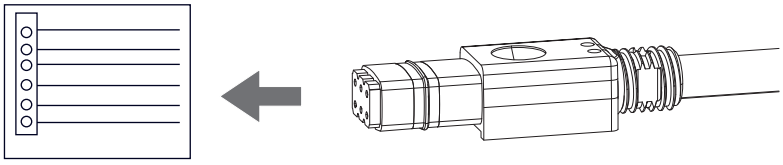
Installation situation



[1] Frame component
[2] Leaf component
[3] Retaining bracket

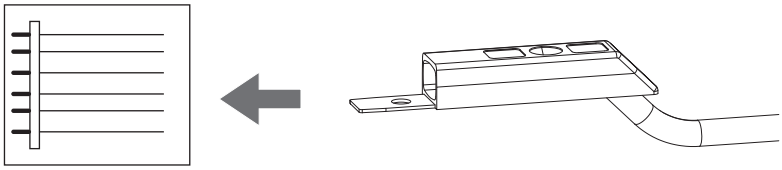
6.1.2 Bush and connector

Schematic diagram of bush



Cable: LIF9Y11Y, 6 x 0.25 mm²

Schematic diagram of connector



Cable: LIF9Y11Y, 6 x 0.25 mm²

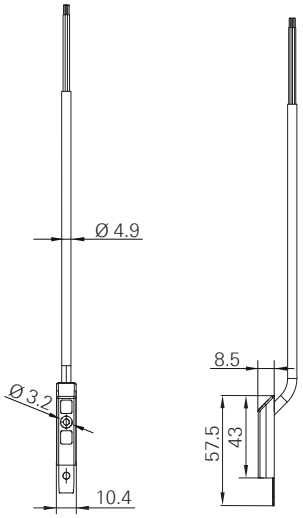
6.1.3 Processing instructions

- Due to the large number of profiles and hardware variants on the market, it is not possible to make any generally applicable statements about installation, because some of the dimensions of these systems differ.
- Before starting installation, inspect the installation location and the available space in the rebate area.
- Installation location: door frame or door rebate
- Prevent torsion (twisting of the cable) along the entire length of the cable, specifically in the metal spring.
- Drill holes for routing the cable Ø 16. Deburr the drill holes and remove swarf.
- In addition to the generally applicable rules of good engineering practice, the following technical regulations must be complied with, in particular: VDS 2311, VDE 0100.

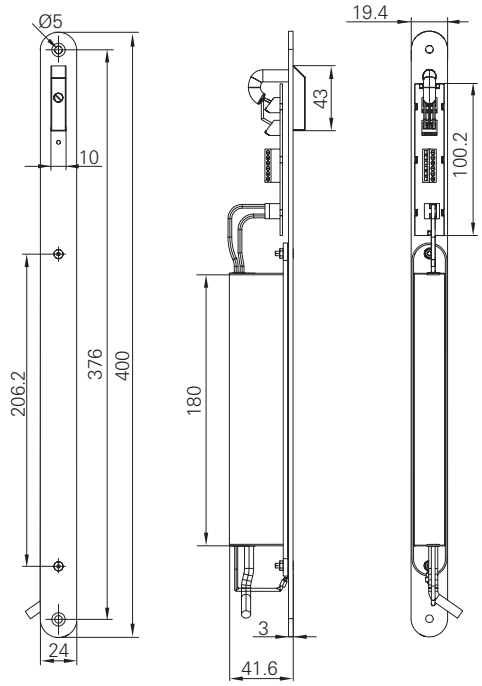
6.1.4 Dimensions

Frame components

Frame side without power supply unit

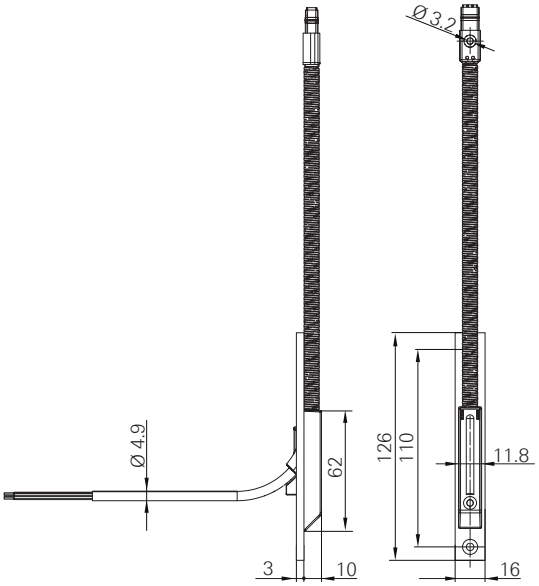


Frame side with power supply unit

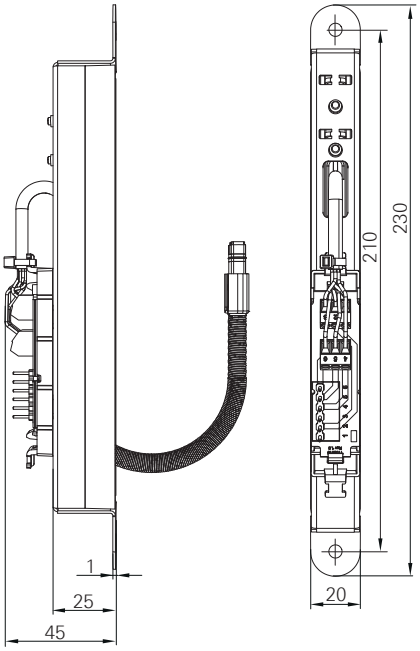


Sash components

Sash side without casing (lengthways installation)



Sash side with casing (U-shape)



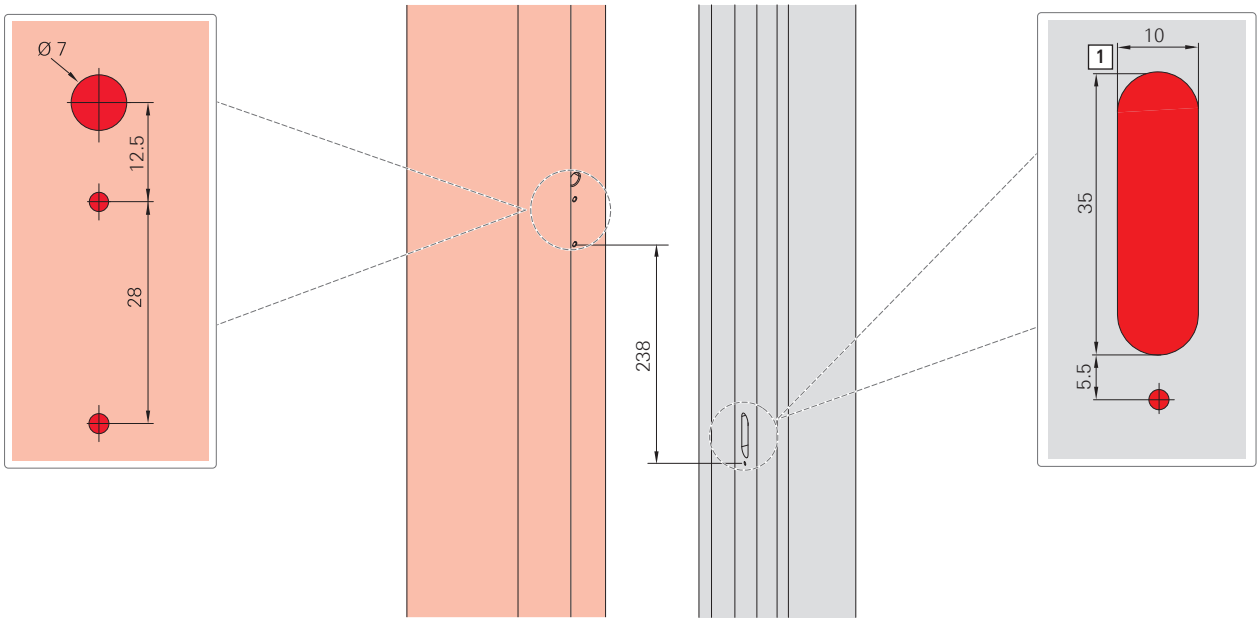
6.1.5 Drilling and routing dimensions

INFO
The drill holes must be free from burr and swarf.

INFO
Only tighten screws by hand.

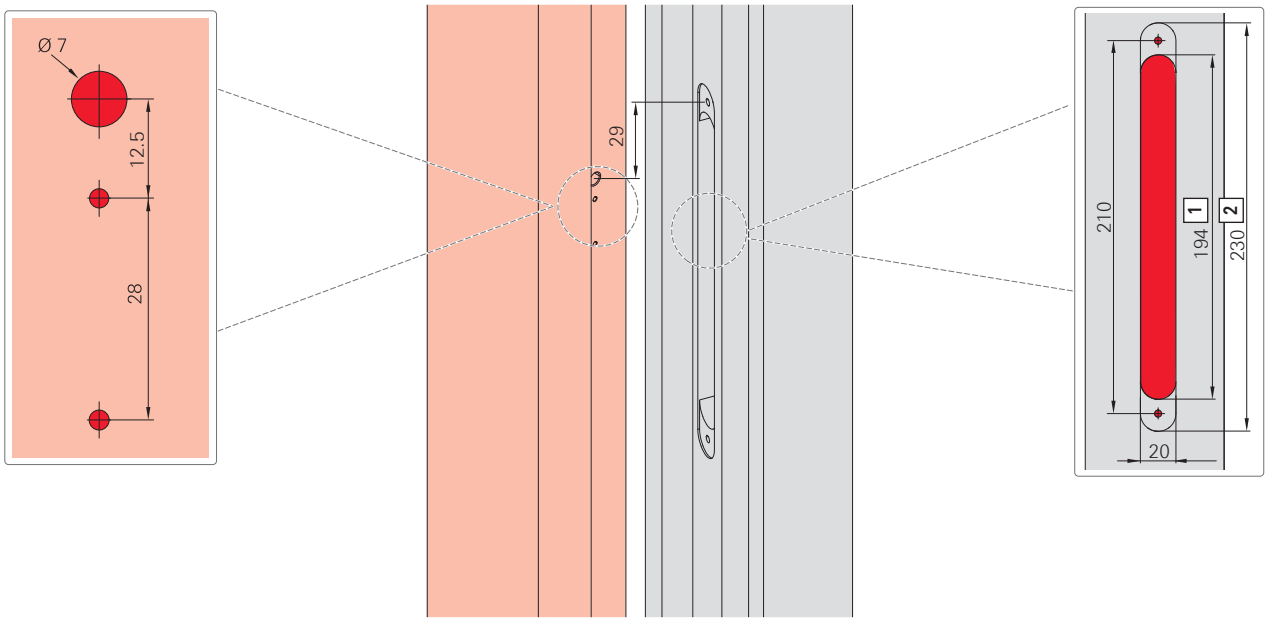
Recommendation: predrill screw holes.

Frame component without power supply unit + leaf component without casing



[1] Routing depth: 30 mm

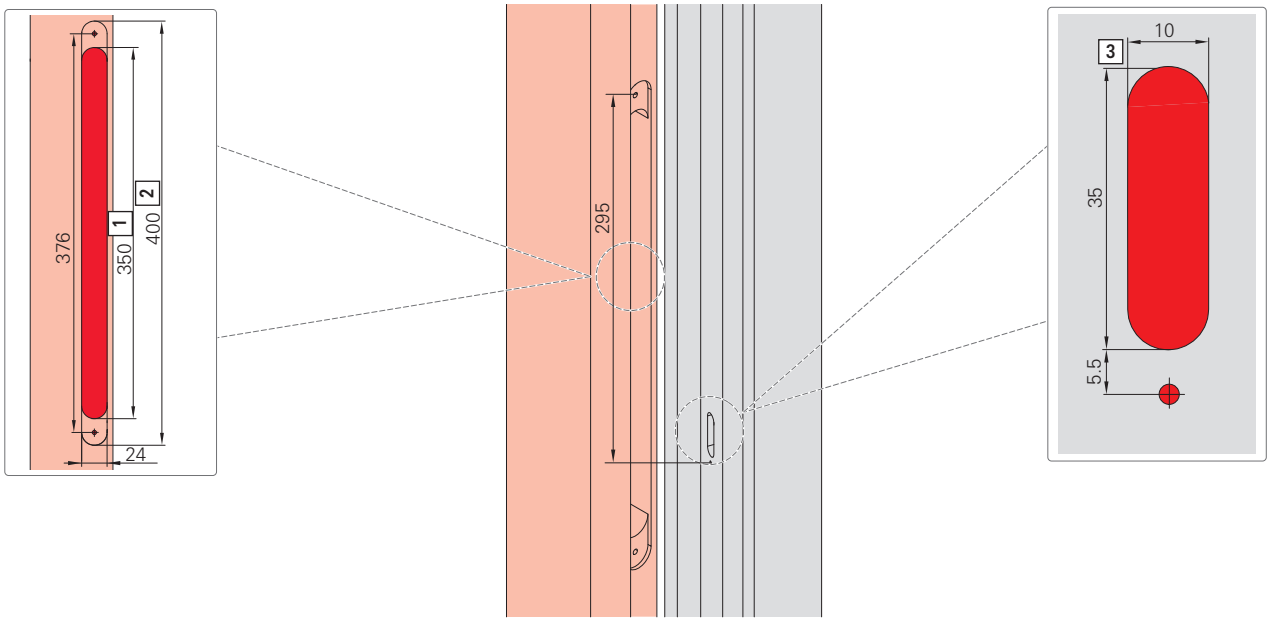
Frame component without power supply unit + leaf component with casing



[1] Routing depth: 60 mm

[2] Routing depth: 1 mm

Frame component with power supply unit + leaf component without casing

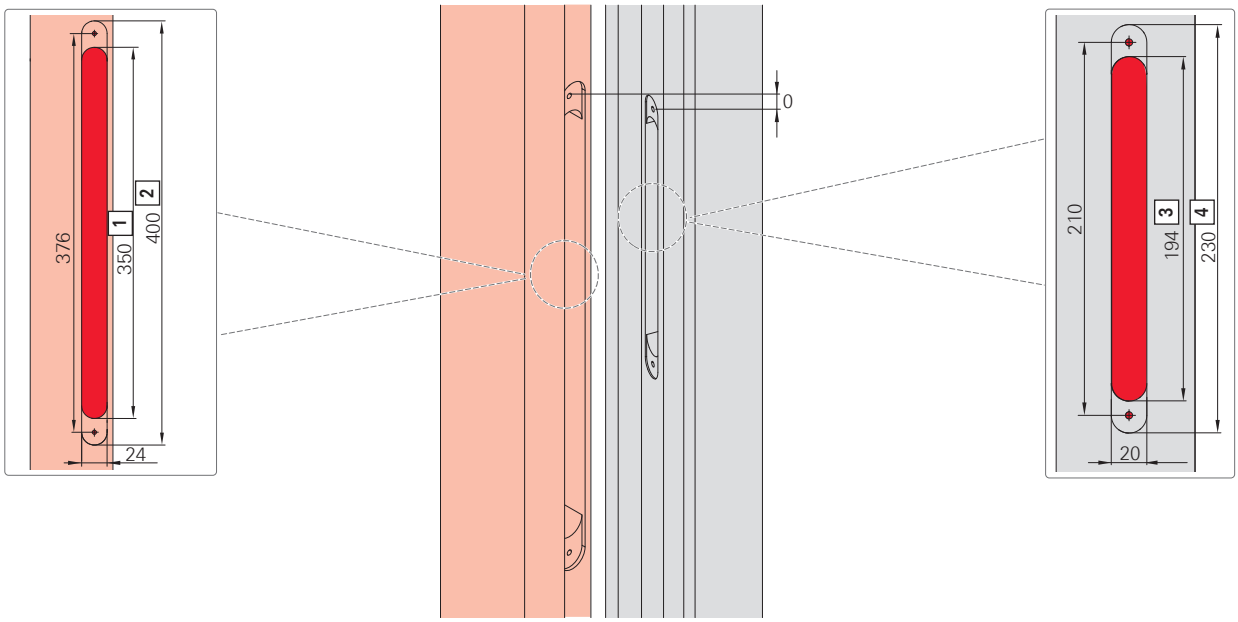


[1] Routing depth: 42 mm

[2] Routing depth: 3 mm

[3] Routing depth: 30 mm

Frame component with power supply unit + leaf component with casing



[1] Routing depth: 42 mm

[2] Routing depth: 3 mm

[3] Routing depth: 60 mm

[4] Routing depth: 1 mm

6.1.6 Installation

1. Carry out the routing and drilling work → *from page 68*.

> **INFO**
> Only turn in screws by hand.
>
> Predrilling the screw holes is recommended.

