



# Roto Safe C

C600 / C500

Mechanical multipoint lockings for cylinder-operated doors

## **Contact**

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# 1 General information

## 1.1 Version history

| Version | Date       | Changes                                                                                                                                                                                                                                         |
|---------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| v0      | 29/01/2019 |                                                                                                                                                                                                                                                 |
| v1      | 22/03/2022 | Variable striker strip added → <i>from page 78</i><br>C600 – three-part added → <i>from page 46</i>                                                                                                                                             |
| v2      | 16/07/2024 | Lever-operated espagnolette Standard added → <i>from page 80</i>                                                                                                                                                                                |
| v3      | 24/02/2026 | Force-fit connections changed → <i>from page 27</i><br>Single-leaf doors → <i>from page 41</i> and double-leaf doors restructured → <i>from page 80</i><br>Operation of the lever-operated espagnolette Standard changed → <i>from page 117</i> |

## 1.2 Instructions

This manual contains important information, instructions and assembly guidelines 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:

- Roto Safe catalogue: CTL\_86
- Roto Eifel installation instructions: IMO\_423

### 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 sash          |
|  | Sash / components seated in the sash                          |
|  | Optional / alternative components seated in the frame         |
|  | 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 |
|  | Item number                                                   |

| Marking | Meaning |
|---------|---------|
| [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 left-hand version (DIN 107). The process for the right-hand version is mirror-inverted.

## 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 Faceplates

| Symbol                                                                                   | Meaning                      |
|------------------------------------------------------------------------------------------|------------------------------|
|  16   | Flat faceplate 16 mm         |
|  20   | Flat faceplate 20 mm         |
|  24   | Flat faceplate 24 mm         |
|  6x24 | U-shaped faceplate 6 x 24 mm |

## 1.6 Abbreviations

| Abbreviation | Meaning                   |
|--------------|---------------------------|
| C            | Combination locks         |
| CH           | Power wedges              |
| CB           | Bolt                      |
| CTL          | Catalogue                 |
| DIN L / R    | DIN left / right          |
| E            | E cam                     |
| SRH          | Sash / leaf rebate height |
| IMO          | Installation instructions |
| kg           | Kilograms                 |
| KO           | Couplable at the top      |
| Max.         | Maximum                   |
| Min.         | Minimum                   |
| mm           | Millimetres               |
| Nm           | Torque in newton metres   |
| QB           | Quadbolts                 |
| TF           | ID latch                  |
| V            | V cam                     |
| ZS           | Additional locking device |

### Possible additional lock versions

| Abbreviation | Meaning                                         |
|--------------|-------------------------------------------------|
| 2C           | 2 combination locks                             |
| 2CTF         | 2 combination locks + ID latch                  |
| 2CZS         | 2 combination locks + additional locking device |
| 3C           | 3 combination locks                             |
| 3CTF         | 3 combination locks + ID latch                  |
| 4C           | 4 combination locks                             |
| 4C2QB        | 4 combination locks + 2 Quadbolts               |
| 2CB          | 2 bolts                                         |
| 2CB2V        | 2 bolts + 2 V cams                              |
| 2CBTF        | 2 bolts + ID latch                              |
| 2CBZS        | 2 bolts + additional locking device             |
| 4CB          | 4 bolts                                         |
| 2CH          | 2 power wedges                                  |
| 2CHTF        | 2 power wedges + ID latch                       |
| 2CHZS        | 2 power wedges + additional locking device      |
| 3CHTF        | 3 power wedges + ID latch                       |
| 4CH          | 4 power wedges                                  |
| 4E           | 4 E cams                                        |
| 4V           | 4 V cams                                        |

### Possible striker strip versions (combination locks)

| Abbreviation | Meaning                        |
|--------------|--------------------------------|
| 2C           | 2 combination locks            |
| 2CTF         | 2 combination locks + ID latch |
| 3CTF         | 3 combination locks + ID latch |
| 4C           | 4 combination locks            |

## 1.7 Explanation of terms

### Lock

The term "lock" refers to the deadbolt in the main lock and the additional locks, 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 also by other additional locks. All locking elements engage in corresponding recesses in the frame or frame components.

## **1.8 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.

## **1.9 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

## 1.10 Copyright protection

The contents of this document are copyright-protected. This content can be used when working with the hardware. Any other use is not permitted without written permission of the manufacturer.

## 1.11 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.

## 1.12 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, carboic 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 Stipulated use

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.

Stipulated use also includes compliance with all safety information and specifications contained in these instructions, the other applicable documents and the applicable regulations, directives and national laws.

### 2.3.1 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 7.*

### 2.3.2 Usage restriction

Open and unlocked doors do not meet the requirements for:

- Joint sealing
- Driving rain impermeability
- Sound insulation
- Thermal insulation
- Burglary inhibition

## 2.4 Basic safety information

The following hazards may arise when handling the product.

### 2.4.1 Installation

#### **Imminent risk of death or serious injuries due to incorrect installation!**

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, as well as glass breakage.

- ▶ Only use multipoint locks 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.

#### **Risk of injury due to heavy loads!**

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).

#### **Adverse health effects due to physical overexertion!**

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.



## 2.4.2 Use

### **Potential of serious injuries due to trapping body parts in the opening between leaf and frame!**

Gripping between the leaf and frame when closing doors poses the risk of crushing 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.
- ▶ Refrain from slamming the door shut deliberately or uncontrollably.

### **Risk of injury and property damage due to opening and closing leaves incorrectly!**

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

### **Risk of injury and property damage due to opening and closing leaves incorrectly!**

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

- ▶ When moving the leaf, ensure that it will not slam against the frame or other leaves once fully opened or closed.
- ▶ 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.
- ▶ When closing a leaf and locking the multipoint lock, the gasket counter force must be overcome.
- ▶ Do not use the extended deadbolt to keep the door open.
- ▶ Do not use any tools or aids which act as a lever to actuate the multipoint lock.
- ▶ Only use the designated locking mechanisms.
- ▶ Do not actuate the door lever handle and profile cylinder at the same time.
- ▶ Do not open double-leaf doors using the second opening leaf.

### **Potential risk of injury and property damage due to misuse!**

Misuse can lead to hazardous situations and may destroy the hardware, profiles or other parts within the doors.

- Refrain from introducing obstacles into the opening area between the frame and leaf.
- Do not place heavy loads on the door lever handle; the maximum load is 15 kg.
- Do not place heavy loads on the cylinder key; the maximum load is 15 kg.
- Refrain from placing additional loads which act upon the leaf.

### **Potential risk of injury and property damage due to improper maintenance!**

The doors, including the multipoint lock, require expert maintenance (care, cleaning, servicing and inspection) in order to guarantee their proper condition and safe use.

- ▶ Keep the multipoint lock free of deposits and contaminants.
- ▶ Refrain from performing after-treatment on the locking elements that would prevent them from working properly, e.g. by painting over them.
- ▶ 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.
- ▶ Refrain from performing work on the multipoint lock or striker plate that could impact the structure, mode of operation or correct functioning.

- ▶ Refrain from introducing foreign and unsuitable objects into the multi-point lock or striker plate.

### 2.4.3 Ambient conditions

#### **Potential property damage due to physical and chemical influences!**

In a saline, aggressive or corrosive environment, multipoint locks can be permanently damaged to the point that they can no longer function.

- ▶ Do not use multipoint locks 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.

#### **Potential property damage due to moisture!**

Depending on the outside temperature, relative humidity of the room air and installation situation of the doors, a temporary build-up of condensation may occur. This can lead to corrosion on the multipoint locks and mould growth on the frame or wall. Ambient conditions that are too damp, especially during the construction phase, can lead to timber elements warping.

- ▶ Avoid preventing the circulation of air, e.g. due to deep reveals, curtains or unfavourable positioning of radiators 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.

## 2.5 Operation

The safety symbols and markings and the associated warnings explained below apply to the safe operation of leaves.

#### **Safety symbols and markings**



| Symbol | Meaning                                                                                                                                                                                                                                                                                                                                                                   |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p><b>Trapping body parts in the opening between leaf and frame may lead to serious injuries.</b></p> <p>When closing leaves, never grip between the leaf and frame and always exercise caution.</p> <p>Keep children and anyone unable to understand the risks away from the hazardous area.</p>                                                                         |
|        | <p><b>Placing additional loads on the leaf may lead to minor injuries and property damage.</b></p> <p>Avoid placing additional loads on the leaf.</p>                                                                                                                                                                                                                     |
|        | <p><b>The impact of wind may lead to minor injuries and property damage.</b></p> <p>Ensure that the leaf is guided slowly by hand throughout its entire movement range, until it has been brought into a fully closed or opening position.</p> <p>Avoid exposing the open leaf to wind.</p> <p>Move the leaf to the closed position in windy and draughty conditions.</p> |
|        | <p><b>Introducing obstacles into the opening between leaf and frame may result in minor injuries and property damage.</b></p> <p>Avoid introducing obstacles into the opening between leaf and frame.</p>                                                                                                                                                                 |
|        | <p><b>Pressing the leaf against the edge of an opening (reveal) may pose a risk of minor injuries and cause property damage.</b></p> <p>Avoid pressing the leaf against the edge of an opening (reveal).</p>                                                                                                                                                              |

## 3 Information on the product

### 3.1 Product characteristics

#### Efficiency

- Standardised locking patterns for reduced logistics and installation effort
- Profile-related frame components for efficient installation
- Latch can be turned around when installed for simple conversion on the construction site

#### Security

- Push-back safeguarded after one turn of the key
- E cams, V cams and bolts for basic burglary inhibition
- Power wedge, combination locking and Quadbolt for a high level of burglary inhibition

#### Comfort

- Stable, smooth-running espagnolette for simple operation
- Sound-absorbing whisper latch for closing the door quietly

#### Design

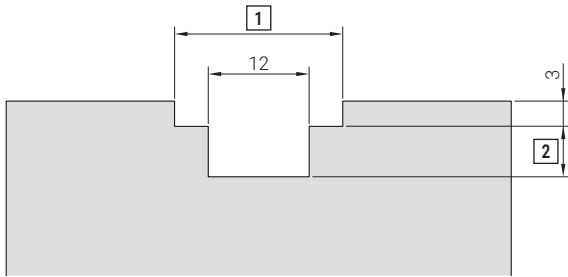
- Door designs up to 3000 mm for freedom of design
- Durable and scratch-resistant surfaces for a high-quality appearance in the long term
- Backsets from 25 to 80 mm for a high level of flexibility

#### Quality

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

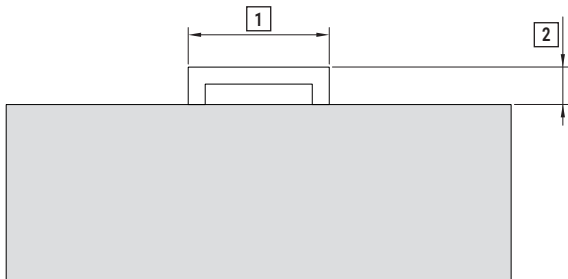
## 3.2 Faceplates

### Flat faceplates



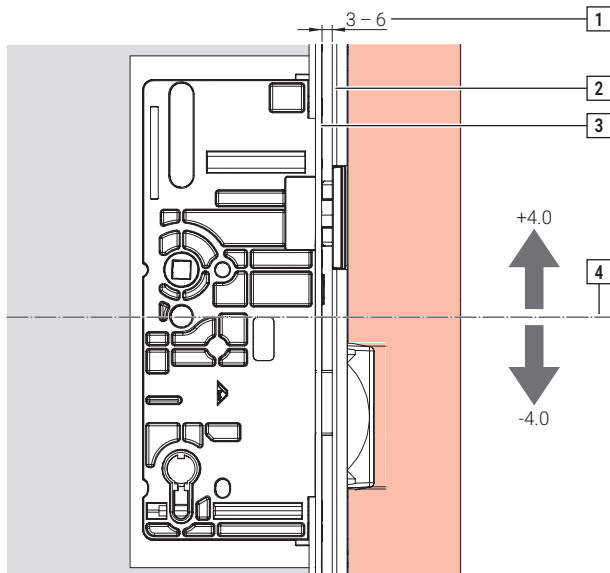
- [1] Faceplate width (16, 20, 24)
- [2] Connecting-rod depth (6 or 9)