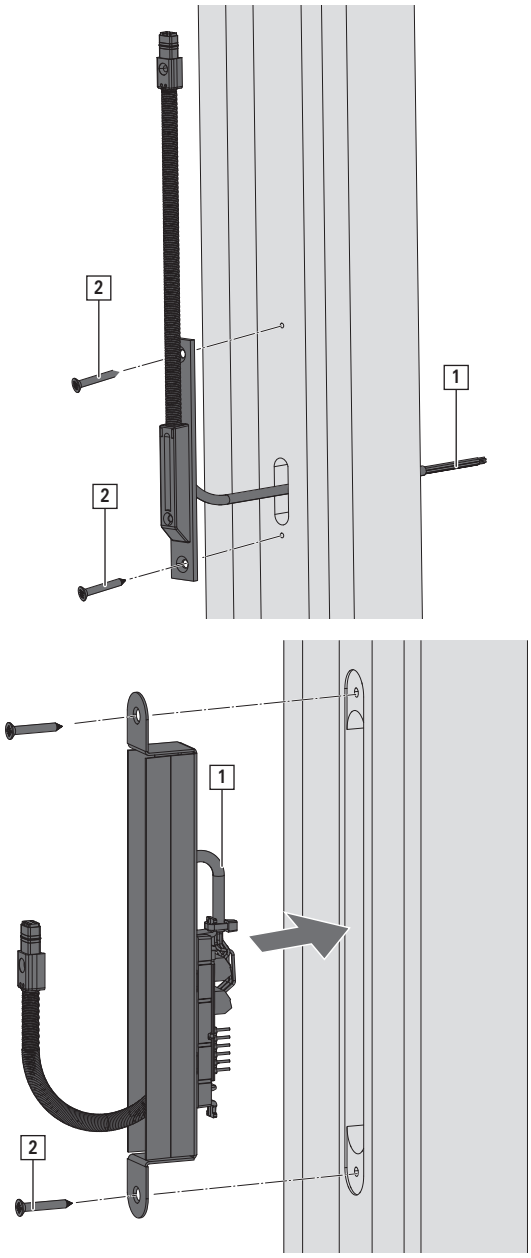
2. Route the cable [1] through the leaf or frame.

   Lay a cable loop, ensuring that there is enough spare cable.

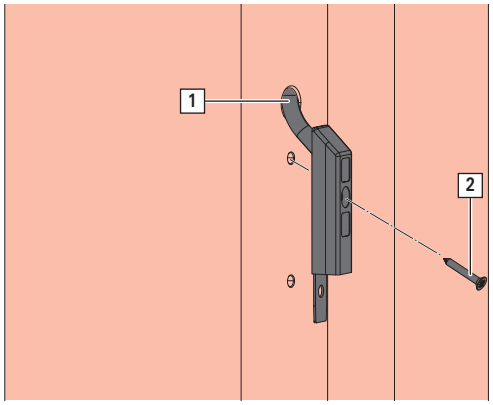
> **INFO**
> Do not crush or damage the cable when installing the frame.

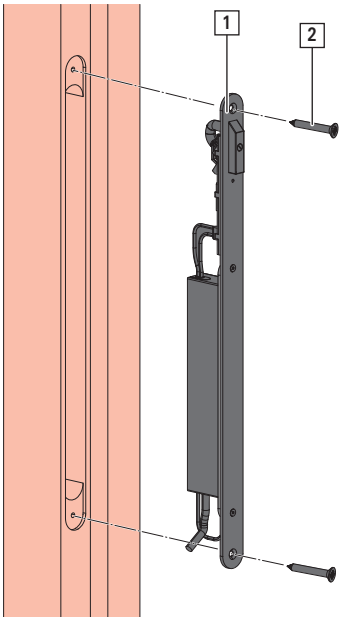
3. Fasten the mounting box with screws [2].

Leaf side



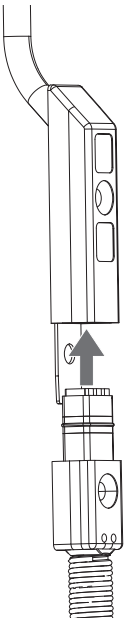
4. **Frame side**





5. Fasten the connector side with a screw.

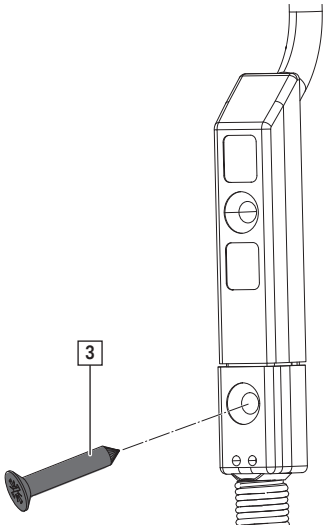
6. Hinge the leaf and establish the plug connection.



ATTENTION
Property damage due to short-circuit.
Chips in the connector or bush may cause a short-circuit.
▶ Keep the connector and bush clean.

INFO
Note the anti-twist protection of the plug connection.

7. Fasten the plug connection with a screw [3].



8. Check that the cable junction with built-in power supply unit is working properly → *from page 73*.

INFO
Do not exceed the technical values (voltage, current, power) → *from page 116*.

INFO
Only an electrician may connect the frame component with built-in power supply unit (mat. no. 817028) to the 230 V power supply.

DANGER
Risk of death caused by electric shock!
Current can lead to fatal injuries.
- Take extra care when handling live components.
- Only an electrician may connect the power supply unit to the mains voltage.
- Observe and comply with the respective national regulations (in Germany VDE 0100 and others).

6.1.7 Performance test for cable junction with built-in power supply unit

1. Connect the mains cable to the 230 V power supply.

INFO
Only an electrician is permitted to establish the connection to the 230 V power supply.

2. Check the power supply at the power supply unit.
   LED is lit up green when there is voltage.

6.1.8 Fault assistance

Fault	Cause	Corrective action	To be carried out by
No power supply.	Loose plug connection.	Plug in the connector so that it is secure.	■
	Cable breakage.	Replace the cable.	■
	No power connection.	Check the plug connections. Check the power supply (LED must be lit). Check the power supply unit.	■

☐ = May be carried out by a specialist company or the end user

■ = **Must** be carried out by a specialist company

6.1.9 Dismantling

1. Stop the power supply. Pull out the connector.

2. Undo and remove the screw.

3. Undo the plug connection with a hex key or suitable screwdriver.

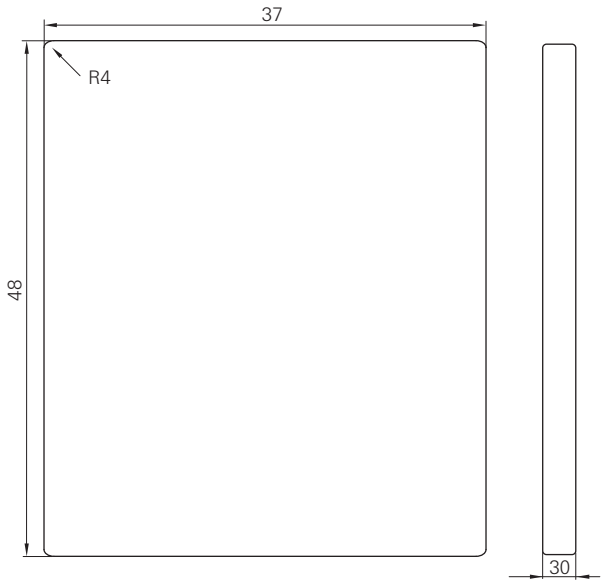
ATTENTION
A faulty spring may cause property damage.
Undoing the plug connection in an uncontrolled manner may damage the spring.
- ▶ Do not pull on the spring to undo the plug connection.
- ▶ Use a hex key or suitable screwdriver to undo the plug connection.

4. Unhinge the sash.

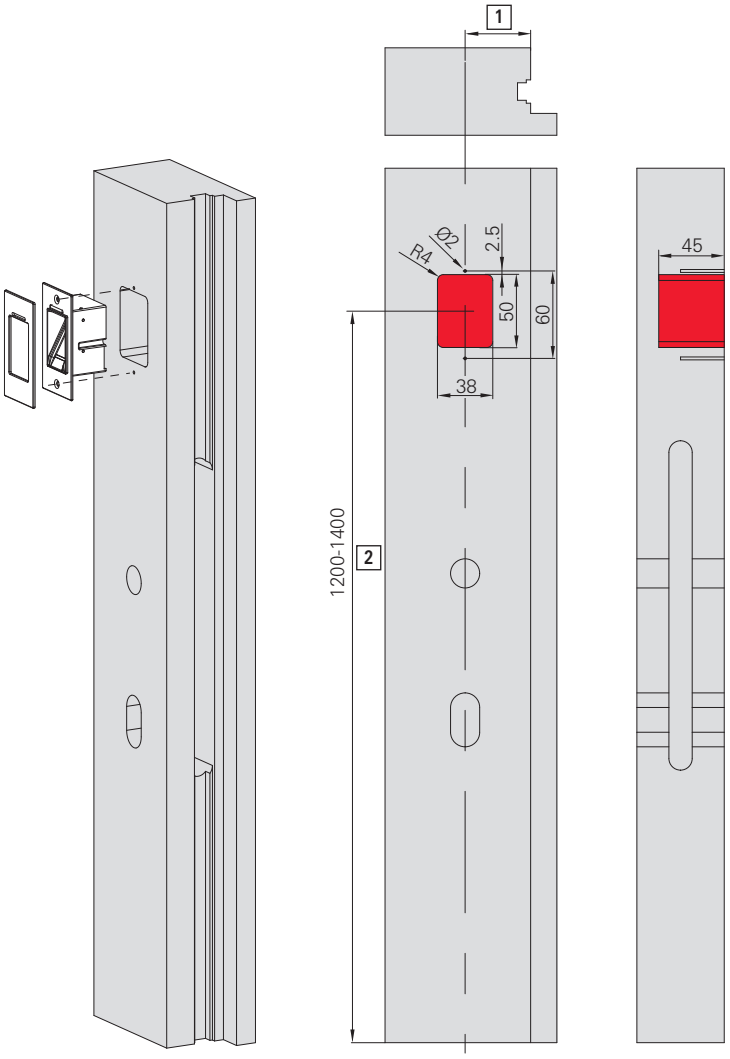
5. Protect the plug connection against dust and moisture.

6.2 Finger scan

6.2.1 Dimensions



6.2.2 Routing and drilling dimensions



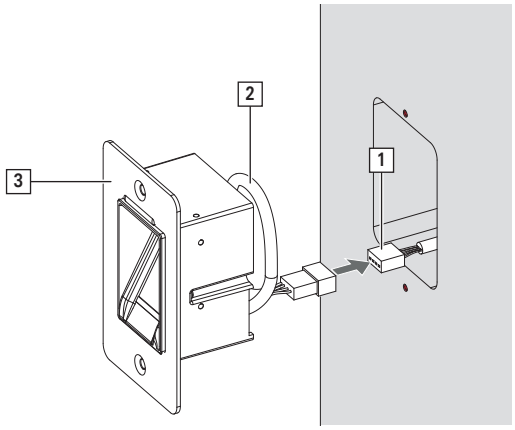
[1] Main lock backset
[2] Above lower edge of leaf

6.2.3 Installation

INFO
When laying the cables, ensure that the black box is installed such that it can be easily accessed for maintenance (for example near the drive unit routing).

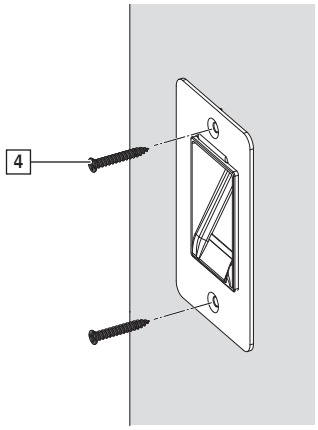
INFO
Ensure that the cable is not damaged during installation. Lay the cable in the glass rebate if possible.

1. Connect the cable [1] (Plug&Play);
   install the cable loop [2].

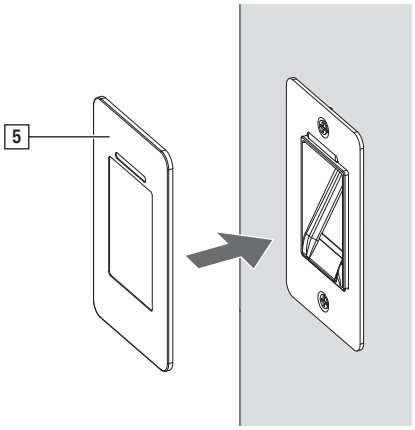


2. Insert the housing [3] into the routing.

3. Fasten with two screws [4].



4. Fit the cover [5].



INFO
The finger scan and black box come as a pair. If the finger scan is changed, the black box always has to be replaced as well.

6.2.4 Testing using the autotest function

Automatic testing mechanism for testing the cabling and connections with the motor lock. It is not necessary to calibrate the master or user fingerprints.

⇨ Only possible in the delivery state.

Autotest function	LED
Finger scan is ready for operation.	● ●
Remote control: press the **0** button.	○ ●
Confirm with **OK**.	● ○
Autotest is started automatically The cabling, pairing, encryption and connections are tested	
Autotest successful (after approx. 10 seconds).	● ○

INFO
The autotest is limited to a total of ten cycles, with one cycle already having been performed in the production plant.

6.2.5 Overview

[1] Green LED
[2] Red LED
[3] Blue LED
[4] Sensor

Remote control

Notes

- There is no access control when delivered. Any person can be calibrated and therefore open the door.
- When delivered, all LEDs are continuously lit (when connected correctly).
- Storage capacity up to 150 fingerprints.
- Wait for around three minutes during initial use or after a power failure (settings are retained).
- The latent fingerprint is removed automatically after each use. This prevents misuse.
- After each use, the latent fingerprint is removed and the sensor surface is cleaned automatically. Additional cleaning with water or chemical cleaning agents is not necessary. Cleaning agents may damage the sensor.
- The mobile device (smartphone, etc.) is only used as a display. User details (log files, fingerprints, etc.) are only saved locally in the finger scan. Data is not saved over Wi-Fi, in the cloud or on external storage devices (e.g. smartphones). This means that the security of the main door is not put at risk if a mobile phone is lost.
- Mobile devices do not have to be explicitly registered, but instead are reauthenticated each time a connection is established.
- The sensitivity of the finger scan can be configured via the BioKey® app. This may be necessary for the elderly or children.

6.2.6 Definitions

Master fingerprint (e.g. left index fingerprint)

Calibrate and delete user fingerprints.

The master fingerprint cannot be used to open doors.

User fingerprint (e.g. right index fingerprint)

Opens the door.

6.2.7 Calibrating the master fingerprint

INFO

Master fingerprints are for management purposes only and are not for opening the door. Different fingerprints must be used for the master fingerprint and user fingerprint.

Master fingerprint = management

User fingerprint = open door

INFO

Wash your hands and apply hand cream before calibrating master / user fingerprints.

Calibrating the master fingerprint	LED
Finger scan is in the factory settings state.	● ●
Move the master finger over the sensor.	
Repeat this process at least six times. The LEDs light up each time.	
The master fingerprint is calibrated.	● ○
Finger scan is ready for operation.	○ ○

INFO

During the calibration process, if a finger has been moved over the sensor and not accepted as the master fingerprint, the green and red LEDs will remain lit.

Repeat the calibration process.

Once the master fingerprint is calibrated, the device is ready for operation.

Only the blue LED is lit.

User fingerprints are calibrated via the BioKey® app.

6.2.8 BioKey® app

INFO

In the delivery state, the master fingerprint has to be calibrated first **before** opening the app.

A BioKey® app is available for Android and iOS operating systems.

GET IT ON Google Play

Download on the App Store

BioKey® app

1. Download the BioKey® app.
2. Install the BioKey® app on a mobile device (such as smartphone, tablet, etc.).
3. Activate Bluetooth on your mobile device and enter your location when prompted.