### U-shaped faceplates



- [1] Faceplate width (24)
- [2] Faceplate depth (6)

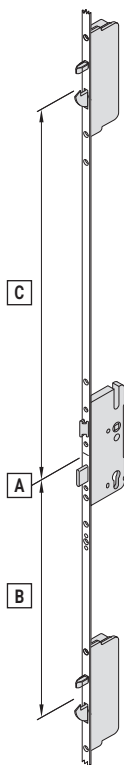
## 3.3 Tolerance – height offset



- [1] Functional clearance (distance between striker / front edge of striker strip and front edge of faceplate)
- [2] Striker / striker strip
- [3] Faceplate
- [4] Height offset between centre of lock and centre of striker (markings present)

### 3.4 Locking pattern

The locking pattern designates the dimensional position of the additional locking points on the faceplate. In this pattern, the first two numbers represent the distance(s) from the centre of the main lock down to the centre of the additional lock(s), while the last two numbers stand for the distance(s) from the centre of the main lock upwards.



| Assignment | Meaning                                                    |
|------------|------------------------------------------------------------|
| [A]        | Centre of main lock                                        |
| [B]        | Centre of main lock downwards to centre of additional lock |
| [C]        | Centre of main lock upwards to centre of additional lock   |

Since the position of the additional lock also impacts the position of the frame components, the locking pattern also applies to these, especially for striker strips and lever-operated espagnolettes.

To ensure you choose the multipoint lock with the ideal level of security for your needs, the highest locking point should be lockable at the top where possible and the lowest locking point must be positioned as far down as possible according to the specific sash rebate height (SRH).

| Locking pattern | Sash rebate height (SRH) |
|-----------------|--------------------------|
| V02/01          | 1800 – 2200 mm           |
| V02/03          | 1900 – 2200 mm           |
| V02/05          | 1500 – 1900 mm           |
| V02/07          | 2200 – 2400 mm           |
| V02/17          | 1900 – 2200 mm           |
| V02/19          | 2200 – 2400 mm           |
| V08/17          | 1900 – 2200 mm           |
| V18/25          | 1750 – 2800 mm           |
| V22/25          | 1900 – 2200 mm           |
| V22/27          | 2200 – 2500 mm           |
| V62/91          | 1900 – 2200 mm           |



## 4 Brief instructions

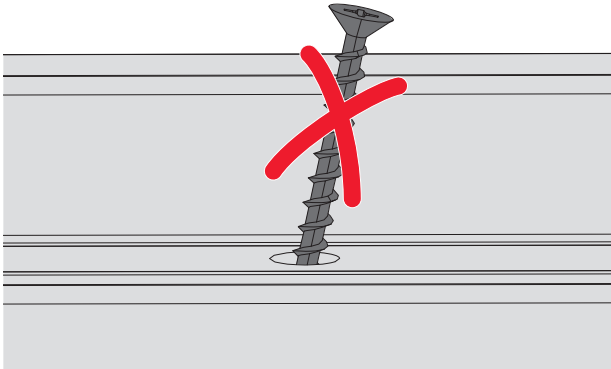
### 4.1 Installation sequence

|                         | Step                                                                                 | Note                       | Page reference                   |
|-------------------------|--------------------------------------------------------------------------------------|----------------------------|----------------------------------|
| <b>Leaf</b>             | Route the profile.                                                                   |                            | → from page 43                   |
|                         | Predrill the door lever handle set.                                                  |                            | → from page 63                   |
|                         | Turn the latch around if required.                                                   |                            | → from page 66                   |
|                         | Install the multipoint lock or extendable multipoint lock.                           |                            | → from page 72                   |
|                         | Install the lever-operated espagnolette (Standard, Plus) on the second opening leaf. | Only for double-leaf doors | → from page 85<br>→ from page 91 |
|                         | Install the lever handle set.                                                        |                            | → from page 74                   |
|                         | Carry out a performance test.                                                        |                            | → from page 76                   |
| <b>Frame</b>            | Route the profile.                                                                   |                            | → from page 77                   |
|                         | Install the striker strip or strikers and any electrical openers required.           |                            | → from page 77                   |
|                         | Install the top shootbolt protrusion striker.                                        | Only for double-leaf doors | → from page 79                   |
|                         | Install the cover bridge at the bottom.                                              | Only for double-leaf doors | See IMO_423                      |
| <b>Final acceptance</b> | Make the necessary adjustments.                                                      |                            | → from page 107                  |
|                         | Lubricate the hardware.                                                              |                            | → from page 122                  |
|                         | Carry out a performance test.                                                        |                            | → from page 123                  |

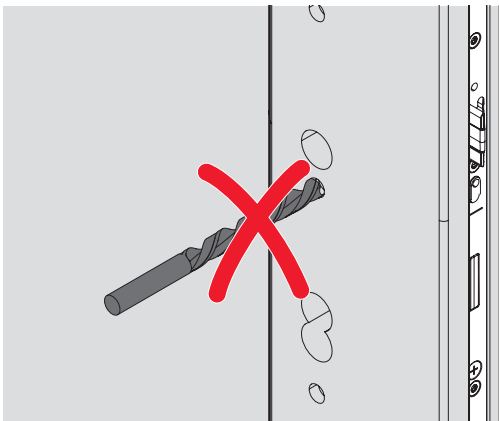
## 5 Installation

### 5.1 General information

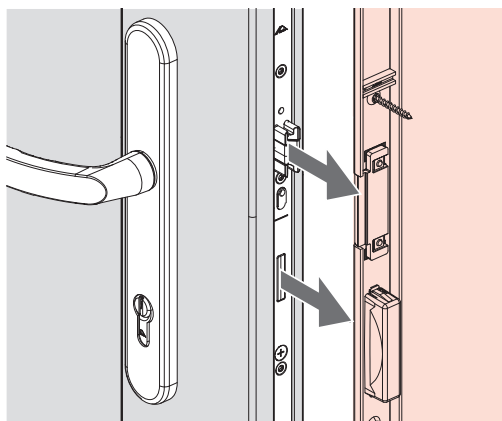
#### 5.1.1 For the fabricator



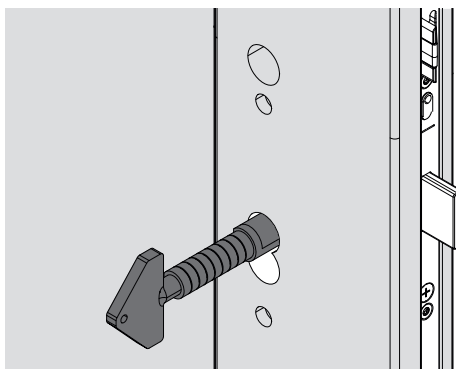
Turn the screws in straight so that no distortion can occur. Do not use stainless-steel screws on the Roto Sil surface. Use stainless-steel screws on stainless-steel components.



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

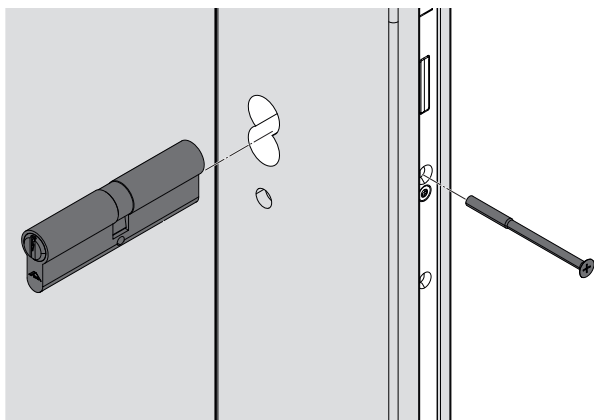


Manufacture door designs so that it is ensured that the locks always operate properly. Observe the axis dimension.



**i INFO**

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



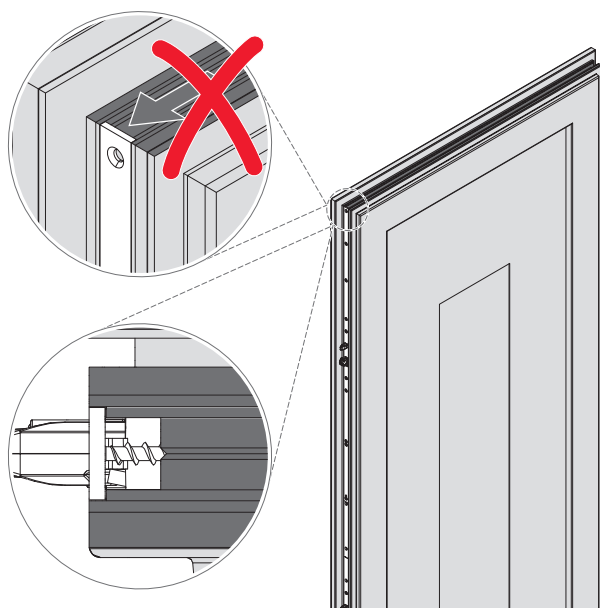
**i INFO**

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



**i INFO**

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

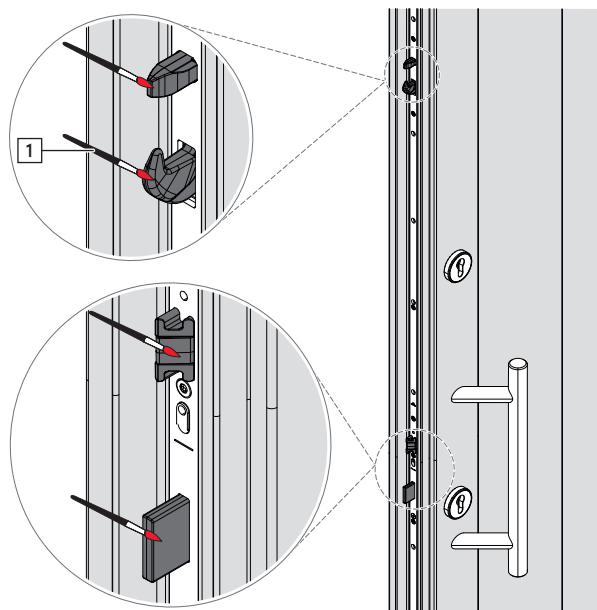


**! ATTENTION**

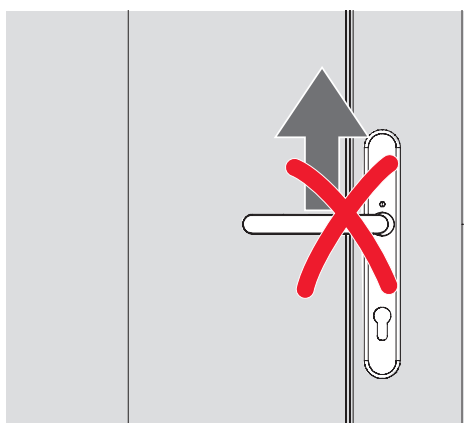
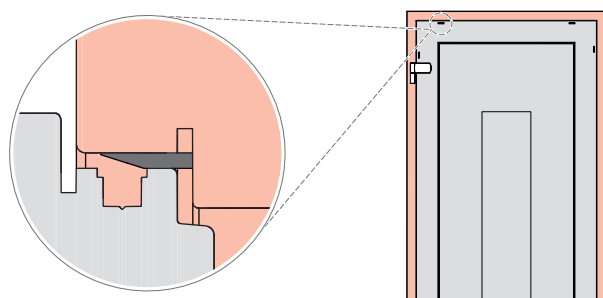
**Contamination may cause property damage.**

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

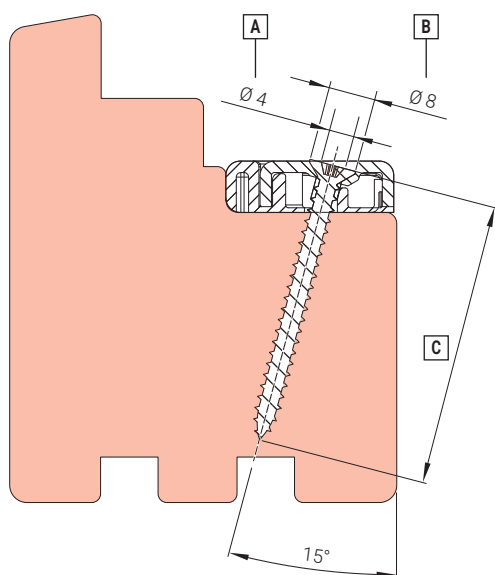
Fasten hardware components using electrogalvanised and passivated steel fixing screws. Use fixing screws with additional sealing in more challenging climatic conditions.

### 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 reach the steel reinforcement and will therefore not hold.

The multipoint lock can be pulled out of the leaf if it is not screwed into the steel reinforcement.

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

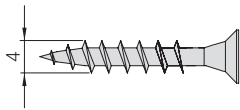


#### INFO

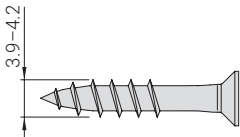
If rivet nuts are used instead of screws, use countersunk nuts.

### 5.2.4 Screwdriving recommendations

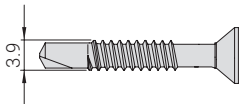
#### Timber



#### 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 U-shaped faceplate



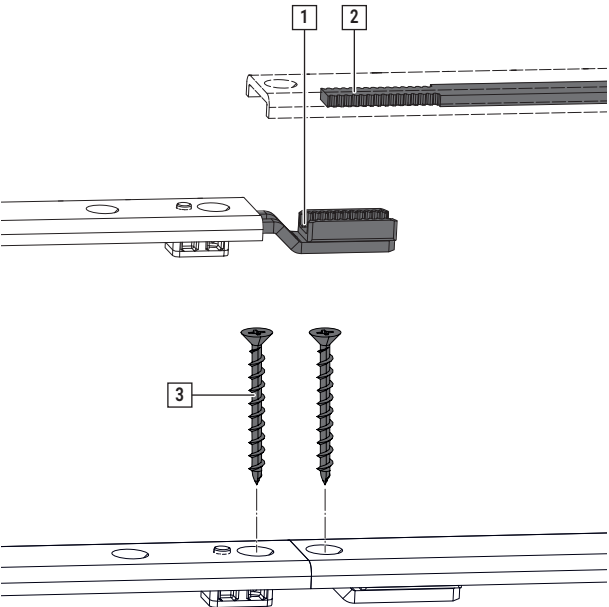
### INFO

Route out the area for U-shaped faceplates. Request the routing drawing if required.



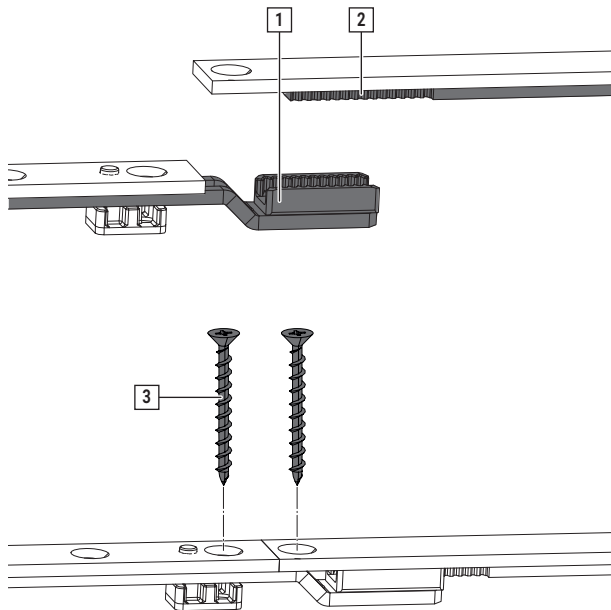
### INFO

Use longer screws for aluminium profiles.



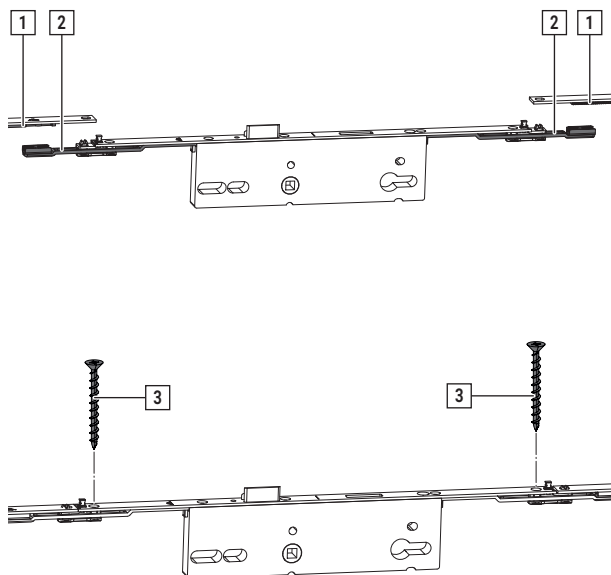
| Assignment | Description                       |
|------------|-----------------------------------|
| [1]        | Coupling point of extension       |
| [2]        | Coupling point of multipoint lock |
| [3]        | Screws                            |

### 5.3.2 Flat faceplate



| Assignment | Description                       |
|------------|-----------------------------------|
| [1]        | Coupling point of extension       |
| [2]        | Coupling point of multipoint lock |
| [3]        | Screws                            |

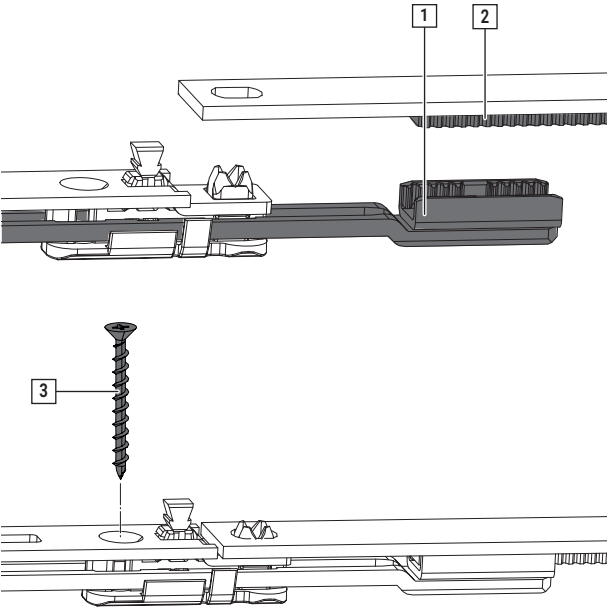
### 5.3.3 Flat faceplate – three-part – KOKU



| Assignment | Description                       |
|------------|-----------------------------------|
| [1]        | Coupling point of extension       |
| [2]        | Coupling point of multipoint lock |
| [3]        | Screws                            |

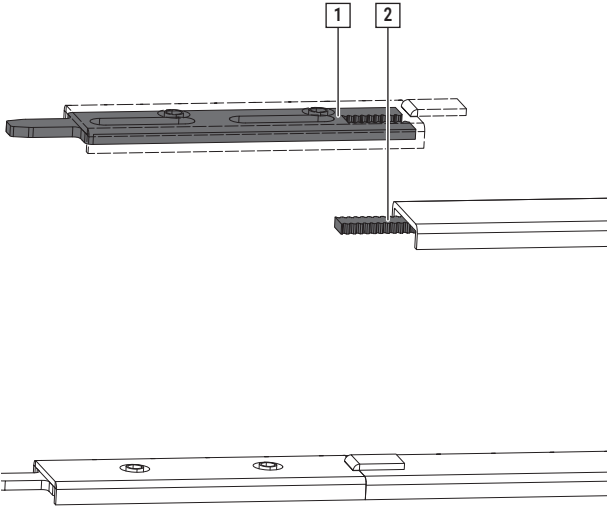


**5.3.4 Flat faceplate – ZUOV**



| Assignment | Description                       |
|------------|-----------------------------------|
| [1]        | Coupling point of extension       |
| [2]        | Coupling point of multipoint lock |
| [3]        | Screws                            |

**5.3.5 Lever-operated espagnolette Standard**



| Assignment | Description                                            |
|------------|--------------------------------------------------------|
| [1]        | Coupling point of extension                            |
| [2]        | Coupling point of lever-operated espagnolette Standard |



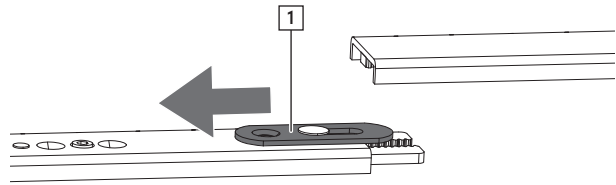
**INFO**

On PVC profiles with opposite hardware groove, cover the groove in the area of the coupling point in order to stabilise the connection.

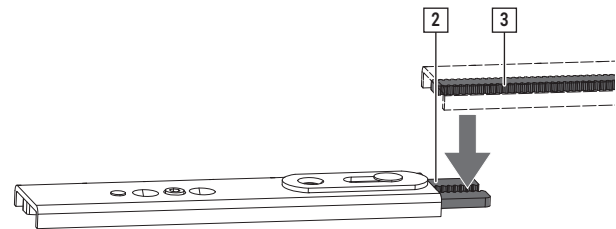
For this purpose, use the Roto NX connecting link (material number 350401), for example.

### 5.3.6 Lever-operated espagnolette Plus

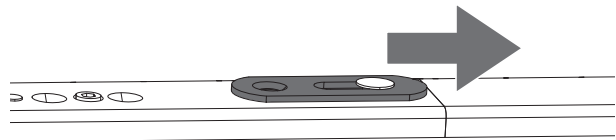
1. Move the faceplate link [1] to expose the coupling point.



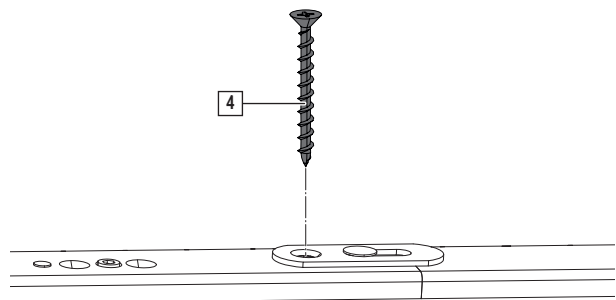
2. Connect the coupling points of the extension [2] and lever-operated espagnolette Plus [3].