6.2.9 Calibrating user fingerprints

INFO
Wash your hands and apply hand cream before calibrating master / user fingerprints.

⇨ The BioKey® app is installed on the mobile device.

Calibrating user fingerprints	LED
Open the BioKey® app. Activate Bluetooth.	
Tap on the BioKey® app and select a device.	
Move the master finger over the sensor. Or Enter the master code [1] using the remote control. Confirm with **OK**.	○ ○ ● ● ○ ○
Select **User** in the menu.	
Add a user (**+**) and assign a name.	
Add fingerprint.	
Calibrating a new fingerprint The number of inputs appears on the display. The LED lights up green: OK The LED lights up red: repeat the process.	● ○
The fingerprint is calibrated.	● ● 3x ○ ○

Calibrating the master fingerprint via the BioKey® app

Master fingerprints can also be calibrated via the BioKey® app.

To do so, first move the slider in the BioKey® app to **Master user**.

For the calibration steps, see *Calibrating user fingerprints*.

[1] The master code label is located on the remote control, in the product leaflet and on the black box.

6.2.10 Blocking or approving user fingerprints

Blocking users

1. Open the BioKey® app and pair it.
2. Select **User** in the menu.
3. Select the user.
4. Slide the slider to **Block user**.

Approving users

1. Open the BioKey® app and pair it.
2. Select **User** in the menu.
3. Select the user.
4. Slide the **Block user** slider back.

6.2.11 Reset

Deleting an individual user

(user fingerprint / master fingerprint)

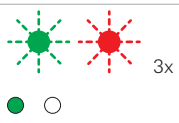
1. Open the BioKey® app.
2. Select the **User** menu.
3. Select the user that is to be deleted.
4. Tap **Delete**.

Deleting all users

⇨ Master code (reset code): 6-digit code, see remote control.

⇨ Close the BioKey® app and deactivate Bluetooth.

Remote control

Deleting all users	LED
Press the **DA** button.	
Enter the master code. The green LED flashes each time a button is pressed.	
Confirm with **OK**.	

The finger scan has returned to the factory settings state (red, green and blue LEDs are continuously lit).

6.2.12 Changing the master code

INFO
For security reasons, change the master code after commissioning.

Remote control

1. Press the **D** button.
2. Press the **E** button.
3. Enter the old code.
4. Confirm with **OK**.
5. Enter a new 6-digit master code.
6. Confirm with **OK**.
7. Repeat the new 6-digit master code.
8. Confirm with **OK**.

BioKey® app

1. Open the BioKey® app.
2. Select the **Settings** menu.
3. Select **Reset code**.
4. Enter a new 6-digit master code.

INFO
Note down the new code in your own documents; no replacement will be provided in the event of loss.

6.2.13 Opening the door

1. Move the user finger over the sensor.
2. The door is unlocked.

6.2.14 Fault assistance

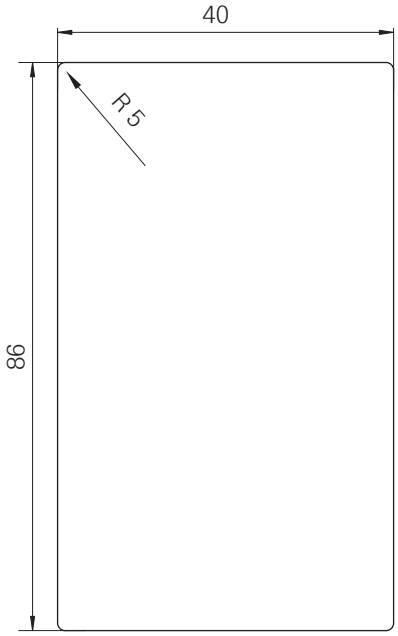
Fault	Cause	Corrective action	To be carried out by
User fingerprint was not accepted.	Same fingerprint calibrated as for the master and user fingerprint.	Use a different fingerprint than the user fingerprint.	☐
	The user fingerprint is blocked.	Approve the user fingerprint in the app.	☐
Could not connect to the BioKey® app	No authentication.	Enter master code using the remote control.	☐
		Move the master finger over the sensor.	☐
	No location approval for the app.	Approve the location for the app in the smartphone settings.	☐
User name or access attempts are not displayed correctly.	Power supply to the finger scan was interrupted.	Close the BioKey® app then restart it.	☐

☐ = May be carried out by a specialist company or the end user

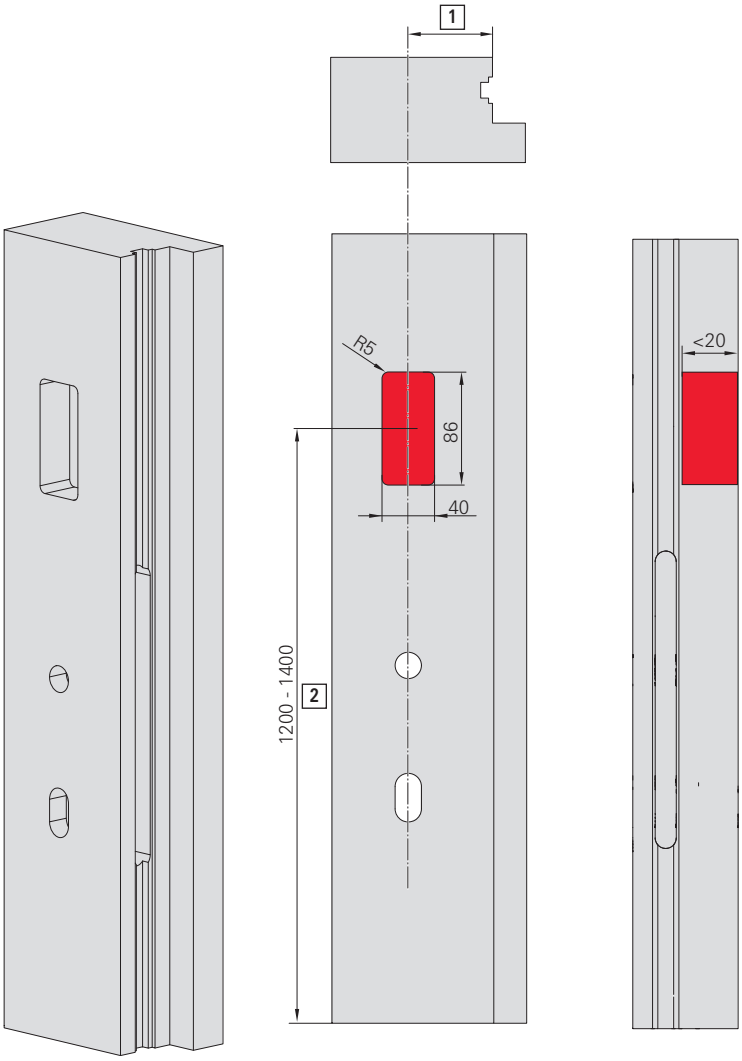
■ = **Must** be carried out by a specialist company

6.3 4in1 access control system

6.3.1 Dimensions



6.3.2 Routing and drilling dimensions



[1] Main lock backset
[2] Above lower edge of leaf

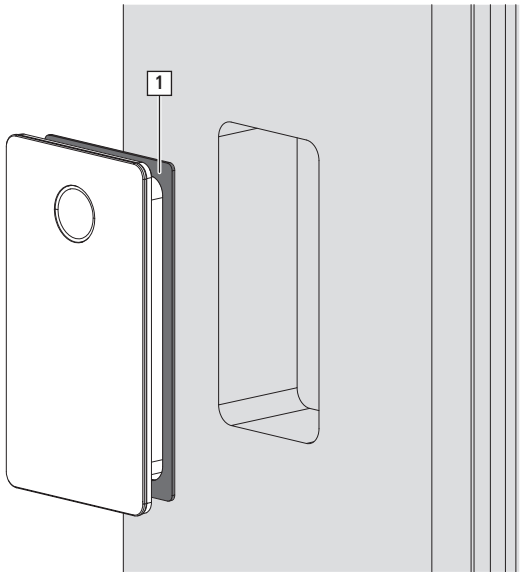
6.3.3 Installation

INFO
The power supply unit must not be connected to the power supply yet.

1. Carry out the routing.

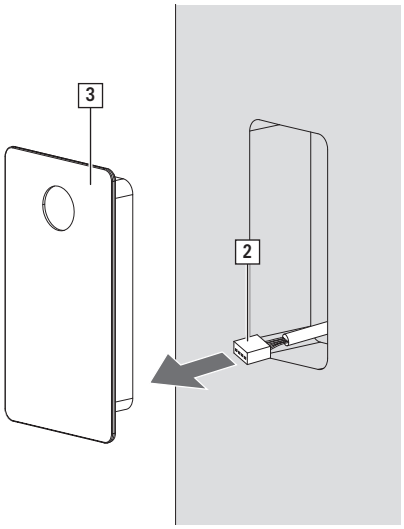
2. Clean the surface with alcohol.
   With textured coatings, the surface has to be slightly roughened and a primer additionally has to be applied.

3. Pull the protective film [1] off the double-sided adhesive tape.



4. Thread the cable [2] through the routed hole.
   Connect the outdoor unit [3] and black box to the cable.

INFO
For installation in the wall, the black box must be fitted in the secured area. This prevents it being tampered with from the outside.



5. Insert the 4in1 access control system into the door leaf or the wall and adhere it.

INFO

Sealing

Press down on the 4in1 access control system evenly on all sides.

Additional sealing is recommended for textured surfaces.

6.3.4 Testing using the autotest function

Automatic testing mechanism for testing the cabling and connections with the motor lock.

Commissioning using the app is not necessary.

There is no limit on the number of tests.

⇨ Only possible in the delivery state.

1. Enter code 123456 on the display.

2. Confirm by checking the box.

   ⇨ The door opens.

6.3.5 Reset (factory settings)

Black box

The black box is located indoors, where it is protected. Press the Reset button on the indoor unit (approx. 3 seconds) until two signals are emitted in quick succession.

SOREX SmartLock app

Via the first calibrated user in the app: Settings -> “Delete”.

Note the device’s range.

6.3.6 SOREX SmartLock app

The settings for 4in1 access control system can be controlled using an app.

An app is available for Android and iOS operating systems.

GET IT ON Google Play Download on the App Store

6.3.7 Fault assistance

Fault	Cause	Corrective action	To be carried out by
Keypad code was not accepted.	Keypad code is blocked	Before entering the code, press the “X” key on the code keypad to delete the numbers that were previously entered.	☐
	Keys on the 4in1 access control system have previously been pressed.		
After multiple incorrect codes have been entered, the keypad will stop responding.	If an incorrect code has been entered five times, the keypad will be blocked for 5 minutes.	Wait until the blocking time has elapsed.	☐

☐ = May be carried out by a specialist company or the end user

■ = **Must** be carried out by a specialist company

6.4 Hand-held transmitter

6.4.1 Overview

Each button [1] on the hand-held transmitter can be used for different Eneo units.

Two Eneo units can be controlled separately using a single hand-held transmitter.

It is possible to calibrate both buttons on a single Eneo unit.

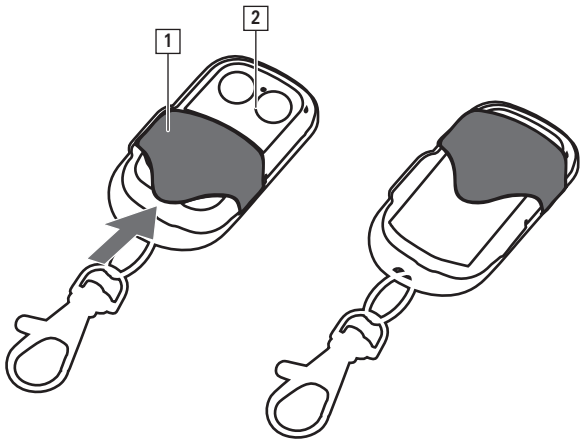
Up to 30 hand-held transmitters or hand-held transmitter buttons can be calibrated on the Eneo CC and CF.

INFO
The radio receiver has a specific code. The receiver will only accept the signals from the transmitter if the codes of the radio receiver and the hand-held transmitter match.

6.4.2 Security

INFO
Protect the hand-held transmitter against unintentional operation.

1. Push the protective cap [1] over the buttons [2].



6.4.3 Calibrating the hand-held transmitter

PRECONDITION

The following is required to calibrate a hand-held transmitter:

- Thin stick with a max. diameter of 3 mm to actuate the calibration push-button on Eneo CC and CF
- Hand-held transmitter
- Eneo CC or CF
- Compatible key for the cylinder

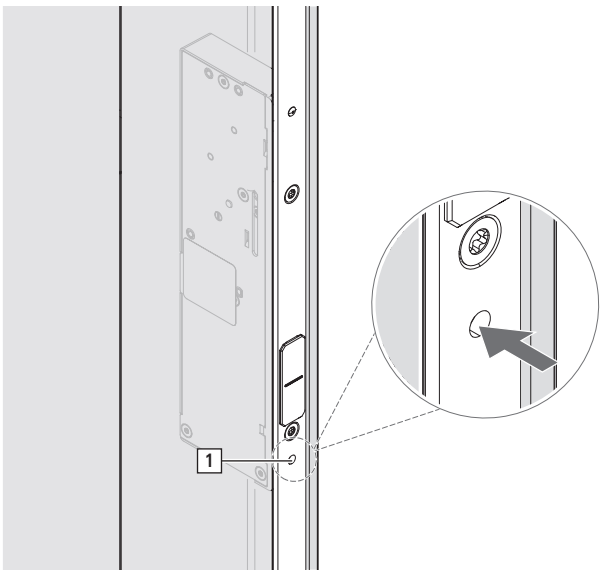
1. Unlock and open the door.

2. With the door open, lock the lock using the key.

3. Briefly press the radio calibration push-button [1] on Eneo CC or CF.

   A sequence of sounds lasting up to 18 seconds is heard.

   Eneo CC or CF is in calibration mode.



4. Activate the hand-held transmitter (within 18 seconds).

   Once Eneo CC or CF has detected the signal from the hand-held transmitter, at this point it stops the sequence of sounds and confirms the detected signal with a beep lasting 2 seconds.

   Eneo CC or CF exits calibration mode automatically.

5. If you need to calibrate additional hand-held transmitters, repeat steps 3 and 4.

6.4.4 Deleting hand-held transmitters

INFO
It is not possible to delete individual hand-held transmitters.

1. Unlock and open the door.
2. With the door open, lock the lock using the key.
3. Press and hold the radio calibration push-button for 10 to 15 seconds.
   The sound switches from slow to fast beeps.
   Successful deletion is confirmed with two beeps which sound twice in quick succession.
   All calibrated hand-held transmitters are deleted.
   Eneo CC or CF exits calibration mode automatically.

6.4.5 Changing the battery

1. Undo three screws on the back.
2. Open the housing.
3. Insert a new battery. Ensure that the polarity is correct.

ATTENTION
Incorrect disposal may pollute the environment.
Leaking battery acid may pollute the environment.
- ▶ Do not dispose of the battery in household waste.
- ▶ Observe the national regulations on the disposal of batteries.