3. Slide the faceplate link over the coupling point.



4. Fasten the coupling points with a screw [4].

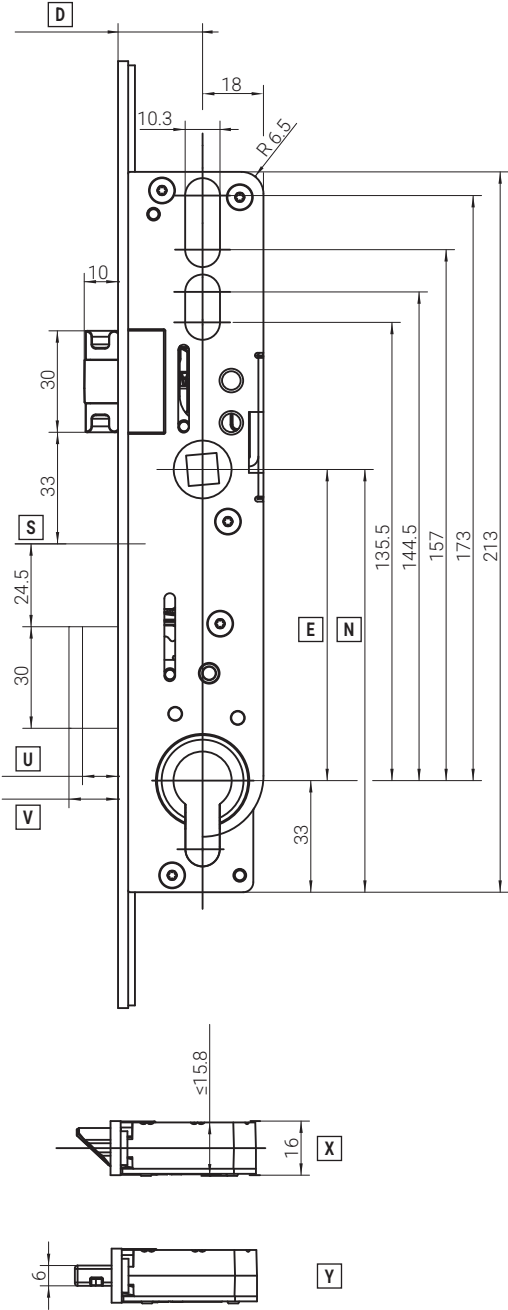




## 5.4 Main locks

### 5.4.1 C600

C600 main lock | Backset 25, 30 mm



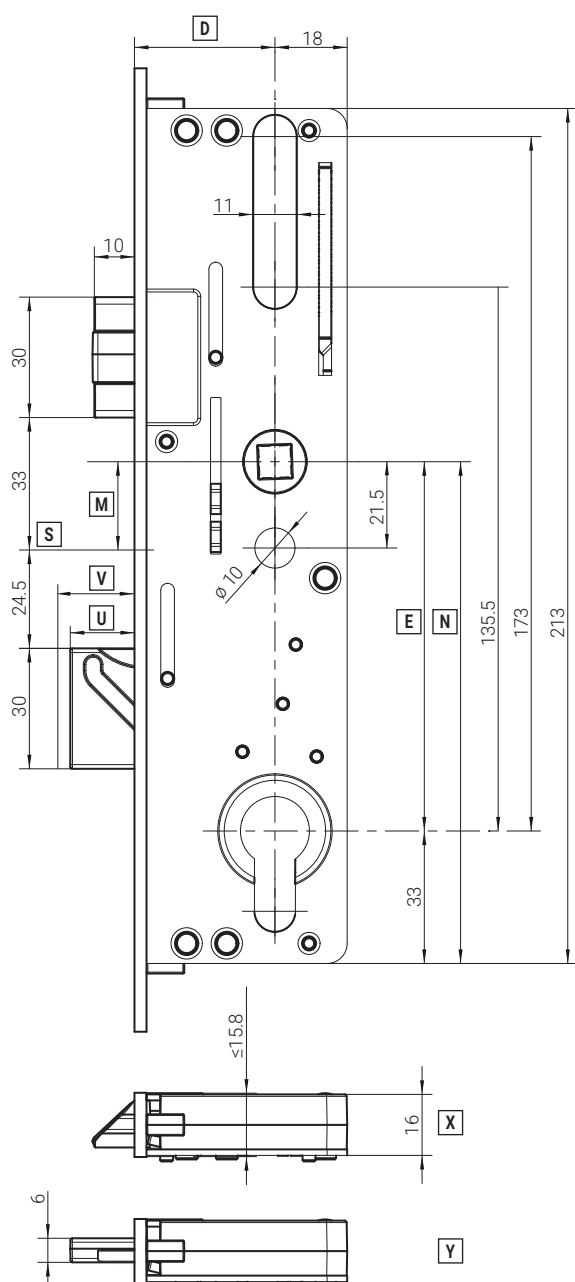
| Assignment | Meaning                                               | Value        |
|------------|-------------------------------------------------------|--------------|
| [D]        | Backset                                               | 25 and 30 mm |
| [E]        | Distance                                              | 92 mm        |
| [N]        | Centre of spindle-receiver to lower edge of main lock | 125 mm       |
| [S]        | Centre of main lock                                   | –            |
| [U]        | Deadbolt protrusion with 25 mm backset                | 10.5 mm      |
| [V]        | Deadbolt protrusion with 30 mm backset                | 14.5 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.

### C600 main lock | Backset 35, 40 mm





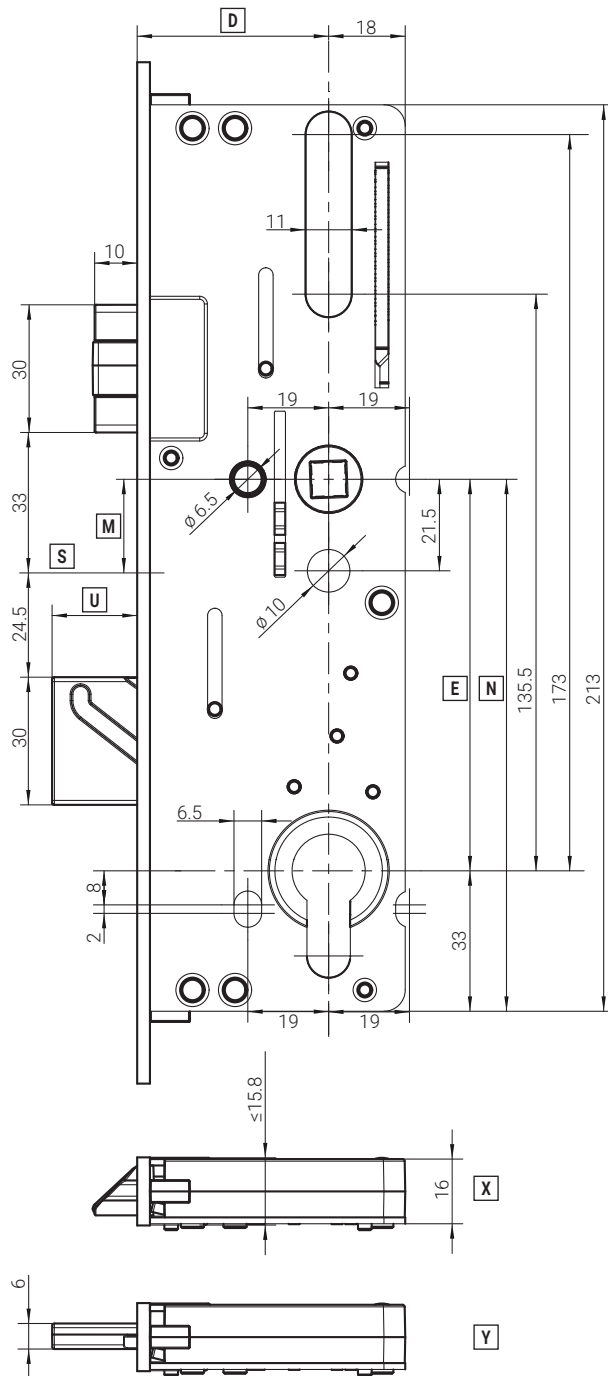
| Assignment | Meaning                                               | Value        |
|------------|-------------------------------------------------------|--------------|
| [D]        | Backset                                               | 35 and 40 mm |
| [E]        | Distance                                              | 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 | 125 mm       |
| [S]        | Centre of main lock                                   | –            |
| [U]        | Deadbolt protrusion with 35 mm backset                | 16 mm        |
| [V]        | Deadbolt protrusion with 40 mm backset                | 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.

**C600 main lock | Backset from 45 mm**



| Assignment | Meaning                                               | Value       |
|------------|-------------------------------------------------------|-------------|
| [D]        | Backset                                               | 45 to 65 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 | 125 mm      |
| [S]        | Centre of main lock                                   | –           |
| [U]        | Deadbolt protrusion                                   | 20 mm       |
| [X]        | Latch (can be turned around)                          | –           |
| [Y]        | Deadbolt                                              | –           |