4. Fit the housing and secure with three screws.

6.4.6 Fault assistance

Fault	Cause	Corrective action	To be carried out by
The hand-held transmitter LED flickers or does not light up when a button is pressed.	Battery too weak or flat.	Replace the batteries of the hand-held transmitter.	☐
The motor lock is not working when a button on the hand-held transmitter is pressed.	Hand-held transmitter not calibrated or fault during calibration.	Repeat the calibration process for the hand-held transmitter on the motor lock.	☐
Calibration push-button was actuated but calibration / deletion is not possible (4x beeps).	The lock is not in the correct position.	With the door open, lock the lock using the key.	☐
	Max. number of hand-held transmitters or buttons has been reached.	Delete the hand-held transmitter and recalibrate any hand-held transmitters that are still required.	☐

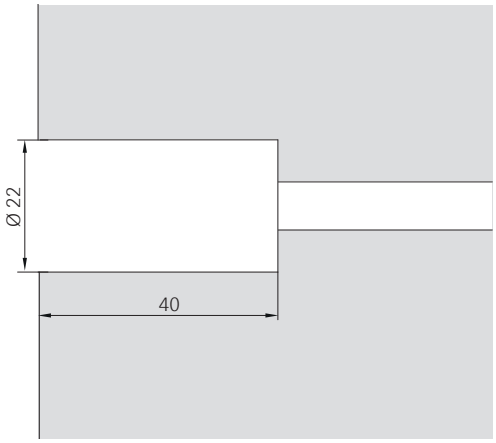
☐ = May be carried out by a specialist company or the end user

■ = **Must** be carried out by a specialist company

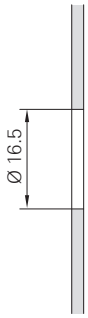
6.5 Day / night changeover switch

6.5.1 Routing dimensions

Timber



PVC and aluminium



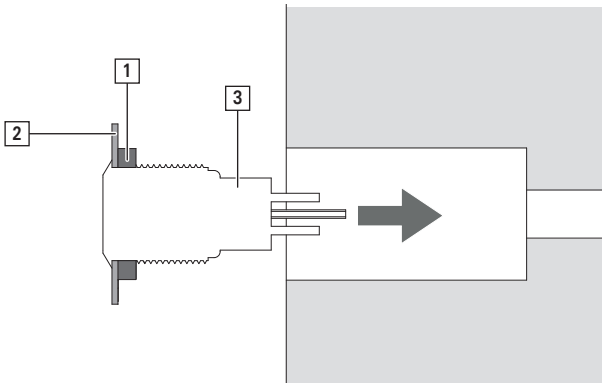
6.5.2 Installation

INFO
Do not bend the cable directly at the connection point.

PRECONDITION
The electrical opener is installed.

Timber

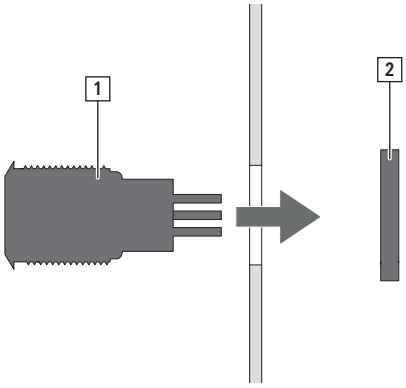
1. Carry out drilling and, if necessary, routing for cable installation on the door leaf.
2. Unscrew the union nut [1].



3. Fit the stainless-steel cover [2] on the switch.
4. Fasten the stainless-steel cover with the union nut.
5. Pull the protective film off the double-sided adhesive tape on the stainless-steel cover.
6. Insert the switch [3] into the drill hole and attach it to the door leaf by the cover.

PVC and aluminium

1. Drill the hole for cable installation on the door leaf.
2. Insert the switch [1] into the drill hole and fasten with the union nut [2].



6.5.3 Operation

Day operation mode

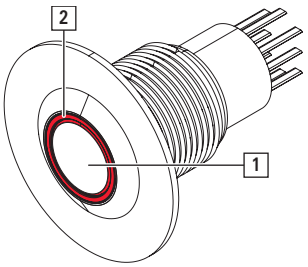
When closing the door, Eneo CC or CF detects the status of “door closed” via a sensor (reed contact)

The door is not locked.

Activating day operation mode

1. Set the latch-snib on the electrical opener to permanently open.

2. Press the switch [1].
   The red LED [2] will light up.



Night operation mode

When closing the door, Eneo CC or CF detects the status of “door closed” via a sensor (reed contact).

The door is locked automatically after 2 seconds.

Activating night operation mode

1. Set the latch-snib on the electrical opener to closed.

2. Press the switch.
   The red LED will not light up.

7 Connection diagram

The following diagrams are non-binding application examples.

These are only intended to provide guidance for customers and do not represent customer-specific solutions.

Proper operation is the responsibility of the customer.

The customer is obligated to ensure safe installation, use, maintenance and operation. The customer is furthermore obligated to ensure that the equipment is only installed by a qualified electrician; failure to do so may result in a risk of fire or risk of electric shock.

Compliance with the applicable standards and provisions must be ensured at all times; the company installing the system bears full responsibility for this.

The system must not be operated if compliance with the applicable standards and provisions cannot be ensured.

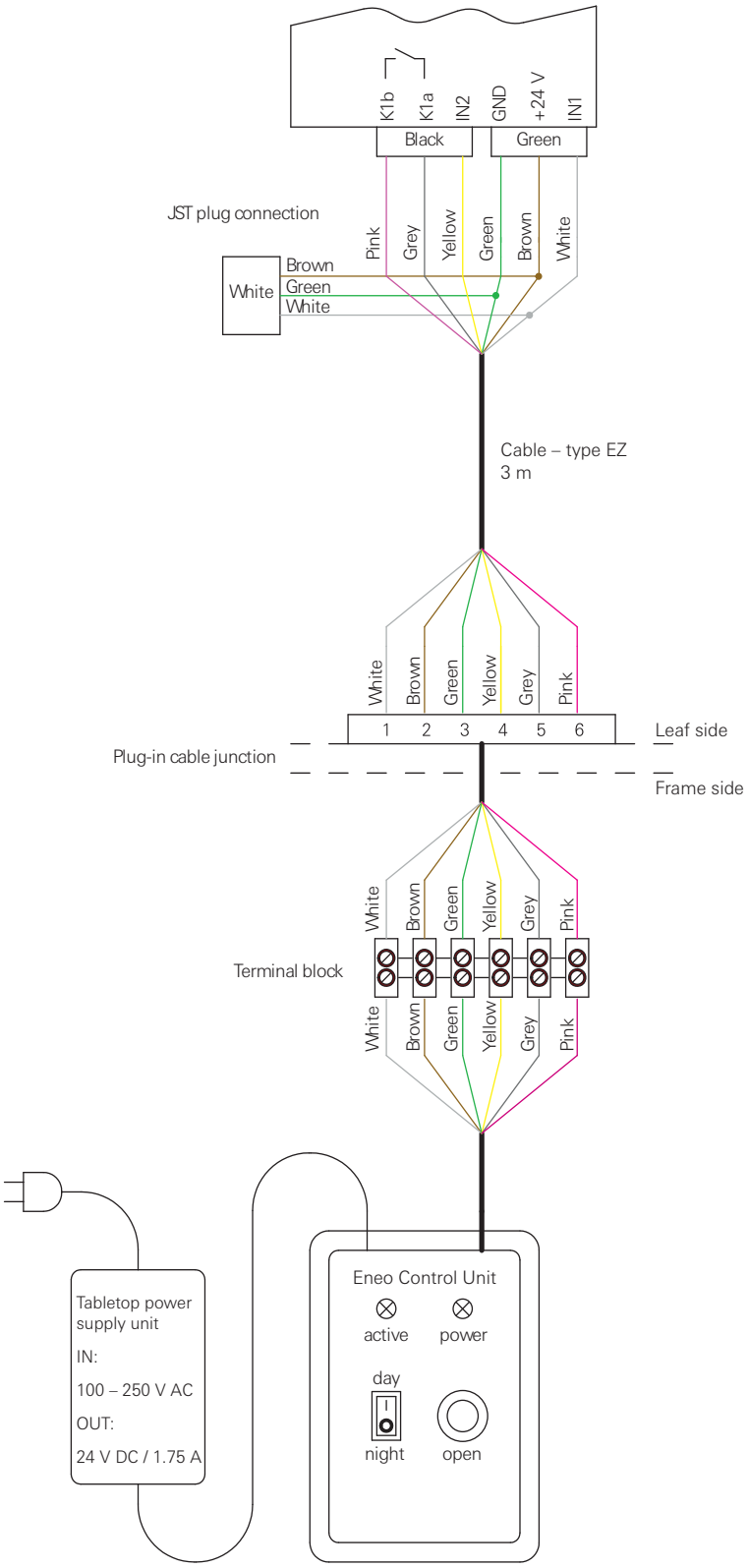
No guarantee is given for the application examples provided. Roto Frank Fenster- und Türtechnologie GmbH shall assume no liability for damage caused by use of the application examples, unless we are obligated to bear liability in accordance with legal provisions in cases of wilful intent.

INFO

Installation and maintenance work may only be carried out by a company specialising in electrical systems. There is a risk of death when using a mains voltage of 230 V (or 120 V). Only carry out work when the power supply is disconnected.

The following basic circuits are used as examples. See IMO 310 for other connections.

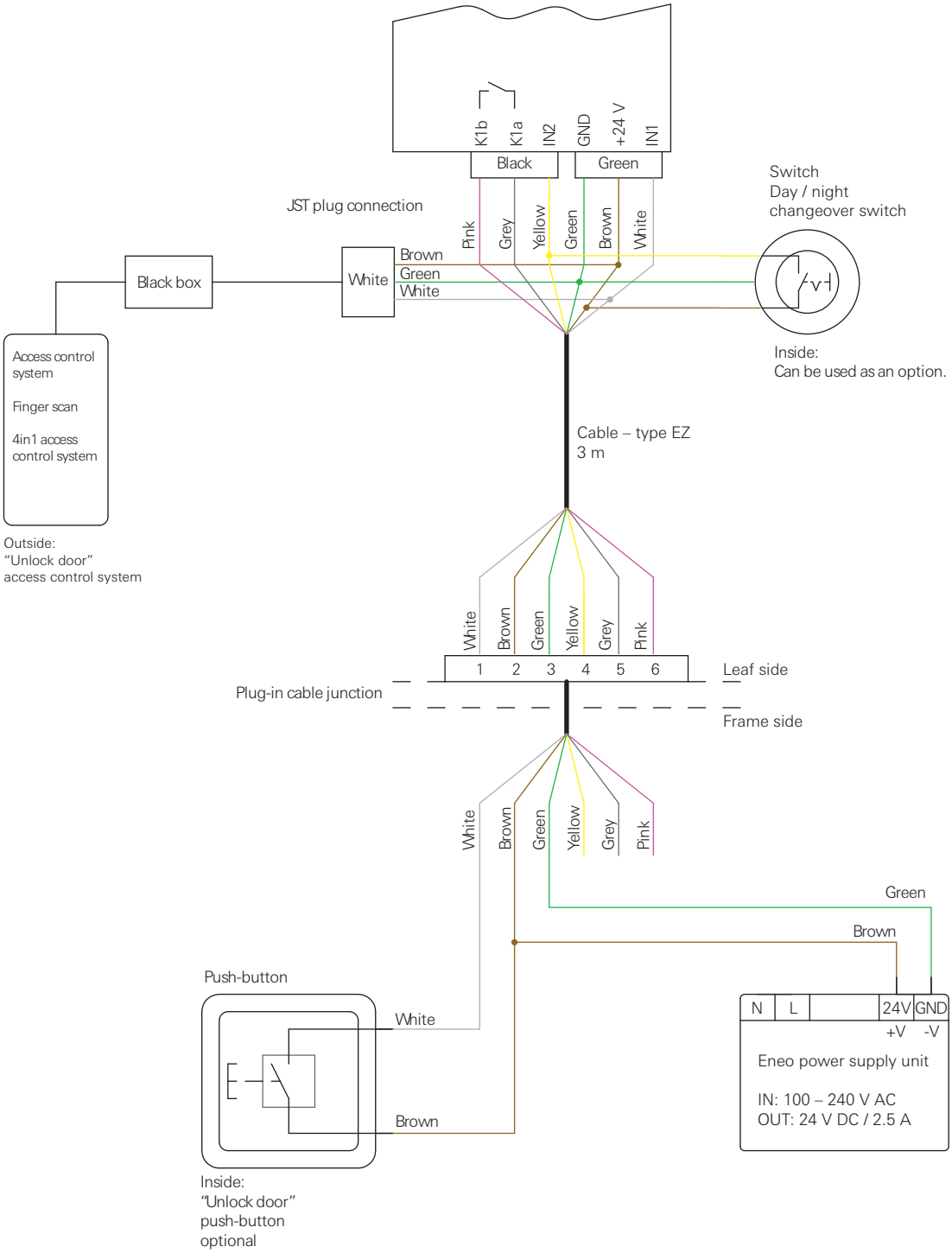
7.1 Control Unit



Connector / cable assignment

White: IN1 / input 1 (OPEN)
Brown: +24 V
Green: GND
Yellow: IN2 / input 2 (day / night changeover switch)
Grey: K1a potential-free contact
Pink: K1b potential-free contact

7.2 Cable junction without power supply unit



Connector / cable assignment

White: IN1 / input 1 (OPEN)
Brown: +24 V
Green: GND
Yellow: IN2 / input 2 (day / night changeover switch)
Grey: K1a potential-free contact
Pink: K1b potential-free contact

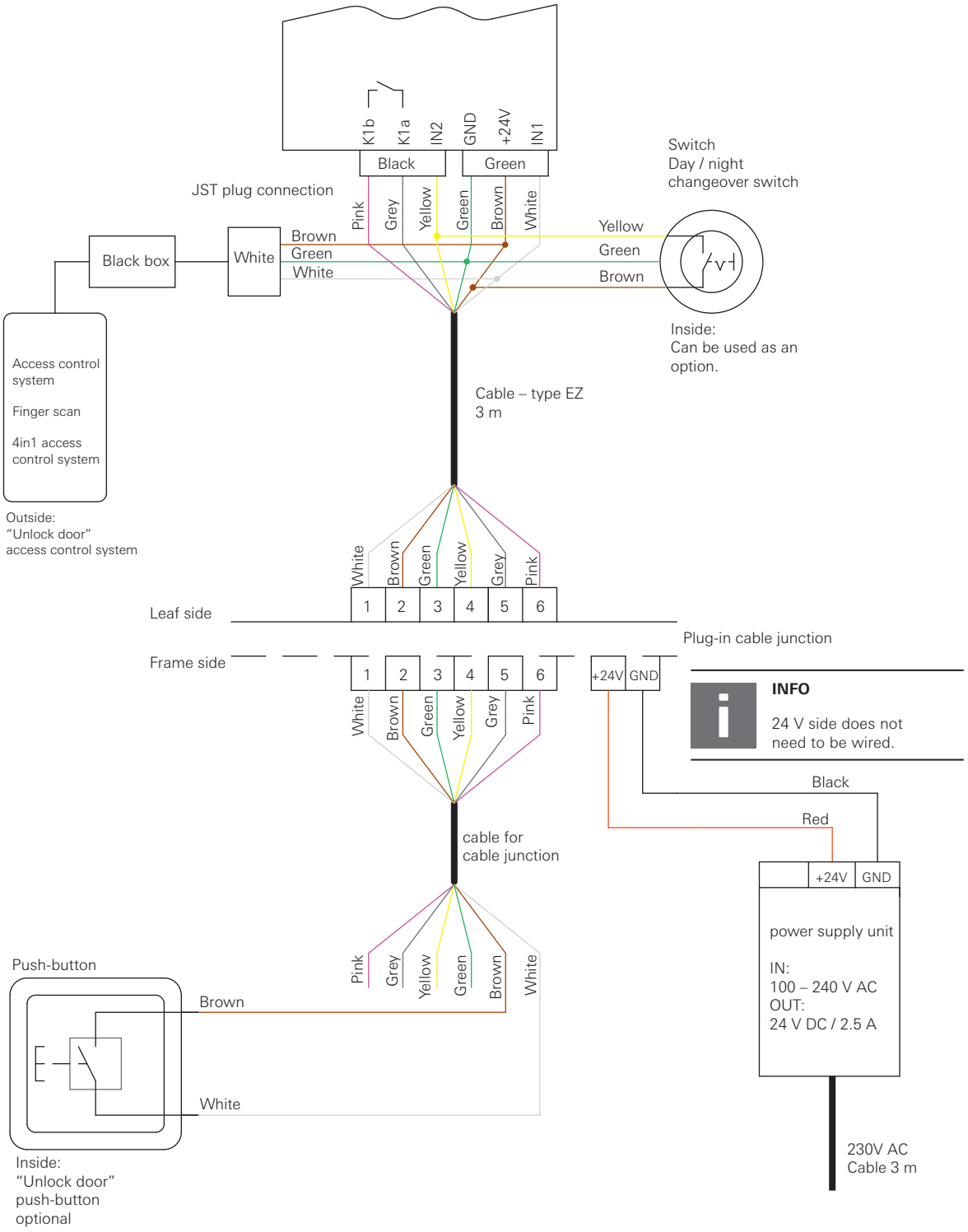
INFO

The yellow conductor must remain unassigned; otherwise this will bridge the switch on the leaf. Terminals 5 and 6 (grey and pink conductors) are connected to one another internally via a relay and a 47 ohm resistor. The maximum load of the contacts is 24 V / 40 mA.