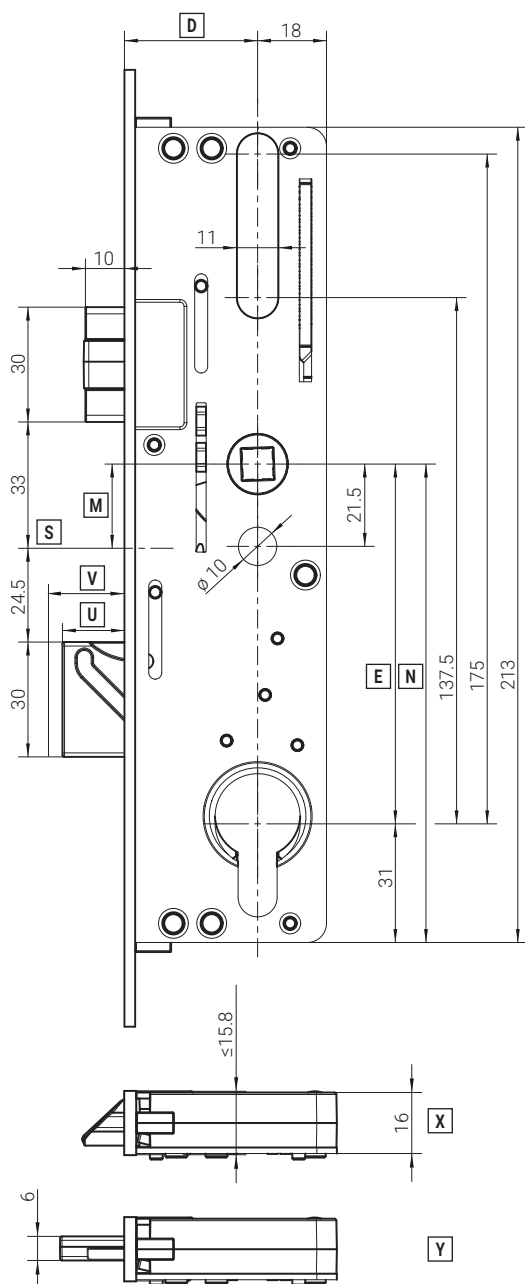


**INFO**

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



**C600 main lock | Backset 35, 40 mm (round cylinder)**



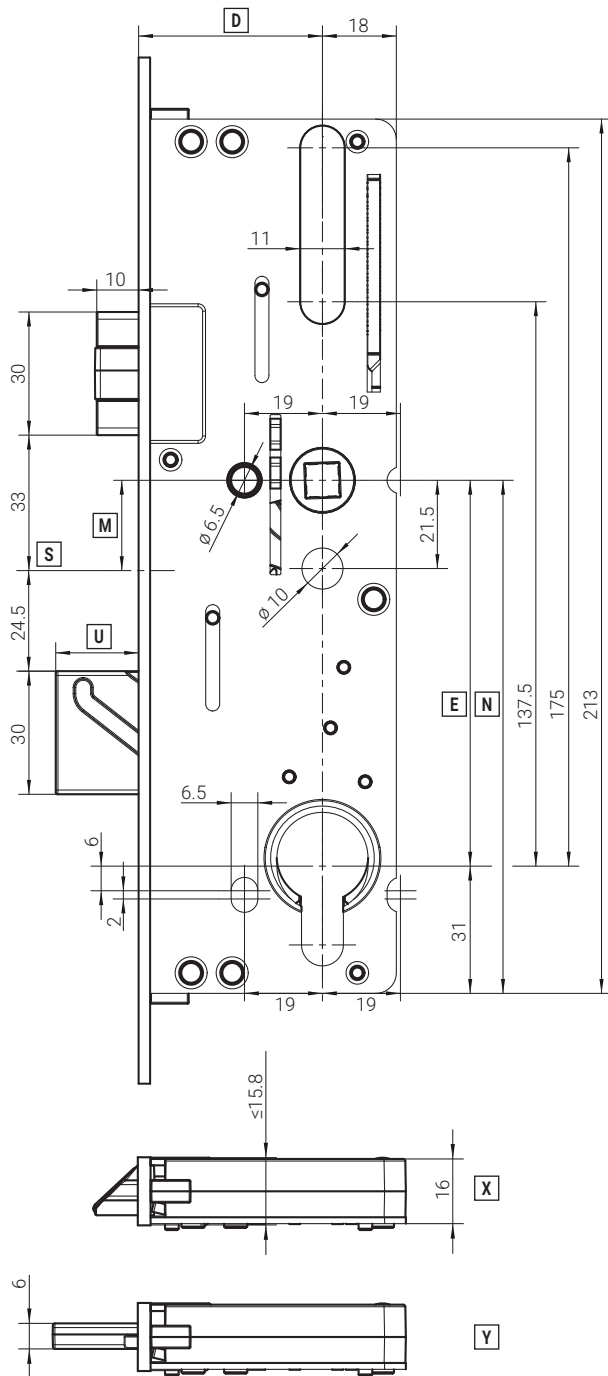
| Assignment | Meaning                                               | Value        |
|------------|-------------------------------------------------------|--------------|
| [D]        | Backset                                               | 35 and 40 mm |
| [E]        | Distance                                              | 94 mm        |
| [M]        | Centre of spindle-receiver to centre of main lock     | 22 mm        |
| [N]        | Centre of spindle-receiver to lower edge of main lock | 125 mm       |
| [S]        | Centre of main lock                                   | –            |
| [U]        | Deadbolt protrusion with 35 mm backset                | 16 mm        |
| [V]        | Deadbolt protrusion with 40 mm backset                | 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.

**C600 main lock | Backset from 45 mm (round cylinder)**



| Assignment | Meaning                                               | Value       |
|------------|-------------------------------------------------------|-------------|
| [D]        | Backset                                               | 45 to 65 mm |
| [E]        | Distance                                              | 94 mm       |
| [M]        | Centre of spindle-receiver to centre of main lock     | 22 mm       |
| [N]        | Centre of spindle-receiver to lower edge of main lock | 125 mm      |
| [S]        | Centre of main lock                                   | –           |
| [U]        | Deadbolt protrusion                                   | 20 mm       |
| [X]        | Latch (can be turned around)                          | –           |
| [Y]        | Deadbolt                                              | –           |



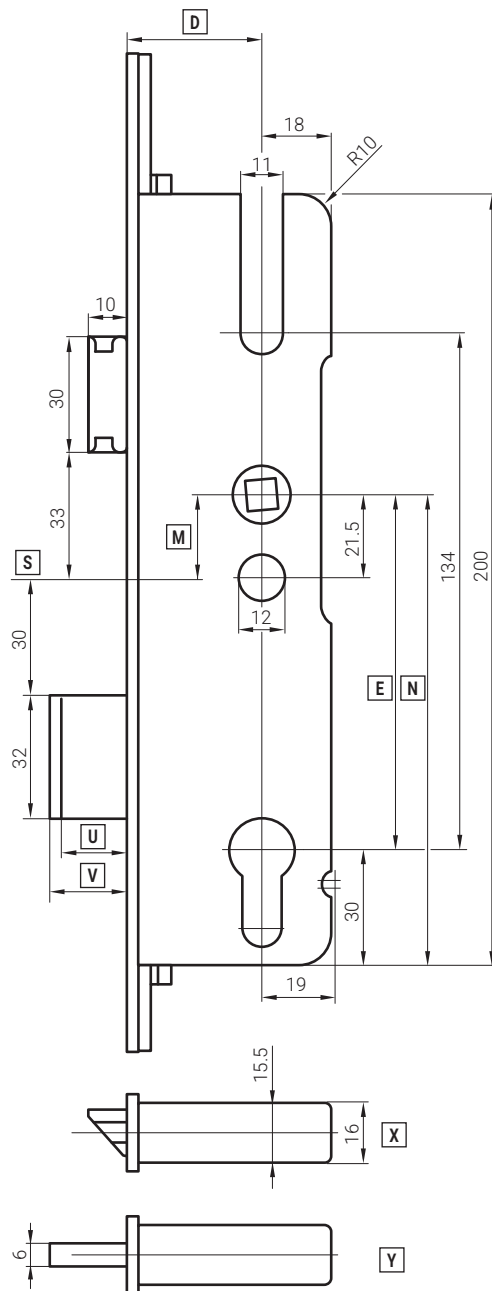
**INFO**

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



## 5.4.2 C500

**C500 main lock | Backset 35, 40 mm**



| Assignment | Meaning                                               | Value        |
|------------|-------------------------------------------------------|--------------|
| [D]        | Backset                                               | 35 and 40 mm |
| [E]        | Distance                                              | 85 mm        |
|            |                                                       | 88 mm        |
| [M]        | Centre of spindle-receiver to centre of main lock     | 15 mm        |
|            |                                                       | 18 mm        |
| [N]        | Centre of spindle-receiver to lower edge of main lock | 115 mm       |
|            |                                                       | 118 mm       |
| [S]        | Centre of main lock                                   | –            |
| [U]        | Deadbolt protrusion with 35 mm backset                | 17 mm        |
| [V]        | Deadbolt protrusion with 40 mm backset                | 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.

Technical drawing of a mechanical part, showing a front view and two side views. The drawing includes various dimensions and labels for identification.

**Front View Dimensions:**

- Overall width: 200
- Overall height: 134
- Top flange width: 10
- Top flange height: 30
- Distance from top flange to center of first hole: 33
- Distance from center of first hole to center of second hole: 19
- Distance from center of second hole to center of third hole: 19
- Distance from center of third hole to right edge: 18
- Radius of top right corner: R10
- Radius of bottom right corner: R10
- Distance from bottom flange to center of first hole: 21.5
- Distance from bottom flange to center of second hole: 21.5
- Distance from bottom flange to center of third hole: 21.5
- Distance from bottom flange to center of fourth hole: 30
- Distance from center of fourth hole to right edge: 19
- Distance from center of fourth hole to center of fifth hole: 19
- Distance from center of fifth hole to right edge: 19
- Distance from center of fifth hole to center of sixth hole: 12
- Distance from center of sixth hole to right edge: 12
- Distance from center of sixth hole to center of seventh hole: 6.5
- Distance from center of seventh hole to right edge: 6.5
- Distance from center of seventh hole to center of eighth hole: 8
- Distance from center of eighth hole to right edge: 8
- Distance from center of eighth hole to center of ninth hole: 6.5
- Distance from center of ninth hole to right edge: 6.5
- Distance from center of ninth hole to center of tenth hole: 15.5
- Distance from center of tenth hole to right edge: 15.5
- Distance from center of tenth hole to center of eleventh hole: 16
- Distance from center of eleventh hole to right edge: 16

**Labels:**

- S:** Label for the top flange.
- M:** Label for the center of the first hole.
- E:** Label for the center of the second hole.
- N:** Label for the center of the third hole.
- U:** Label for the center of the fourth hole.
- X:** Label for the center of the fifth hole.
- Y:** Label for the center of the sixth hole.

| Assignment | Meaning                                               | Value       |
|------------|-------------------------------------------------------|-------------|
| [D]        | Backset                                               | 45 to 80 mm |
| [E]        | Distance                                              | 72 mm       |
|            |                                                       | 85 mm       |
|            |                                                       | 88 mm       |
| [M]        | Centre of spindle-receiver to centre of main lock     | 2 mm        |
|            |                                                       | 15 mm       |
|            |                                                       | 18 mm       |
| [N]        | Centre of spindle-receiver to lower edge of main lock | 102 mm      |
|            |                                                       | 115 mm      |
|            |                                                       | 118 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 Single-leaf doors

### 5.5.1 Overview of multipoint locks

#### Possible additional lock versions

| Abbreviation | Meaning                                         |
|--------------|-------------------------------------------------|
| 2C           | 2 combination locks                             |
| 2CTF         | 2 combination locks + ID latch                  |
| 2CZS         | 2 combination locks + additional locking device |
| 3C           | 3 combination locks                             |
| 3CTF         | 3 combination locks + ID latch                  |
| 4C           | 4 combination locks                             |
| 4C2QB        | 4 combination locks + 2 Quadbolts               |
| 2CB          | 2 bolts                                         |
| 2CB2V        | 2 bolts + 2 V cams                              |
| 2CBTF        | 2 bolts + ID latch                              |
| 2CBZS        | 2 bolts + additional locking device             |
| 4CB          | 4 bolts                                         |
| 2CH          | 2 power wedges                                  |
| 2CHTF        | 2 power wedges + ID latch                       |
| 2CHZS        | 2 power wedges + additional locking device      |
| 3CHTF        | 3 power wedges + ID latch                       |
| 4CH          | 4 power wedges                                  |
| 4E           | 4 E cams                                        |
| 4V           | 4 V cams                                        |

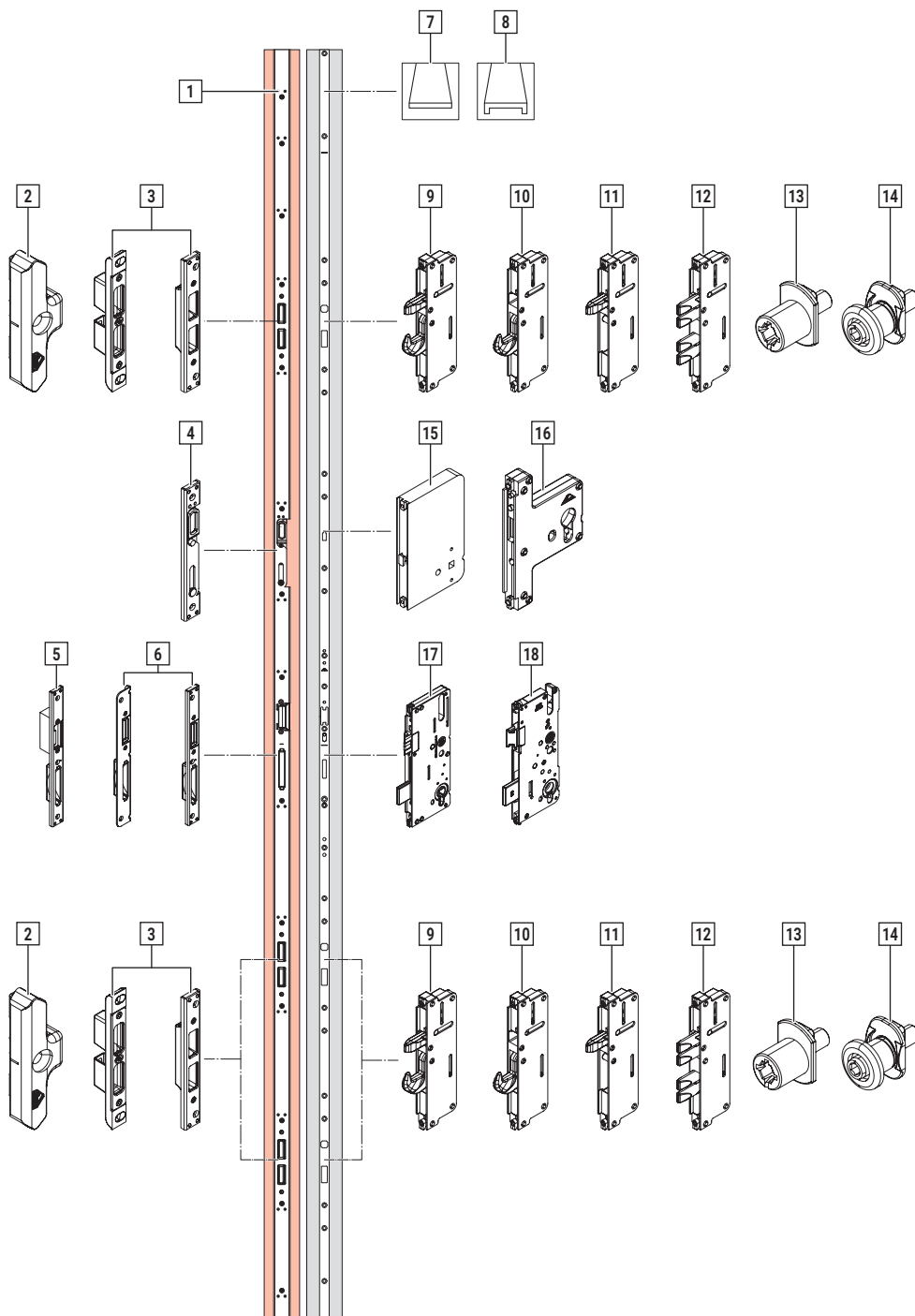
#### Possible striker strip versions (combination locks)