Finger scan cable assignment (between JST connector and black box)

Brown: +24 V
Yellow: GND
Green: control system (OPEN)

7.3 Cable junction with built-in power supply unit



ATTENTION

Property damage due to short-circuit

If the power supply unit is connected to the 230 V power supply before the cable junction is connected, this may cause a short-circuit.

- On the leaf side, connect the cable for the cable junction to the cable junction. For the cabling, see the connection diagram.
- On the frame side, connect the cable for the cable junction, e.g. to the push-button, intercom, etc.

Connector / cable assignment

White: IN1 / input 1 (OPEN)
Brown: +24 V
Green: GND
Yellow: IN2 / input 2 (day / night changeover switch)
Grey: K1a potential-free contact
Pink: K1b potential-free contact

INFO
The yellow conductor must remain unassigned; otherwise this will bridge the switch on the leaf. Terminals 5 and 6 (grey and pink conductors) are connected to one another internally via a relay and a 47 ohm resistor. The maximum load of the contacts is 24 V / 40 mA.

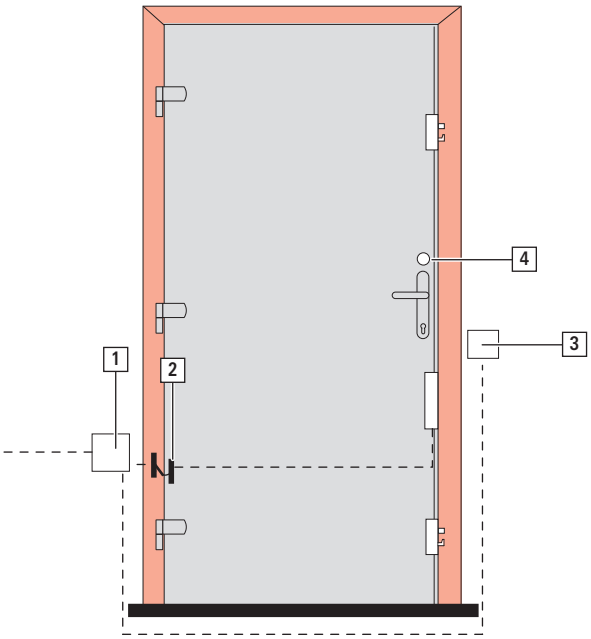
Finger scan cable assignment (between JST connector and black box)

Brown: +24 V
Yellow: GND
Green: control system (OPEN)

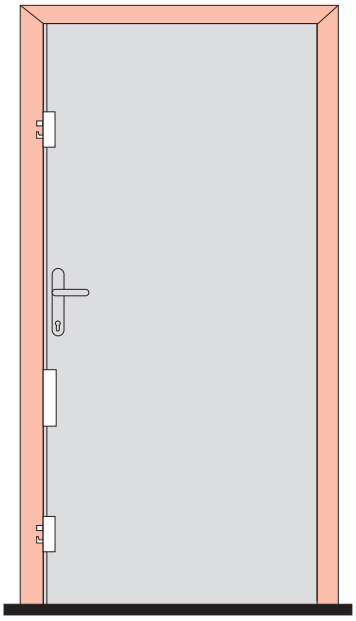
7.4 Cable routing

Cable – type E

Inside



Outside

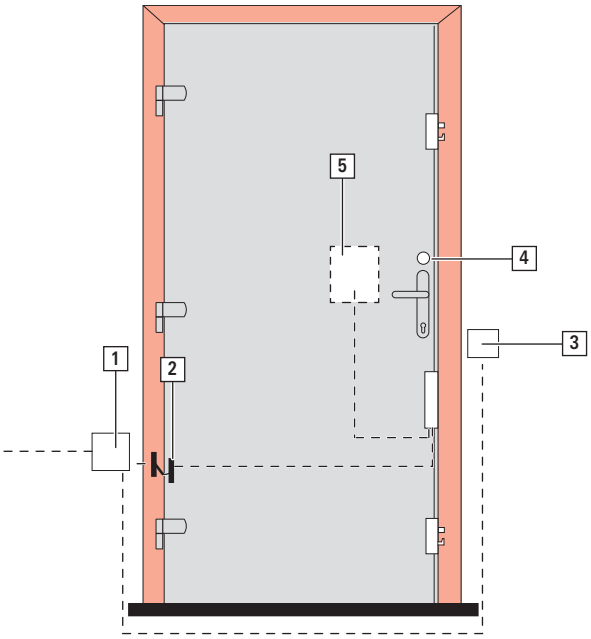


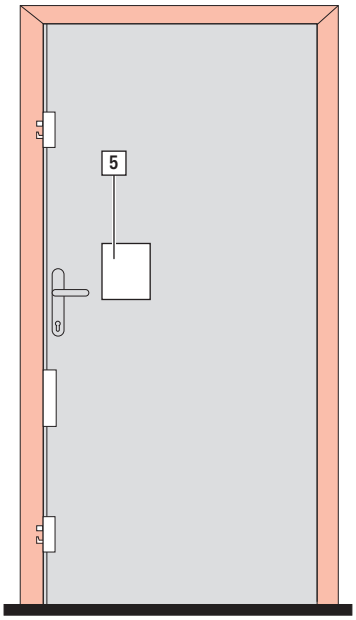
[1] Flush-mounted box
Connection for Eneo Control Unit.
Power supply unit: installation in control cabinet
[2] Cable junction with cable – type E
[3] Push-button
Optional
[4] Day / night changeover switch

Cable – type EZ

Inside

Outside





[1] Flush-mounted box

Connection for Eneo Control Unit.

Power supply unit: installation in control cabinet

[2] Cable junction with cable – type EZ

[3] Push-button

Optional

[4] Day / night changeover switch

[5] Access control system

7.5 Cable lengths

Maximum cable lengths for Eneo cable junction without power supply unit in conjunction with Eneo CC or Eneo CF, plug-in 180°, incl. 4 m cable.

Up to 8 m	Up to 18 m	Up to 24 m	Up to 36 m	Up to 60 m
0.34 mm^2	0.75 mm^2	1 mm^2	1.5 mm^2	2.5 mm^2

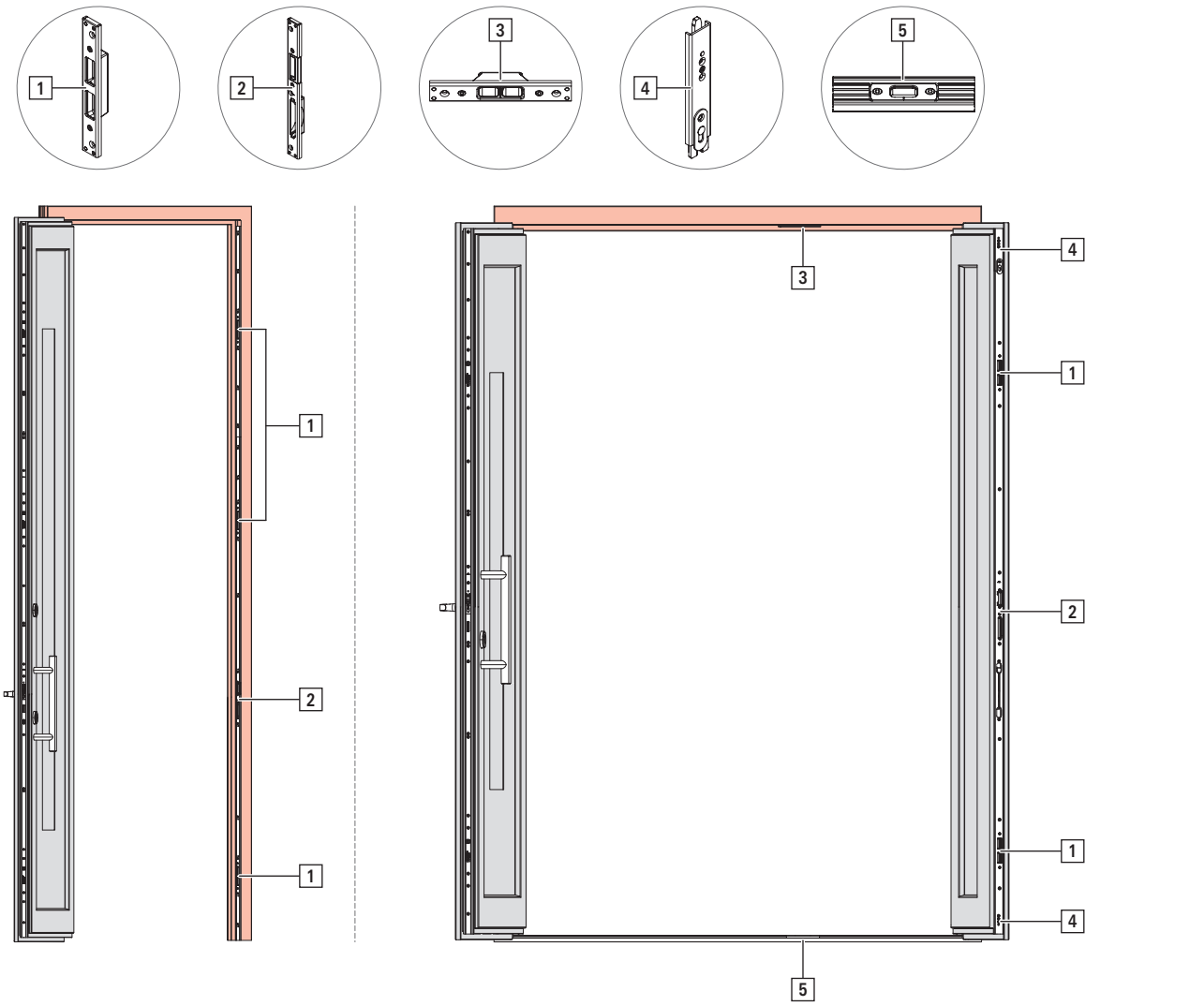
INFO

In the case of a cable junction with built-in power supply unit, the cable for the power supply connection must have three poles and a cable cross section of at least 1.5 mm^2.

8 Adjustment

INFO
Roto hardware components may only be adjusted by authorised professionals when the element is installed.

8.1 Overview



Assignment	Description	
[1]	Combination striker	→ *from page 102*
[2]	Latch / deadbolt striker	→ *from page 102*
[3]	Shootbolt protrusion striker	→ *from page 102*
[4]	Connector component for lever-operated espagnolette Plus	→ *from page 108*
[5]	Cover bridge	→ *from page 108*

8.2 Strikers

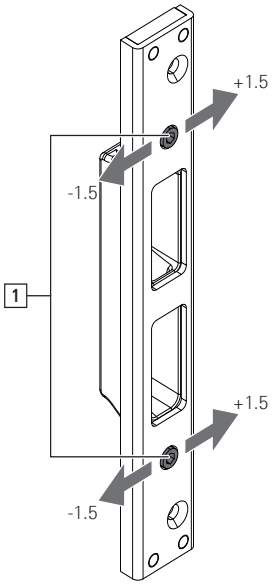
INFO
The adjustment principles are shown here by way of example. The component shown may differ from the figure depending on the type (latch / deadbolt, combination, automatic, etc.) and profile system (timber / PVC / aluminium). The adjustment principles remain the same.

8.2.1 Lateral adjustment

Eccentric adjustment

1. Perform lateral adjustment ±1.5 mm via adjustment eccentric [1] at the top and bottom.

   Tool: hex key size 3.



INFO

The adjustment distance of 1.5 mm is reached after a 90° turn:

- 90° turn = 1.5 mm
- 180° turn = initial position
- 270° turn = -1.5 mm
- 360° turn = initial position

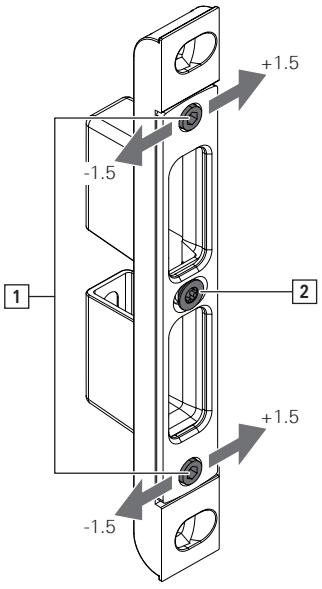
Eccentric adjustment (with a retaining screw in the centre)

1. Undo the retaining screw [2].

   Tool: T20 hexalobular socket screwdriver.

2. Perform lateral adjustment ±1.5 mm via adjustment eccentric [1] at the top and bottom.

   Tool: hex key size 3.



INFO

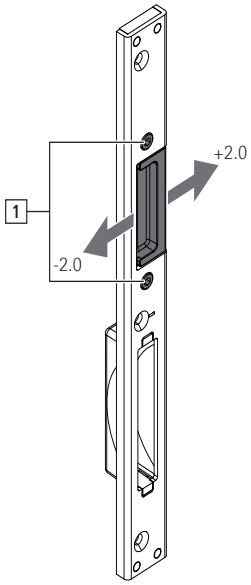
The adjustment distance of 1.5 mm is reached after a 90° turn:

- 90° turn = 1.5 mm
- 180° turn = initial position
- 270° turn = -1.5 mm
- 360° turn = initial position

Adjustment of lock-in position (manually using two retaining screws)

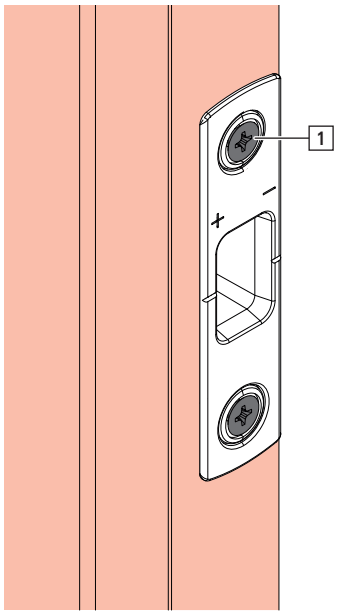
1. Undo the retaining screws [1].
   Tool: T20 hexalobular socket screwdriver

2. Perform lateral adjustment ±2 mm by hand.
   Lock-in position integrated in component.

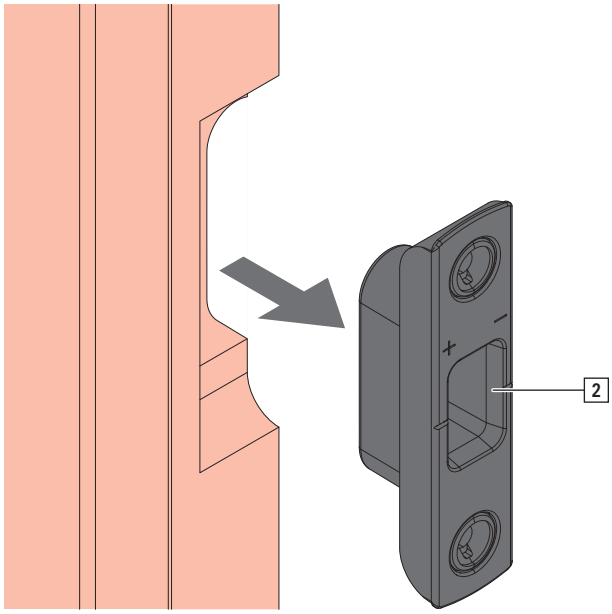


Turning the component

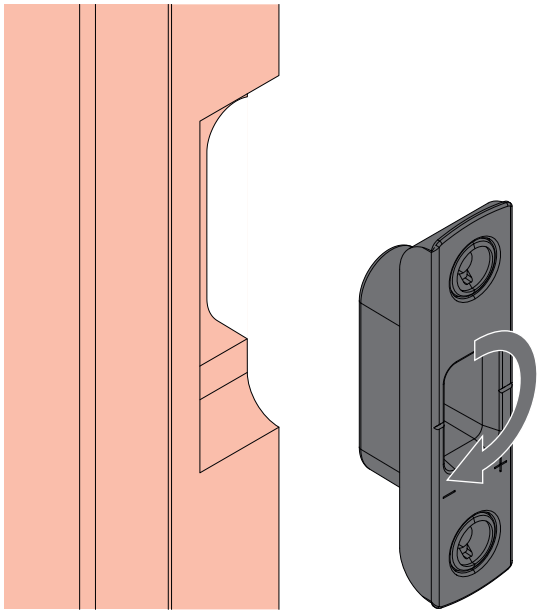
1. Undo the screws [1].