| Abbreviation | Meaning                        |
|--------------|--------------------------------|
| 2C           | 2 combination locks            |
| 2CTF         | 2 combination locks + ID latch |
| 3CTF         | 3 combination locks + ID latch |
| 4C           | 4 combination locks            |

## Installation

### Single-leaf doors

#### Overview of multipoint locks



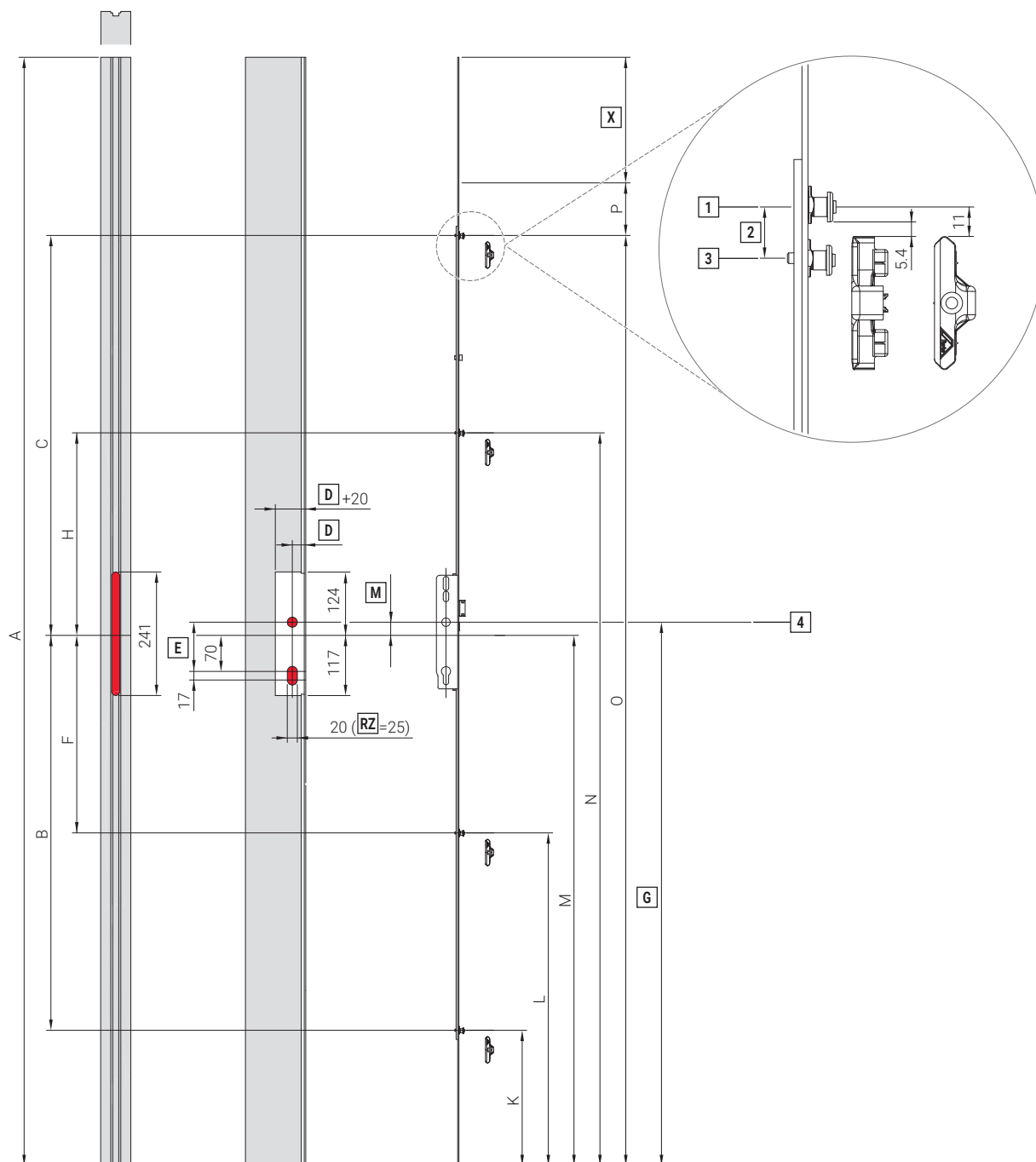
| Frame |                                      | Leaf |                                |
|-------|--------------------------------------|------|--------------------------------|
| [1]   | Striker strip                        | [7]  | Flat faceplate                 |
| [2]   | E / V cam striker                    | [8]  | U-shaped faceplate             |
| [3]   | Combination striker                  | [9]  | Combination lock (C)           |
| [4]   | ID latch striker                     | [10] | Power wedge (CH)               |
| [5]   | Electrical opener / deadbolt striker | [11] | Bolt (CB)                      |
| [6]   | Latch / deadbolt striker             | [12] | Quadbolt (QB)                  |
|       |                                      | [13] | E cam (E)                      |
|       |                                      | [14] | V cam (V)                      |
|       |                                      | [15] | ID latch (TF)                  |
|       |                                      | [16] | Additional locking device (ZS) |
|       |                                      | [17] | Main lock C600                 |
|       |                                      | [18] | Main lock C500                 |



## 5.5.2 Drilling and routing dimensions

### 5.5.2.1 Additional locks (E, V)

Leaf



- [1] Centre of E / V cam open position
- [2] Travel 20
- [3] Centre of E / V cam locked position
- [4] Centre of spindle-receiver

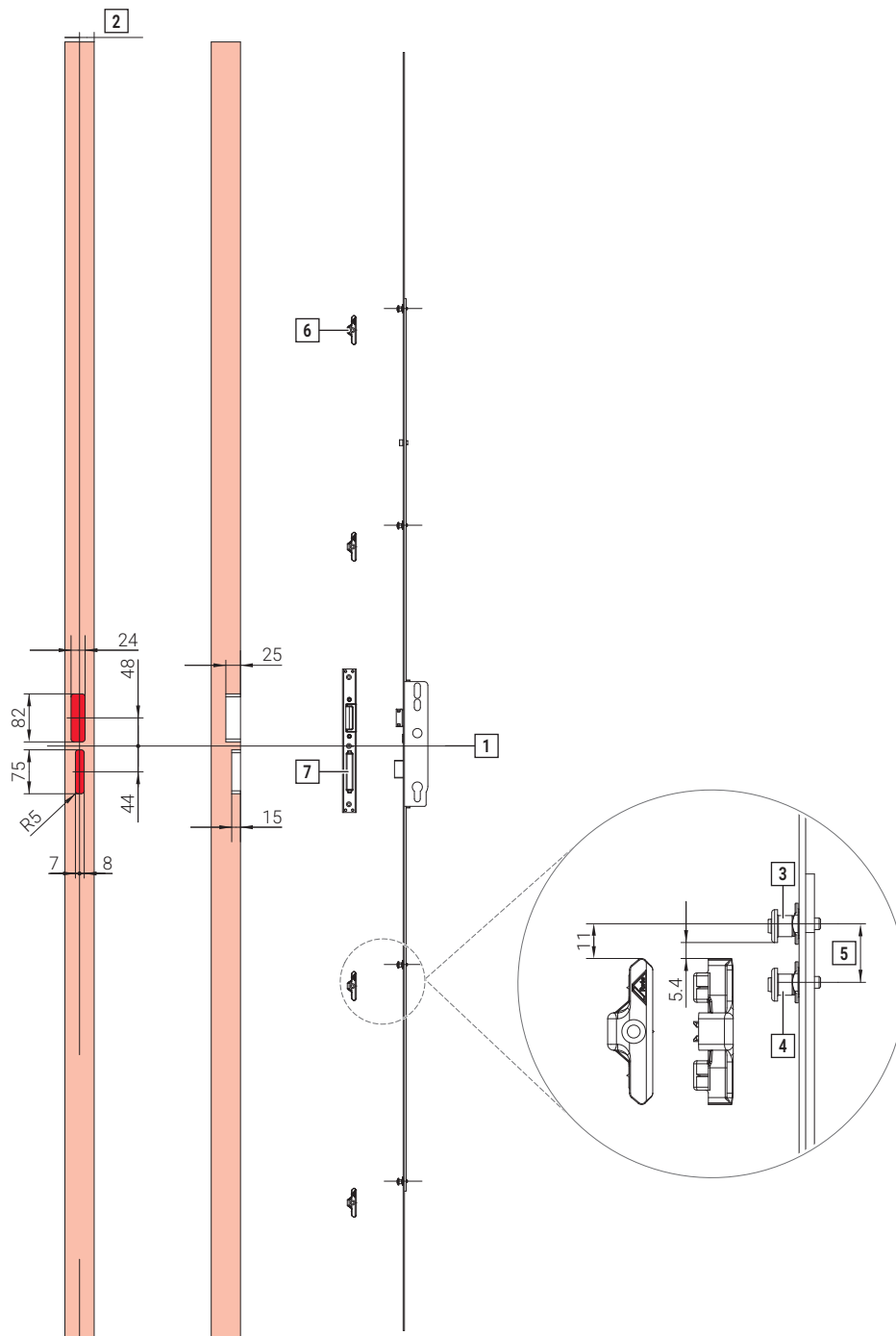
- [D] Backset
- [E] Distance
- [M] Centre of spindle-receiver to centre of main lock
- [RZ] Round cylinder
- [X] Cropping range

**Installation**  
**Single-leaf doors**  
Drilling and routing dimensions

| Handle height at various distances |         |      |      |      |
|------------------------------------|---------|------|------|------|
| [G]                                | 1020    | 1016 | 1013 | 1000 |
| [E]                                | 92 / 94 | 88   | 85   | 72   |
| [M]                                | 22      | 18   | 15   | 2    |

| Pattern | A    | B   | C   | F   | H   | K   | L   | M   | N    | O    | P   | [X] |
|---------|------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|-----|
| V18/25  | 2165 | 878 | 767 | 353 | 397 | 120 | 645 | 998 | 1395 | 1765 | –   | –   |
| V22/25  | 2200 | 723 | 767 | 353 | 397 | 275 | 645 | 998 | 1395 | 1765 | 155 | 300 |
| V22/27  | 2500 | 723 | 997 | 353 | 497 | 275 | 645 | 998 | 1495 | 1995 | 225 | 300 |

## Frame





- [1] Faceplate marking
- [2] Routing axis
- [3] Centre of E / V cam open position
- [4] Centre of E / V cam locked position
- [5] Travel 20
- [6] E / V cam striker
- [7] Latch / deadbolt striker



---

**INFO**

Use the marking jig for locking cams to determine the position of the striker.