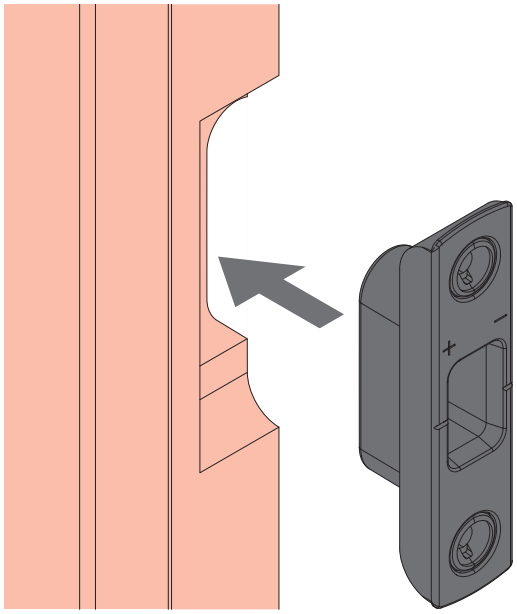
2. Remove the striker [2] from the frame.



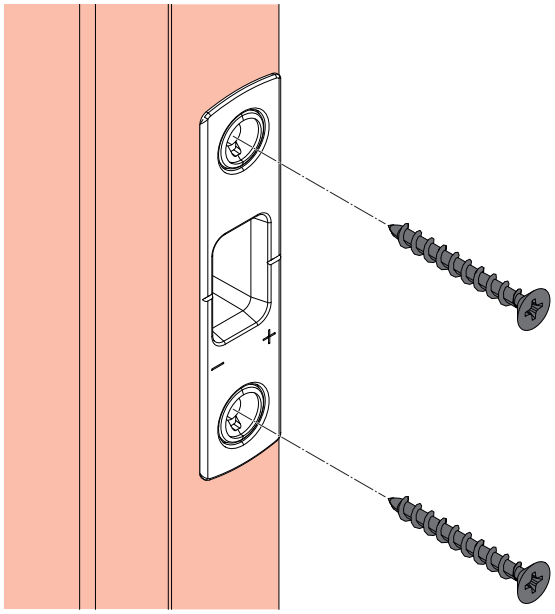
3. Turn the striker 180°.



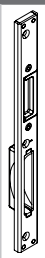
4. Insert the striker.

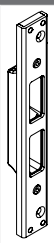
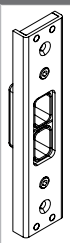
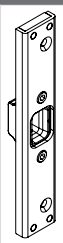
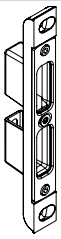
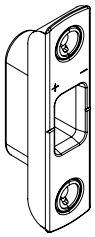


5. Fasten the striker with two screws.

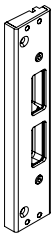
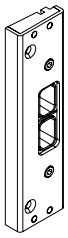
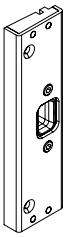


8.2.2 Timber

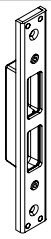
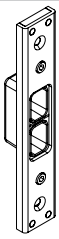
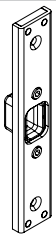
	Latch / deadbolt	Combination	Shootbolt protrusion	Bolt
Adjustment of lock-in position **±2 mm**		-	-	-

	Latch / deadbolt	Combination	Shootbolt protrusion	Bolt
Eccentric adjustment **±1.5 mm**				
Eccentric adjustment (with a retaining screw in the centre) **±1.5 mm**	-		-	-
Turning the component	-	-	-	

8.2.3 PVC

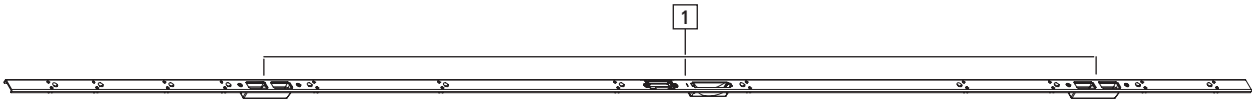
	Latch / deadbolt	Combination	Shootbolt protrusion	Bolt
Eccentric adjustment **±1.5 mm**				

8.2.4 Aluminium

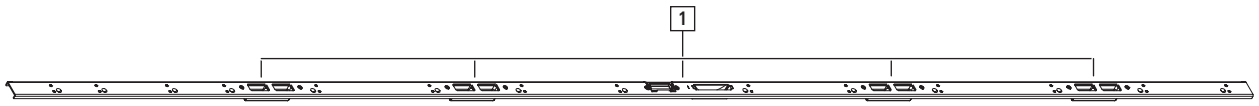
	Latch / deadbolt	Combination	Shootbolt protrusion	Bolt
Eccentric adjustment **±1.5 mm**				

8.3 Striker strips

2 combination lockings (2C)



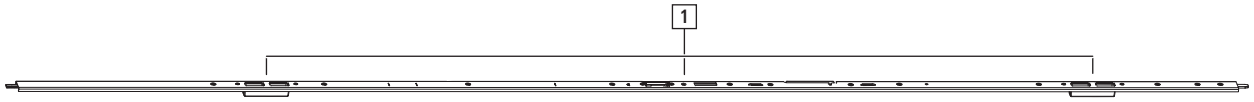
4 combination lockings (4C)



[1] Eccentric adjustment

±1.5 mm

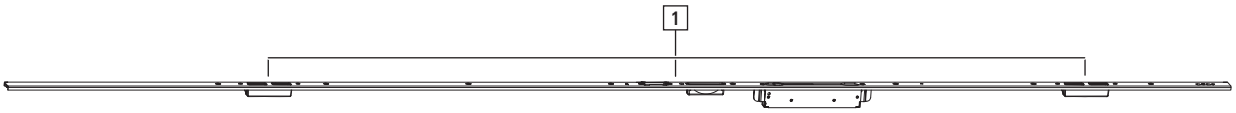
8.4 Lever-operated espagnolette, standard



[1] Eccentric adjustment

±1.5 mm

8.5 Lever-operated espagnolette Plus



[1] Eccentric adjustment

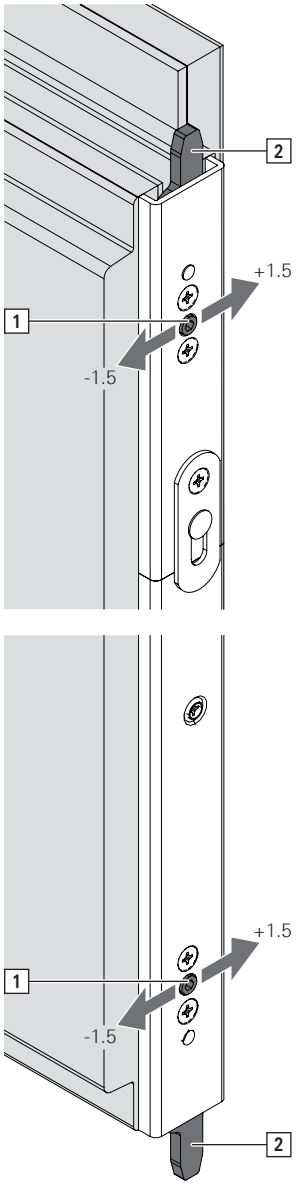
±1.5 mm

Shootbolt protrusion

1. Adjust the adjusting screw [1] for shootbolt protrusion [2] at the top and bottom.

   Adjustment distance ±1.5 mm

   Tool: size 3 hex key



INFO

For information about integrating a threshold, refer to IMO_423 (Roto Eifel).

9 Commissioning and operation

9.1 E610 and E611

9.1.1 Initial operation of the door

DANGER

Risk of death caused by electric shock!

Current can lead to fatal injuries.

- Installation and maintenance work may only be carried out by qualified electricians.
- Observe and comply with the respective national regulations (in Germany VDE 0100 and others).
- When laying the network connection cable on-site, all-pole safety isolation must be established.
- Only carry out work when the power supply is disconnected.

Before connecting E610 – Eneo CC or E611 – Eneo CF to the supply voltage, check that it is working properly, as for a mechanical multipoint lock. The force required to actuate the lever handle and the cylinder key must not exceed normal manual force.

9.1.1.1 Mechanical performance test

Only carry out the performance test when the power supply is disconnected.

PRECONDITION

The leaf and frame must be vertical for the performance test.

Fixing screws

ATTENTION

Over-tightened screws may cause property damage.

Over-tightened screws lose their hold and no longer provide the necessary strength.

- Do not over-tighten screws. Note the torque.

Use a screwdriver to check that all fixing screws have been tightened.

Door lever handle function

Push the door lever handle all the way down and release.

- The door lever handle must automatically return to the initial position.

Latch function

1. Push the door lever handle all the way down.

- The latch must retract.
- When pushed down, the latch may protrude over the lock faceplate by a maximum of 2 mm.

2. Release the door lever handle.

- The latch must extend fully.

3. Turn the key in the profile cylinder in the unlocking direction.

- The latch must retract fully.

4. Turn the key in the profile cylinder in the locking direction.

- The latch must extend fully.

Deadbolt function

Insert the key into the profile cylinder and turn in the locking direction:

Push-back safeguard: turn once (= 360°)

Locking: turn twice (= 2x 360°)

- The deadbolt must be extended fully (11 mm or 20 mm).
- All additional lockings must be in the locking position.
- It must be possible to remove the key.

For fault assistance, see → *from page 112*.

9.1.1.2 Electrical performance test

Performance test for cable junction without power supply unit, with Eneo Control Unit

1. Connect the Eneo Control Unit to the cable junction cable.

2. Insert the power supply unit for the Eneo Control Unit.

- Green LED (power): indicates that operating voltage is present.
- Day / night changeover switch: “0” position means night.
- OPEN button: drive receives the opening signal; door unlocks.
- Red LED (active): indicates that the door is unlocked.

3. Close the door: the door locks automatically.

Performance test for cable junction with built-in power supply unit (mat. no. 817028)

1. Connect the mains cable to the 230 V power supply.

INFO
Only an electrician is permitted to establish the connection to the 230 V power supply.

2. Check the power supply at the power supply unit.
   LED is lit up green when there is voltage.

Performance test using access control system

Finger scan → *from page 78*

4in1 access control system → *from page 87*

Hand-held transmitter → *from page 90*

For fault assistance, see → *from page 112*.

9.1.2 Activating / deactivating acoustic signals

1. Unlock and open the door.

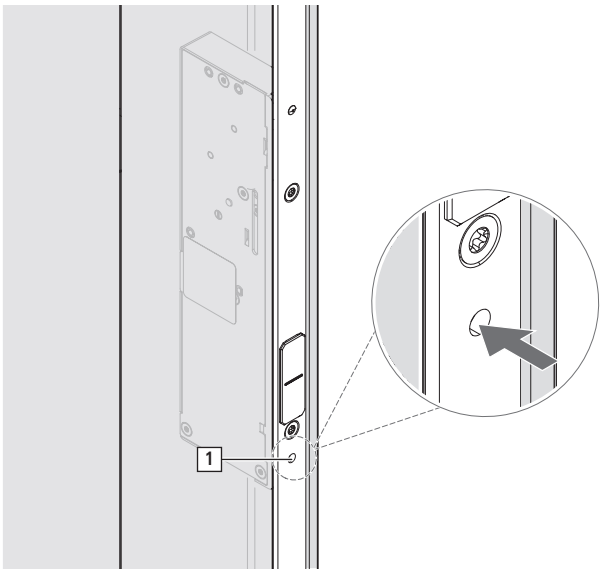
2. With the door open, lock the lock using the key.

3. Press and hold the radio calibration push-button [1] for 25 – 30 seconds.

   Eneo CC and CF confirm:

- Activation of the acoustic signals with a long beep.
- Deactivation of the acoustic signals with two beeps in quick succession.

  Eneo CC and CF exit this mode automatically.



9.1.3 Fault assistance

E610 – Eneo CC and E611 – Eneo CF

Fault	Cause	Corrective action	To be carried out by
System not functioning Eneo CC and CF not responding, no beeps	There is no 230 V voltage on the primary side of the power supply unit.	Have electrical installation work carried out by qualified personnel only, as described in the installation instructions.	■
	There is no 24 V voltage on the secondary side of the power supply unit.	Check the terminal contacts on the power supply unit.	■
	There is no 24 V voltage on Eneo CC and CF.	Check the supply line between the power supply unit and Eneo CC and CF, and replace if necessary.	■
	There is 24 V voltage on Eneo CC and CF but the polarity is the wrong way round.	Swap round the power supply on the secondary side of the power supply unit.	■
	The drive is in a final position and does not receive a signal to implement a movement.	Check the signal lines.	■
	Still not working?	Disconnect the voltage, wait for 10 seconds and restart it. Carry out a test using the Eneo Control Unit. Contact qualified personnel.	■
Eneo CC and CF do not lock automatically	Door is not fully closed.	Close the door fully.	■ □
	Eneo is in day operation mode.	Change over to night operation mode (input 2 must not be set to 24 V for night operation mode).	■ □
	Magnetic striker is incorrectly adjusted.	Check the position of the magnet and adjust if necessary.	■

Fault	Cause	Corrective action	To be carried out by
Eneo CC and CF do not lock completely (fault message)	Door or strikers not set correctly (fault message, excess current: Eneo beeps three times).	Adjust the door or strikers (see “Commissioning”).	■
	Foreign object in striker (fault message, excess current: Eneo beeps three times).	Remove the foreign object.	□
	Latch does not engage correctly and the door opens again slightly (fault message, reed contact not closed: Eneo beeps twice).	Open the door electrically and push it into the latch again.	□
Door does not unlock	No signal at the signal transmitter output or no signal at the Eneo CC and CF input.	Calibrate the hand-held transmitter as described in the operation instructions. Check settings and access control system. Refer to the operation instructions for the access control system.	□

Cable junction

Fault	Cause	Corrective action	To be carried out by
No power supply.	Loose plug connection.	Plug in the connector so that it is secure.	■
	Cable breakage.	Replace the cable.	■
	No power connection.	Check the plug connections. Check the power supply (LED must be lit). Check the power supply unit.	■

Finger scan

Fault	Cause	Corrective action	To be carried out by
User fingerprint was not accepted.	Same fingerprint calibrated as for the master and user fingerprint.	Use a different fingerprint than the user fingerprint.	□
	The user fingerprint is blocked.	Approve the user fingerprint in the app.	□
Could not connect to the BioKey® app	No authentication.	Enter master code using the remote control.	□
		Move the master finger over the sensor.	□
	No location approval for the app.	Approve the location for the app in the smartphone settings.	□
User name or access attempts are not displayed correctly.	Power supply to the finger scan was interrupted.	Close the BioKey® app then restart it.	□

4in1 access control system

Fault	Cause	Corrective action	To be carried out by
Keypad code was not accepted.	Keypad code is blocked Keys on the 4in1 access control system have previously been pressed.	Before entering the code, press the “X” key on the code keypad to delete the numbers that were previously entered.	□
After multiple incorrect codes have been entered, the keypad will stop responding.	If an incorrect code has been entered five times, the keypad will be blocked for 5 minutes.	Wait until the blocking time has elapsed.	□

Hand-held transmitter

Fault	Cause	Corrective action	To be carried out by
The hand-held transmitter LED flickers or does not light up when a button is pressed.	Battery too weak or flat.	Replace the batteries of the hand-held transmitter.	□
The motor lock is not working when a button on the hand-held transmitter is pressed.	Hand-held transmitter not calibrated or fault during calibration.	Repeat the calibration process for the hand-held transmitter on the motor lock.	□
Calibration push-button was actuated but calibration / deletion is not possible (4x beeps).	The lock is not in the correct position.	With the door open, lock the lock using the key.	□
	Max. number of hand-held transmitters or buttons has been reached.	Delete the hand-held transmitter and recalibrate any hand-held transmitters that are still required.	□

☐ = May be carried out by a specialist company or the end user

■ = **Must** be carried out by a specialist company

9.1.4 Acoustic signals

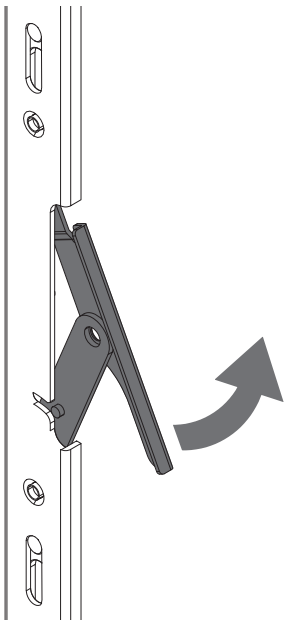
Sound	Type of message	Meaning
	Confirma-tion	Command understood, process completed correctly.
	Note	Command understood, Eneo CC and CF cannot carry out command. Maximum number of cycles (approx. 6 – 8 locking and unlocking procedures per minute) in time unit exceeded. Eneo CC and CF are ready for operation again after 30 to 40 seconds.
	Note	Calibration push-button was pressed but calibration / deletion is not possible.
	Fault	The magnetic contact was interrupted during the locking process. Either someone opened the door again during this period or the magnet was not positioned / adjusted correctly.
	Fault	Control unit detected excess current in the motor and stopped.
	Fault	The final position of the connecting rod was not reached in the maximum permitted time of 3 seconds.
	Note	Command from hand-held transmitter is executed but the hand-held transmitter battery will soon be flat.

9.2 Lever-operated espagnolette, standard

Locking the second opening leaf

1. Close the second opening leaf.

2. Fold in the lever at the side.



Unlocking the second opening leaf

1. Fold out the lever at the side as far as the latching point.

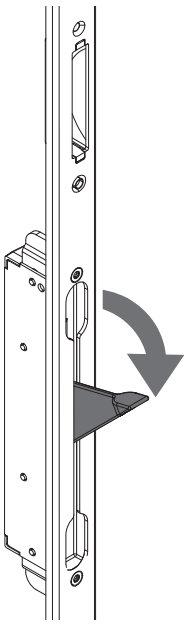
2. Open the second opening leaf.

9.3 Lever-operated espagnolette Plus

Locking the second opening leaf

1. Close the second opening leaf.

2. Fold in the lever.



Unlocking the second opening leaf

1. Fold out the lever.

2. Open the second opening leaf.

10 Technical data

10.1 E610 and E611

Technical data	
Power supply	24 V DC (±5%), 2.5 A, SELV output voltage according to EN 60950-1
Continuous current consumption	25 mA
Current consumption	1.5 A (peak 2.3 A)
Relative air humidity	≤ 93%
Temperature range	During operation: –25 to +60 °C During transport: –25 to +70 °C
Output relay load	Max. 40 mA, free-wheeling diode for inductive load present internally
Standards	EN 60 730-1, EN 50090-2-2 Low Voltage Directive complied with CE conformity

10.2 Cable junction

Technical data for power supply unit Cable junction 817028	
Cable	H03VV-F 3x1.5 mm^2
Input	230 V AC; 50 – 60 Hz
Output	24 V DC; 2.5 A DC
Degree of protection in accordance with DIN 40050	IP67 (when inserted and only the plug connection between leaf and frame)
Temperature range	When idle: –10 °C to +70 °C When moving: –10 °C to +50 °C
Standards	CE conformity

10.3 Finger scan

Technical data	
Dimensions of outdoor unit (W x H x D)	44.6 x 75.4 x 29.0 mm
Finger scan sensor	Touch chip line sensor No latent fingerprints after use > 2 million uses
Operating voltage	8 to 24 V DC
Power consumption	Approx. 1 W
Relay data	24 V DC 500 mA (max.)
Temperature range	During operation: –20 to +85 °C
Relative air humidity	Up to 95%
IP rating	IP65 (outdoor use)
ESD performance	16 kV
Storage capacity	Up to 150 fingerprints
Fingerprint recording time	Approx. 1 second
Fingerprint identification time	Approx. 10 ms per comparison
False rejection rate (FRR)	Approx. 0.5%
False acceptance rate (FAR)	Between 0.00001 and 0.000001 (at – FRR 0.5%)
Switching duration	3 seconds
Standards	CE conformity

10.4 4in1 access control system

Technical data	
Dimensions of outdoor unit (W x H x D)	55 x 99.8 x 19.8 mm
Operating voltage	12 V – 24 V DC, 200 mA
Relay data	1 A, 24 V DC switching capacity
Temperature range	During operation: –20 to +60 °C
IP rating	IP66 (with waterproof bonding)
Storage capacity	100 fingerprints 150 numerical codes 200 RFID media (Mifare classic transponder) Unlimited eKeys
Encryption	AES 128 bit
Standards	CE conformity

10.5 Hand-held transmitter

Technical data	
Hand-held transmitter	Up to 30 hand-held transmitters or hand-held transmitter buttons can be paired with the Eneo CC radio receiver
Radio receiver	Fitted in the drive unit
Security system	66 bit encoding and rolling code system Every single unlocking process takes place with a new, automatically assigned code; access cannot be gained through playing back a recorded code.
Frequency	433.92 MHz
Radio range	10 metres with a clear view of the door and full battery.
Radio licence for the following countries	A, B, CH, D, DK, E, F, FIN, GB, GR, I, IRL, IS, L, LT, N, NL, P, S, CZ
Battery	Type 27 A (12 V)
Standards	CE conformity

10.6 Day / night changeover switch

Technical data	
Line length	5 m
DC voltage	24 V DC
Current consumption	Day: 15 mA Night: 0 mA
Temperature range	Operation: –20 to +60 °C
Relative air humidity	Up to 20 - 90%
Standards	CE conformity

10.7 Power supply unit

Technical data	
Dimensions of outdoor unit (W x H x D)	78.0 x 93.0 x 56.0 mm
DC voltage	24 V (output)
Rated current	2.5 A (output)
Voltage adjustment range	21.6 to 26.4 V (output)
Voltage range	88 to 264 V AC, 124 to 370 V DC (input)
Frequency range	47 to 63 Hz (input)
Temperature range	Operation: –20 to +60 °C
Relative air humidity	Up to 20 - 90%
Standards	CE conformity

11 Maintenance

CAUTION

Performing maintenance work incorrectly can lead to injuries.

Performing maintenance incorrectly can lead to injuries.

- Ensure that there is sufficient space for installation before starting work.
- Ensure that the installation site is clean and tidy.
- Always have hardware adjustment and replacement work performed by a specialist company.
- Secure the sash against unintentionally opening or closing.
- Do not unhinge the sash for maintenance.

ATTENTION

Incorrect or improper testing may cause property damage.

Incorrect or improper testing of the hardware may cause the element to malfunction.

- Have the hardware checked by a specialist company when installed.
- If defects need to be remedied, have the element unhinged and remounted by a specialist company.

INFO

The manufacturer must draw the attention of builders and end consumers to these maintenance instructions.

Roto Frank Fenster- und Türtechnologie GmbH recommends the manufacturer conclude a maintenance agreement with their end users.

No legal claims can be derived from the following recommendations; their application is to be based on the specific individual case.

	Responsibility	
Maintenance interval	☐	→ *from page 118*
Cleaning		→ *from page 119*
Clean hardware	☐	
Care		→ *from page 120*
Lubricate movable parts	☐	
Lubricate locking points	☐	
Performance test		→ *from page 121*
Check that hardware components are fitted securely	☐	
Inspect hardware components for wear	☐	
Check that movable parts work properly	☐	
Check that locking points work properly	☐	
Check ease of movement	■	
Repair		→ *from page 122*
Retighten screws	■	
Replace damaged components	■	

☐ = May be carried out by a specialist company or the end user

■ = **Must** be carried out by a specialist company

11.1 Maintenance intervals

ATTENTION

Failure to adhere to maintenance intervals may cause property damage.

The maintenance interval for all tasks relating to the hardware components is **annually** at the least. In hospitals, schools and hotels, the maintenance interval is **six-monthly**.

Regular maintenance is necessary in order to maintain the proper and smooth-running operation of the hardware and to prevent premature wear or even defects.

- Determine and adhere to the appropriate maintenance interval in accordance with the ambient conditions.

11.2 Cleaning

ATTENTION

Using incorrect cleaning agents and sealing compounds may cause property damage.

Cleaning agents and sealing compounds may damage the surfaces of components and gaskets.

- Do not use aggressive or flammable liquids, acidic cleaners or abrasive cleaners.
- Only use mild, pH-neutral cleaning agents that have been diluted.
- Apply a thin protective film to the components, for example using a cloth soaked in oil.
- Avoid aggressive vapours (e.g. produced by formic acid, acetic acid, ammonia, amine compounds, ammonia compounds, aldehyde, carbolic acid, chlorine, tannic acid) around the element.
- Do not use any acetic acid-crosslinking or acid-crosslinking sealing compounds or those with the aforementioned constituents as both direct contact with the sealing compound and its fumes can corrode the surface of the components.

Cleaning the hardware

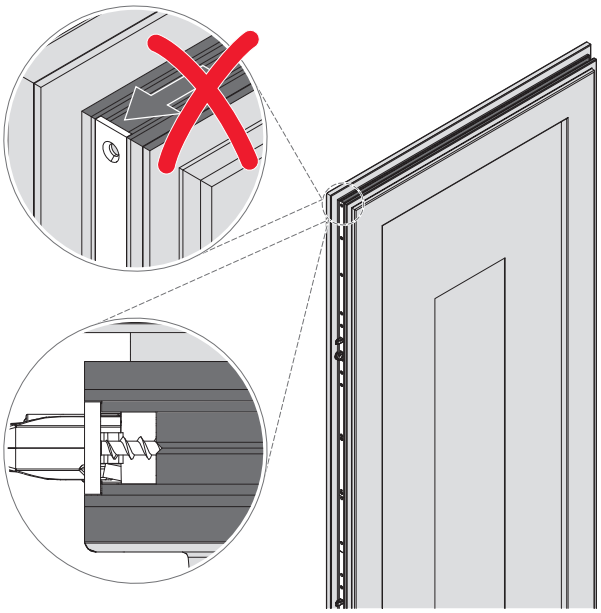
- Clean deposits and contaminants off the hardware using a soft cloth.
- Lubricate movable parts and locking points after cleaning. → *11.3 "Care" from page 120*
- Apply a thin protective film to the hardware, for example using a cloth soaked in oil.

ATTENTION

Contamination may cause property damage.

Contamination may get behind the floating mullion and block the multipoint locking system.

- Do not wipe contamination in the upper area of the sash (e.g. plaster, gypsum) towards the floating mullion.



11.3 Care

ATTENTION

Using incorrect lubricants may cause property damage.

Substandard lubricants can prevent the hardware from working properly.

- Use high-quality lubricants.
- Only use resin-free and acid-free lubricants.
- Use appropriate lubricant in more challenging climatic conditions. Note the manufacturer specifications.

ATTENTION

Cleaning agents and lubricants may pollute the environment.

Leaking or excess cleaning agents and lubricants may pollute the environment.

- Remove any leaking or excess cleaning agents and lubricants.
- Dispose of cleaning agents and lubricants separately and properly.
- Observe the applicable directives and national laws.

Ease of movement can be improved by lubricating or adjusting the hardware. All functional hardware components must be lubricated on a regular basis.

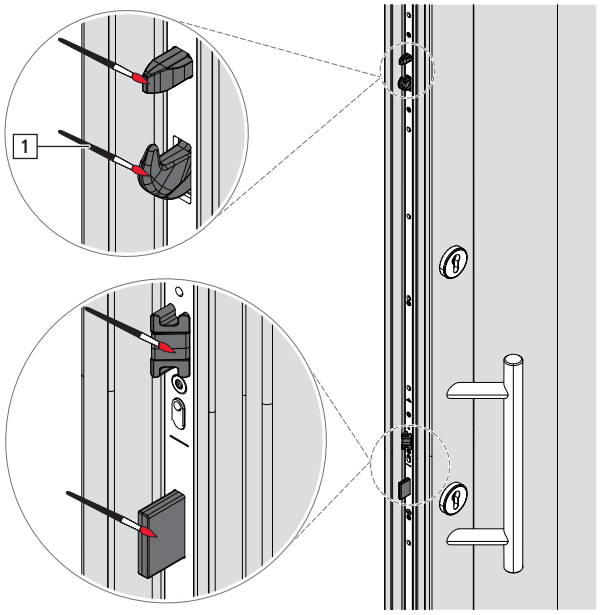
Recommended lubricants

- Roto NX / NT grease

INFO

The figure displays the positioning of potential lubrication points. The figure does not necessarily match the installed hardware. The quantity of lubrication points varies depending on the size and design of the element.

11.3.1 Lubrication points



[1] Grease

11.4 Drive unit

INFO
The drive unit in the E610 – Eneo CC and E611 – Eneo CF requires no maintenance. Repairs may only be performed by a specialist company.

11.5 Performance test

PRECONDITION
The sash and frame must be vertical for the performance test.

When the door is open

Fixing screws

ATTENTION
Over-tightened screws may cause property damage.
Over-tightened screws lose their hold and no longer provide the necessary strength.
- Do not over-tighten screws. Note the torque.

Use a screwdriver to check that all fixing screws have been tightened.

Door lever handle function

Push the door lever handle all the way down and release.

- The door lever handle must automatically return to the initial position.

Latch function

1. Push the door lever handle all the way down.

- The latch must retract.
- When pushed down, the latch may protrude over the lock faceplate by a maximum of 2 mm.

2. Release the door lever handle.

- The latch must extend fully.

3. Turn the key in the profile cylinder in the unlocking direction.

- The latch must retract fully.

4. Turn the key in the profile cylinder in the locking direction.

- The latch must extend fully.

Deadbolt function

Insert the key into the profile cylinder and turn in the locking direction:

Push-back safeguard: turn once (= 360°)

Locking: turn twice (= 2x 360°)

- The deadbolt must be extended fully (11 mm or 20 mm).
- All additional lockings must be in the locking position.
- It must be possible to remove the key.

Have malfunctions remedied by a specialist company.

When the door is closed

Locking process

Close the door.

- The latch must run into the frame component and keep the door closed.

Opening using the door lever handle

With the door closed, push the door lever handle all the way down.

- The latch must retract fully so that the door can be opened.

Locking using the key

With the door closed, turn the key in the locking direction.

- The key must be easy to turn.
- The latch and all deadbolts must run smoothly and extend fully.

Unlocking using the key

With the door locked, turn the key in the unlocking direction.

- The key must be easy to turn.
- The latch and all deadbolts must retract fully.

Have malfunctions remedied by a specialist company.

11.6 Repair

WARNING

Improper repair work may pose a risk of death!

Improper maintenance may prevent the element from working properly and make it less safe to use.

- Always have repairs performed by a specialist company.

ATTENTION

Improper screw fixings may cause property damage.

Loose or faulty screws can prevent the hardware from working properly.

- Check that the individual screws are secure and seated correctly.
- Tighten or replace loose or faulty screws.
- Use only the suggested screws.

Repair work includes replacing and repairing components and is only necessary if components have become damaged after wear or as a result of external circumstances. The hardware must be secured reliably in order to ensure that the element works properly and is safe to use.