Position the marking jig on the E or V cam. Determine the position of the locking component and mark it.

---



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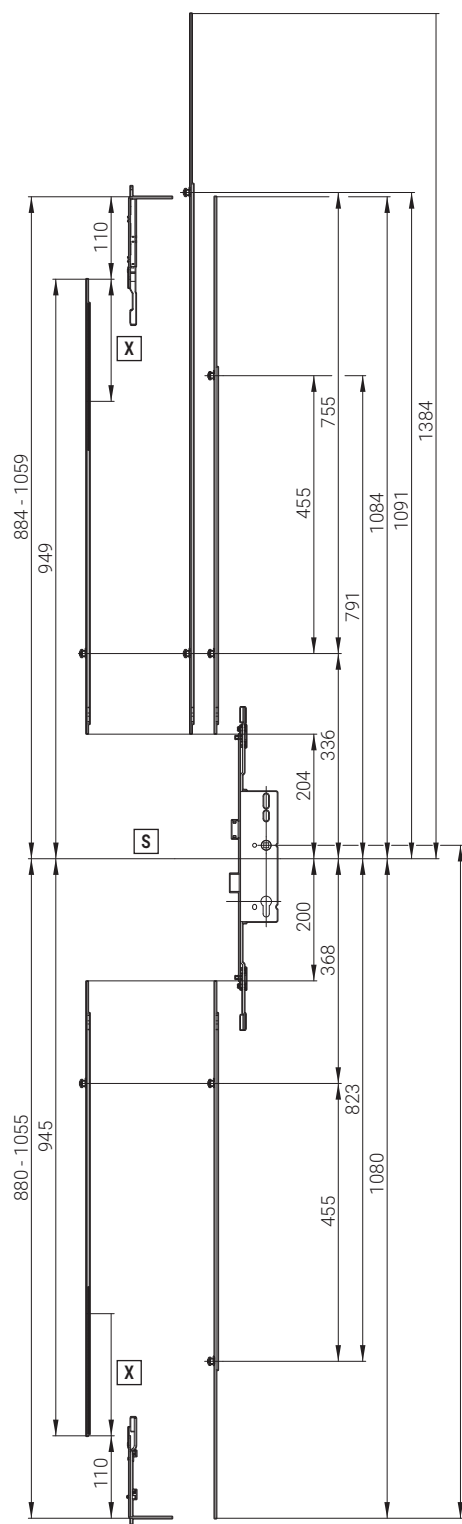
**INFO**

PVC strikers for a 4 E / V lock depend on the profile. No routing is required.

Request the routing drawings for timber strikers.

---

### 5.5.2.2 C600 – three-part

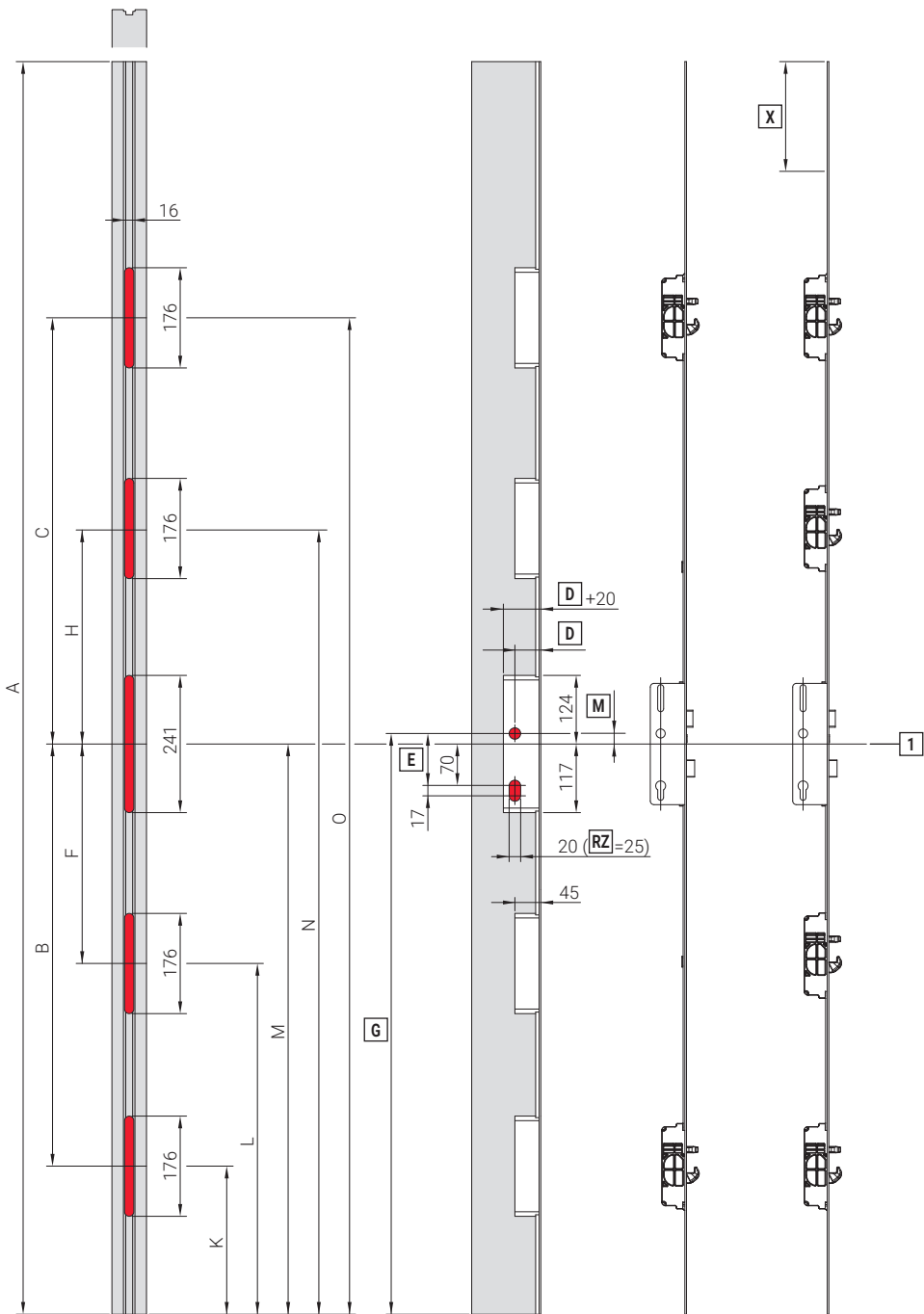


| Assignment | Meaning             | Value  |
|------------|---------------------|--------|
| [S]        | Centre of main lock | –      |
| [X]        | Cropping range      | 200 mm |



### 5.5.2.3 Additional locks (CB, CH, C)

#### Leaf



[1] Faceplate marking

[D] Backset

[RZ] Round cylinder

[E] Distance

[X] Cropping range

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

| Handle height at various distances |         |      |      |      |
|------------------------------------|---------|------|------|------|
| [G]                                | 1020    | 1016 | 1013 | 1000 |
| [E]                                | 92 / 94 | 88   | 85   | 72   |
| [M]                                | 22      | 18   | 15   | 2    |

## Installation

### Single-leaf doors

#### Drilling and routing dimensions

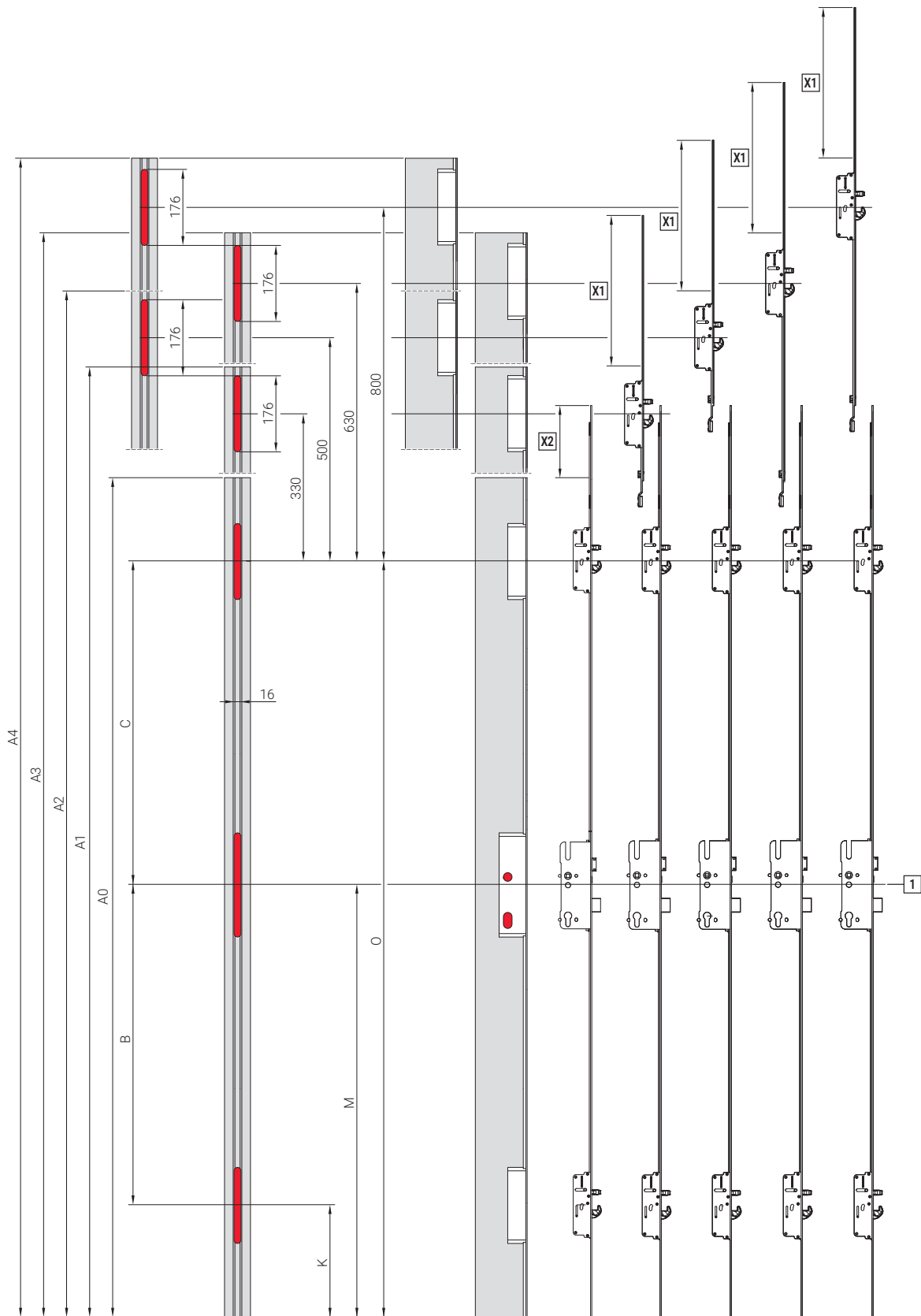
| Pattern | A    | B   | C   | F   | H   | K   | L   | M   | N    | O    | [X] |
|---------|------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|
| V02/01  | 2200 | 738 | 632 | –   | –   | 260 | –   | 998 | –    | 1630 | 400 |
| V02/03  | 2200 | 738 | 752 | –   | –   | 260 | –   | 998 | –    | 1750 | 300 |
| V02/05  | 1900 | 738 | 382 | –   | –   | 260 | –   | 998 | –    | 1380 | 400 |
| V02/07  | 2400 | 738 | 982 | –   | –   | 260 | –   | 998 | –    | 1980 | 200 |
| V08/17  | 2200 | 738 | 752 | 368 | 382 | 260 | 630 | 998 | 1380 | 1750 | 300 |