The following tasks must only be performed by a specialist company:

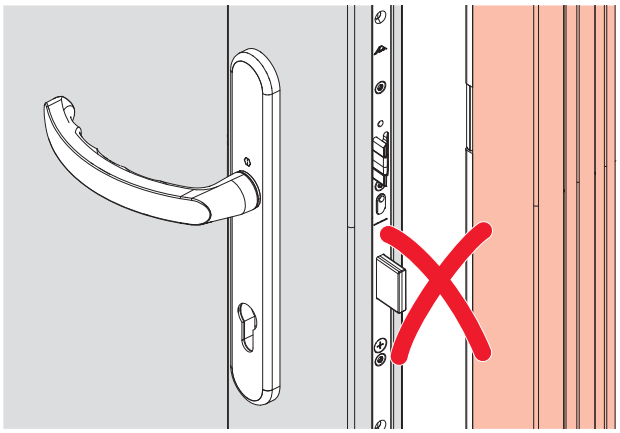
- All adjustment work on the hardware,
- Replacing hardware or hardware components,
- Installing and removing windows, doors or balcony doors

The specialist company must observe the following:

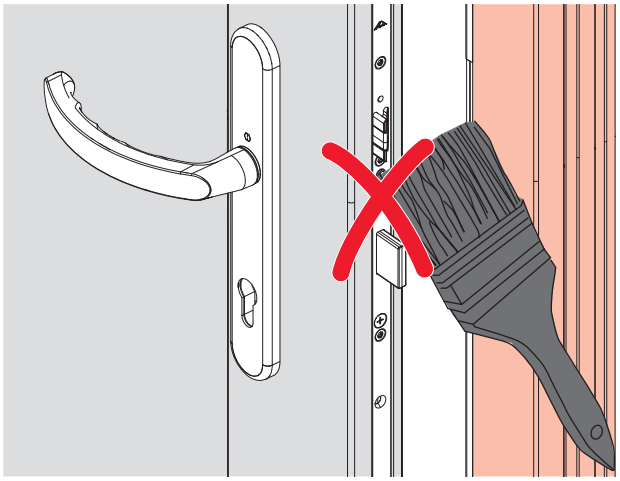
- Perform the necessary repair work properly, according to generally recognised engineering practice and in accordance with the applicable regulations.
- Do not perform makeshift repairs on worn or damaged components.
- Only use original or approved spare parts for repairs.

11.7 General information

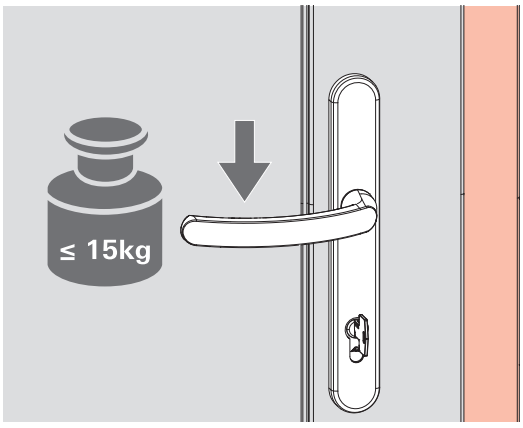
11.7.1 For the end customer



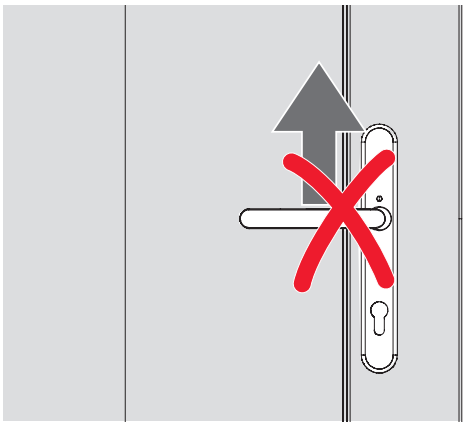
When the locking is extended, do not close the door or push it against the frame.



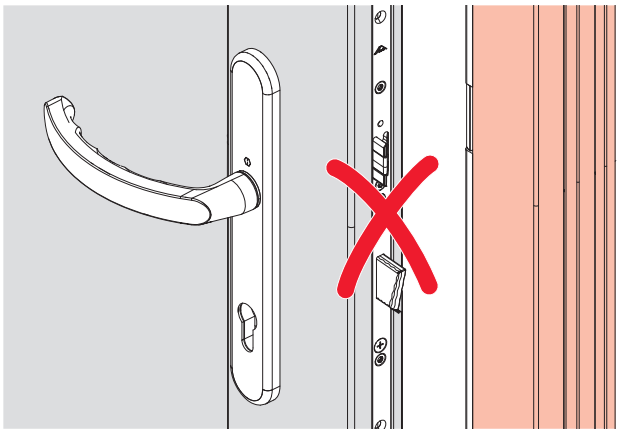
Do not paint over the lock or locking components (latch, deadbolt, additional locking, etc.).



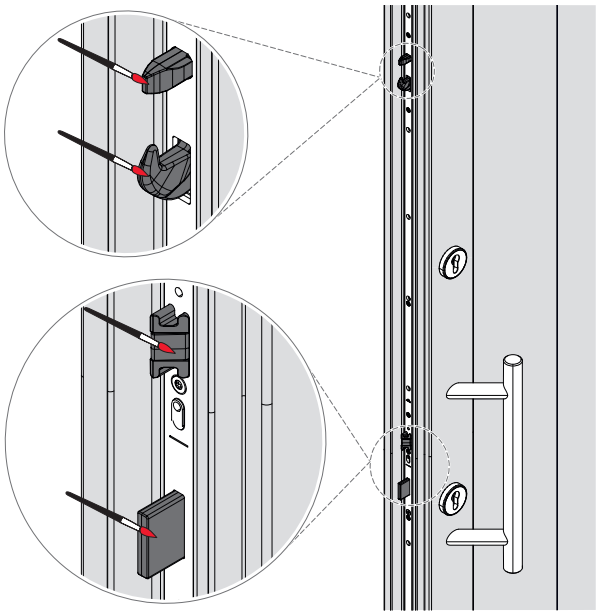
Do not place heavy loads on the handle; the maximum load is 15 kg.



Do not carry the leaf by the door lever handle.



Where there are visible signs that force has been used, replace the lock and / or handle.



Lubricate locking components (latch, deadbolt, additional locking) at least once per year.

ATTENTION

Using incorrect lubricants may cause property damage.

Substandard lubricants can prevent the hardware from working properly.

- Use high-quality lubricants.
- Only use resin-free and acid-free lubricants.
- Use appropriate lubricant in more challenging climatic conditions. Note the manufacturer specifications.

12 Dismantling

WARNING

Improper dismantling may pose a risk of death!

The sash may fall during dismantling.

- Secure the sash to prevent it from falling, e.g. by using two people.
- Always have dismantling work performed by a specialist company.

CAUTION

Physical strain may cause injury and damage to health.

Carrying and lifting heavy loads for extended periods leads to physical injury in the long term.

- When carrying or lifting loads, maintain an ergonomically correct posture. The maximum permissible load is 25 kg for men and 10 kg for women.

INFO

Unless otherwise stated, dismantling is performed in reverse order to installation.

12.1 Hardware components

Removing hardware components

1. Undo all screw connections.
2. Remove the hardware components.
3. Dispose of the hardware components properly.

13 Transport

13.1 Transporting elements and hardware

DANGER

Improper transport poses a risk of death!

Improper procedures for transporting, loading or unloading elements may cause serious injuries and glass breakage as a result of the elements swinging open, falling or becoming overloaded.

- Note the applicable accident prevention regulations.
- Note force application points and reaction forces.
- Prevent the sash from opening uncontrollably.
- Avoid jerky movements.
- Use suitable transportation means and protective devices.
- Watch out for protruding components.
- Transport heavy loads with two people and use suitable transportation means (such as an industrial truck).

CAUTION

Trapped limbs may result in injuries.

The transported goods can skid, open, close or fall during transportation tasks. This can result in limbs being trapped and seriously injured.

- Never reach near the scissor stays.
- Close the sash after installation and secure it in place for transport.
- Wear safety gloves and protective footwear.

CAUTION

Physical strain may cause injury and damage to health.

Carrying and lifting heavy loads for extended periods leads to physical injury in the long term.

- When carrying or lifting loads, maintain an ergonomically correct posture. The maximum permissible load is 25 kg for men and 10 kg for women.

Hardware is supplied to the specialist company as complete sets. The components are packaged accordingly for each scope of delivery. The instructions for safely transporting the hardware are described below.

Observe the following basic instructions when transporting hardware:

- Transport larger scopes of delivery using appropriate transportation means (such as industrial trucks).
- Note the transport weight in order to select appropriate transportation means.
- Ensure that the transport process is careful and appropriate for the material and that components are protected against dirt during transport.
- Immediately check the delivery for completeness and transport damage on receipt.

INFO

Submit a complaint about any defects as soon as they are identified. Claims for damages may only be made within the reclamation period.

Use the following transportation means for support when transporting, loading and unloading larger scopes of delivery:

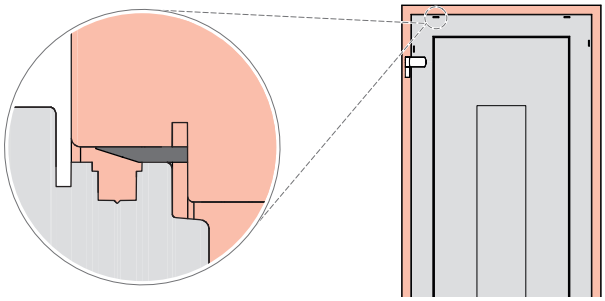
- Industrial trucks, e.g. forklifts, telescopic handlers, pallet trucks
- Lifting equipment, e.g. transport nets, carry straps, round slings
- Protective devices, e.g. edge protection, spacer blocks

INFO
Industrial trucks and lifting devices may only be operated by qualified persons.

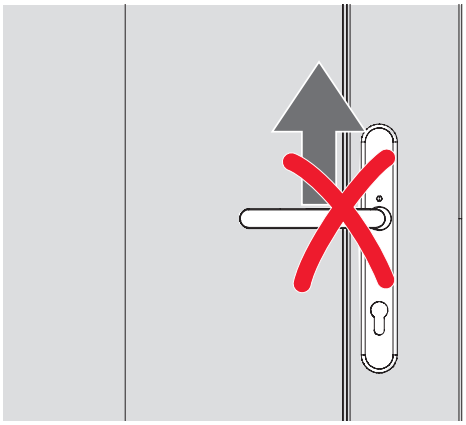
INFO
Lifting equipment and protective devices may only be used if they are in full working order.

13.2 Information on transport

- During transport, secure the leaf against the frame using suitable supports (run-up blocks, wedges, etc.).



- Do not remove the cylinder fixing, which is a transport safety mechanism, until you are about to install the profile cylinder.
- Do not carry the leaf by the door lever handle.



13.3 Storing the hardware

Store all hardware components as follows until they are installed:

- Dry and protected
- On a level surface
- Protected against sunlight

14 Disposal

ATTENTION

Incorrect disposal may pollute the environment.

Pieces of hardware are raw materials.

- Dispose of hardware for environmentally friendly material re-utilisation as mixed scrap.

14.1 Disposing of packaging

The hardware is supplied as complete sets together with the packaging. Once unpacked, the installation company or builder is responsible for disposing of the packaging properly. The packaging materials are produced in accordance with current environmental protection standards. The materials can be recycled separately.

Follow the basic instructions below for the proper disposal of packaging:

- Do not dispose of packaging in household waste.
- Hand over packaging at local waste collection points or recycling centres.
- Observe the national regulations on the disposal of recyclable materials.
- Contact the local authorities if necessary.

14.2 Disposing of hardware

Once the hardware is finished with, the end user or builder is responsible for properly disposing of the windows, doors or balcony doors and the hardware, including any accessories. Hardware is produced in accordance with current environmental protection standards. The materials can be recycled separately.

Follow the basic instructions below for the proper disposal of hardware:

- Observe the information and specifications for disposal contained in the other applicable documents.
- Separate hardware components from windows, doors or balcony doors.
- Do not dispose of hardware in household waste.
- Hand over hardware at local waste collection points or recycling centres.
- Observe the national regulations on the disposal of recyclable materials.
- Contact the local authorities if necessary.

14.3 Batteries

Disposal of batteries in accordance with the legal provisions of the individual countries, for instance in accordance with EU directives (2006/66/EC: Directive on batteries and accumulators and waste batteries and accumulators).

According to the Battery Ordinance (BattV) in Germany, used batteries must not be disposed of in household waste; they must be taken to an appropriate disposal site.

14.4 Electronic waste

Disposal of electronic waste in accordance with the legal regulations in the individual countries, e.g. in accordance with EU directives (2002/95/EC: Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment, RoHs and 2002/96/EC: Requirements for the

take-back and recycling of waste electrical and electronic equipment (WEEE)).

According to the Federal Electrical and Electronic Equipment Act (ElektroG) in Germany, waste electronic equipment must not be disposed of in household waste; it must be taken to an appropriate disposal site.

14.5 Taking back waste electronic equipment

Waste electronic equipment can be returned to Roto Frank GmbH (the sender is responsible for the cost). The company will dispose of it free of charge and ensure that the waste electronic equipment is recycled correctly.

Please note: before shipping, remove batteries and dispose of them correctly.

Roto Frank
Fenster- und Türtechnologie GmbH
Elektrogeräte Recycling
Wilhelm-Frank-Platz 1
70771 Leinfelden-Echterdingen
Germany

15 Additional information

15.1 Declaration of Conformity

EU-Konformitätserklärung
EU Declaration of Conformity

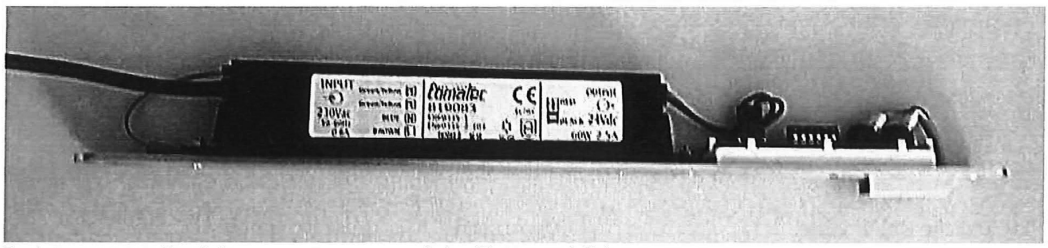
Hersteller:
manufacturer:

Roto Frank Austria GmbH
Lapp Finze Straße 21
A-8401 Kalsdorf bei Graz

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Produkt-/ Typbezeichnung:
name of product/ type:
Materialnummer:

KÜG TÜR RA 3POL m. NETZTEIL 230V 3m
CJ Door FR 3POL w. POWER SUPPLY 230V 3m
817028



Seriennummer, Baujahr
serial number, year of manufacture:

siehe Typenschild
according to identification plate

Die Gegenstände dieser Erklärung erfüllen die einschlägigen, nachstehend benannten Harmonisierungsrechtsvorschriften der Union.
The items addressed by this declaration satisfy the relevant harmonization legislation of the European Union.

Richtlinie *Directive*	Norm *Standard*
2014/30/EU:2014-02 Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit	EN55011:2016-04 EN55032(cl.B):2015-07 EN55024:2010-11 EN55024/A1:2015 ENV50204:1995 EN 50130-4:2015-04 EN61000-3-2:2014-08 EN61000-3-3:2013-08 EN 61000-4-2:2009-12 EN 61000-4-3:2011-04 EN61000-4-3/A1:2008 EN61000-4-3/IS1:2009 EN61000-4-3/A2:2010 EN 61000-4-4:2013-04 EN 61000-4-5:2015-03 EN 61000-4-6:2014-08 EN61000-4-8:2010 EN61000-4-11/A1:2017-08 EN 61000-4-11:2016-10 EN61000-6-2:2005-08 EN61000-6-2/EC:2005-09 EN61000-6-2/IS1:2005-11 EN 61000-6-3:2011-09

2014/35/EU:2014-02 Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt (Niederspannungsrichtlinie)	60335-1:2012-01 60335-1/A11:2014-08 60335-1/EC:2014-01 60335-2-103:2015
2011/65/EU:2011-06 Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten	EN 50581:2013-02
2015/863:2015-03 Änderung von Anhang II der Richtlinie 2011/65/EU des Europäischen Parlaments und des Rates hinsichtlich der Liste der Stoffe, die Beschränkungen unterliegen	
	EN60950-1:2006-04 EN60950-1/A1:2010-03 EN60950-1/A11:2009-03 EN60950-1/A12:2012-03 EN60950-1/A2:2013-08
Zusätzliche Dokumente	TÜV Austria Berichtsnummer: rotg0709-MOD

Kalsdorf bei Graz, 08.11.2019

Ort, Datum

place, date

Christian Lazarevic
Geschäftsführer Roto Frank Austria GmbH
Managing Director of Roto Frank Austria GmbH

german made

Roto
Window & Door
Technology

From a single source.
Optimum hardware systems to meet all challenges.

Window
Hardware systems for windows and balcony doors

Sliding
Hardware systems for large sliding windows and doors

Door
Matching hardware technology everything about doors

Equipment
Additional technology for windows and doors

Contact