#### Couplable multipoint locks (CB, CH, C)



#### INFO

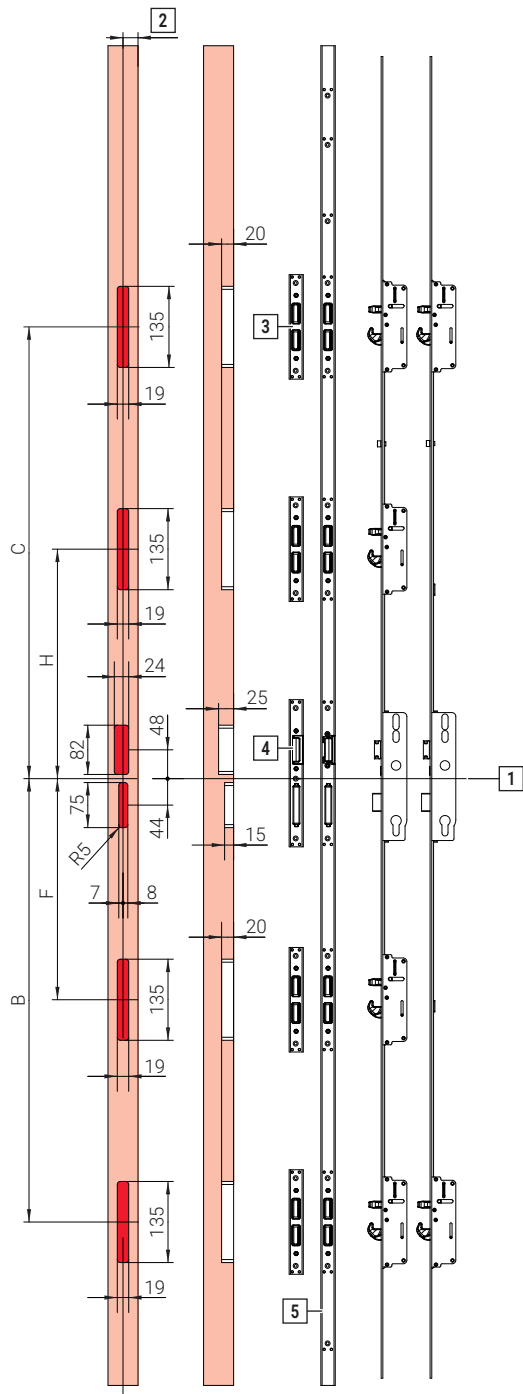
Route out the area for U-shaped faceplates. Request the routing drawing if required.



[1] Faceplate marking

| Pattern | A0          | A1          | A2          | A3          | A4          | B   | C   | K   | M   | O    | [X1]                                  | [X2] |
|---------|-------------|-------------|-------------|-------------|-------------|-----|-----|-----|-----|------|---------------------------------------|------|
| V02/03  | 1900 – 2200 | 2400 – 2530 | 2530 – 2700 | 2700 – 2830 | 2830 – 3000 | 738 | 752 | 260 | 998 | 1750 | Max. 200 depending on the leaf height | 170  |

## Frame



- [1] Faceplate marking
- [2] Routing axis
- [3] Combination striker
- [4] Latch / deadbolt striker
- [5] 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

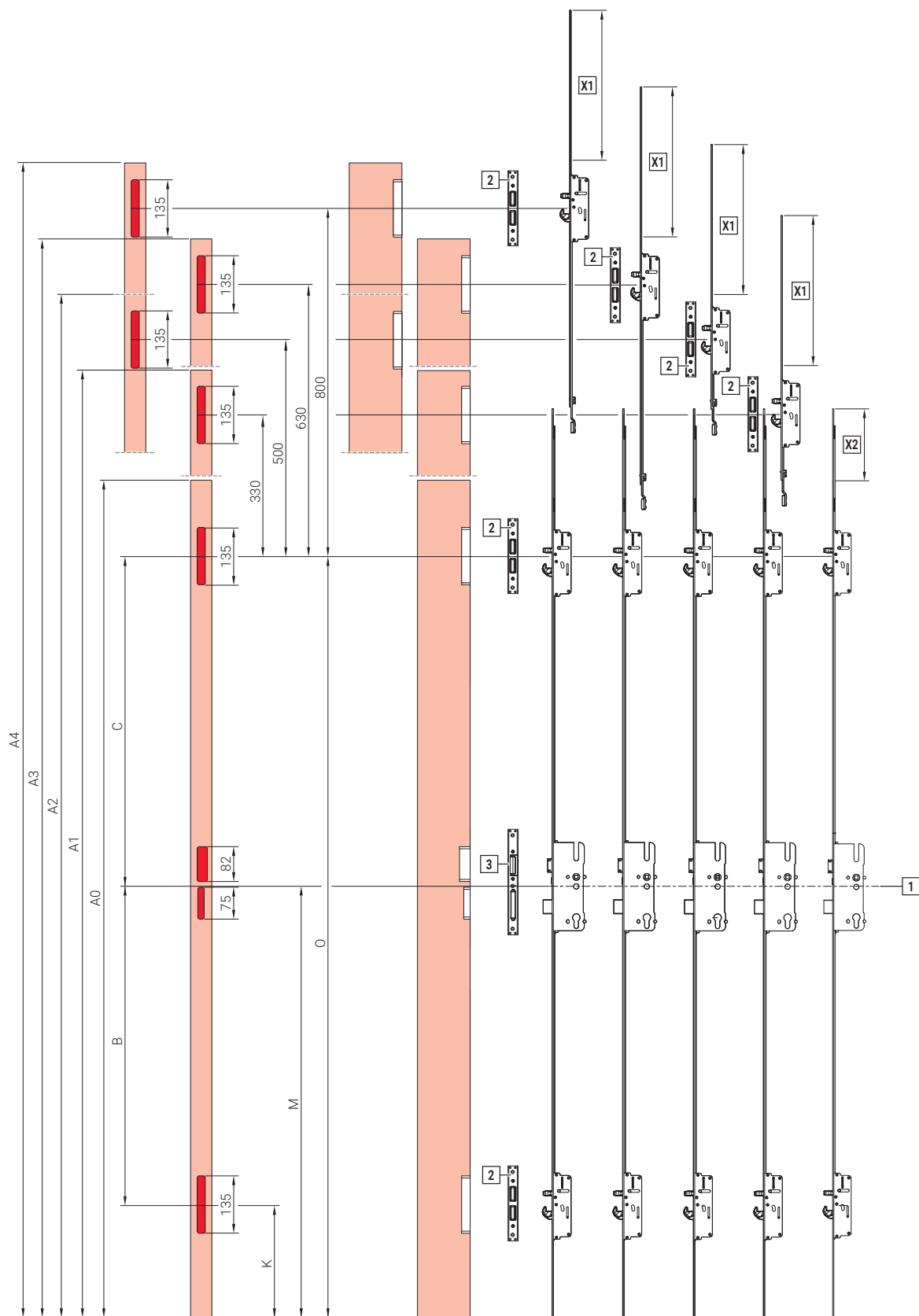


**INFO**

The routing axis depends on the profile.

| Pattern | B   | C   | F   | H   |
|---------|-----|-----|-----|-----|
| V02/01  | 738 | 632 | –   | –   |
| V02/03  | 738 | 752 | –   | –   |
| V02/05  | 738 | 382 | –   | –   |
| V02/07  | 738 | 982 | –   | –   |
| V08/17  | 738 | 752 | 368 | 382 |

**Couplable multipoint lock (CB, CH, C)**



[1] Faceplate marking

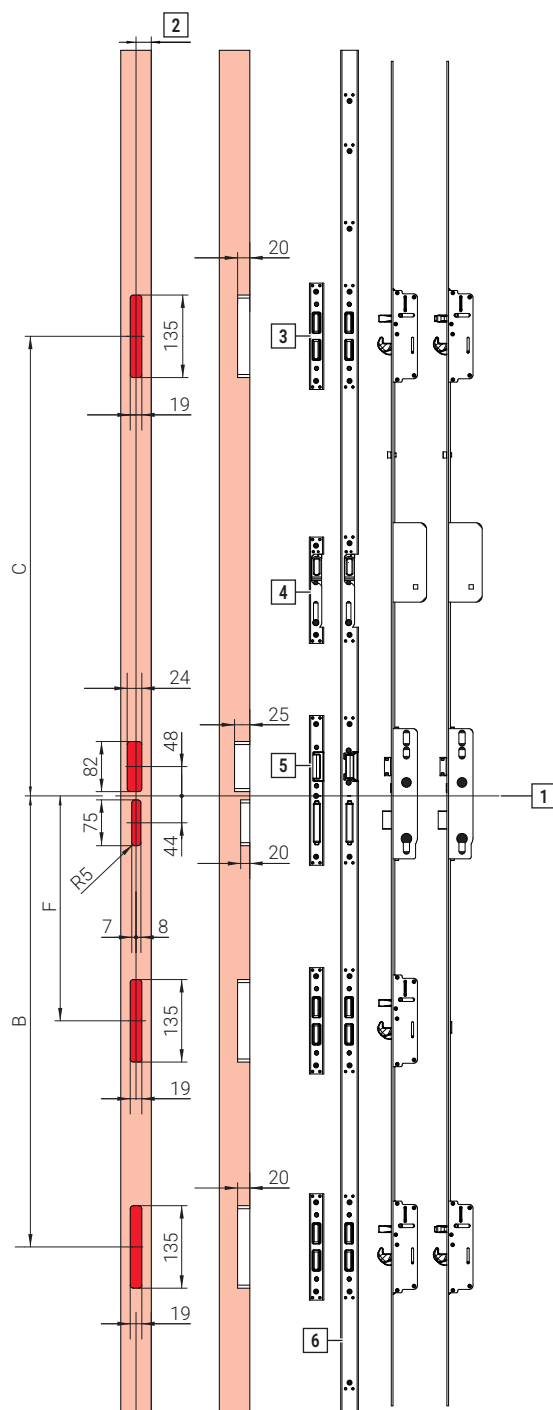
| Pattern | A0          | A1          | A2          | A3          | A4          | B   | C   | K   | M   | O    | [X1]                                   | [X2] |
|---------|-------------|-------------|-------------|-------------|-------------|-----|-----|-----|-----|------|----------------------------------------|------|
| V02/03  | 1900 – 2200 | 2400 – 2530 | 2530 – 2700 | 2700 – 2830 | 2830 – 3000 | 738 | 752 | 260 | 998 | 1750 | Max. 200 depending on the frame height | 170  |



**Installation**  
**Single-leaf doors**  
 Drilling and routing dimensions

| Pattern | A    | B   | C   | F   | H   | K   | L   | M   | N    | O    | [X] |
|---------|------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|
| V02/17  | 2200 | 738 | 752 | –   | 382 | 260 | –   | 998 | 1380 | 1750 | 300 |
| V02/19  | 2400 | 738 | 982 | –   | 382 | 260 | –   | 998 | 1380 | 1980 | 200 |
| V08/17  | 2200 | 738 | 752 | 368 | 382 | 260 | 630 | 998 | 1380 | 1750 | 300 |

**Frame**



- [1] Faceplate marking
- [2] Routing axis
- [3] Combination striker
- [4] ID latch striker
- [5] Latch / deadbolt striker
- [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



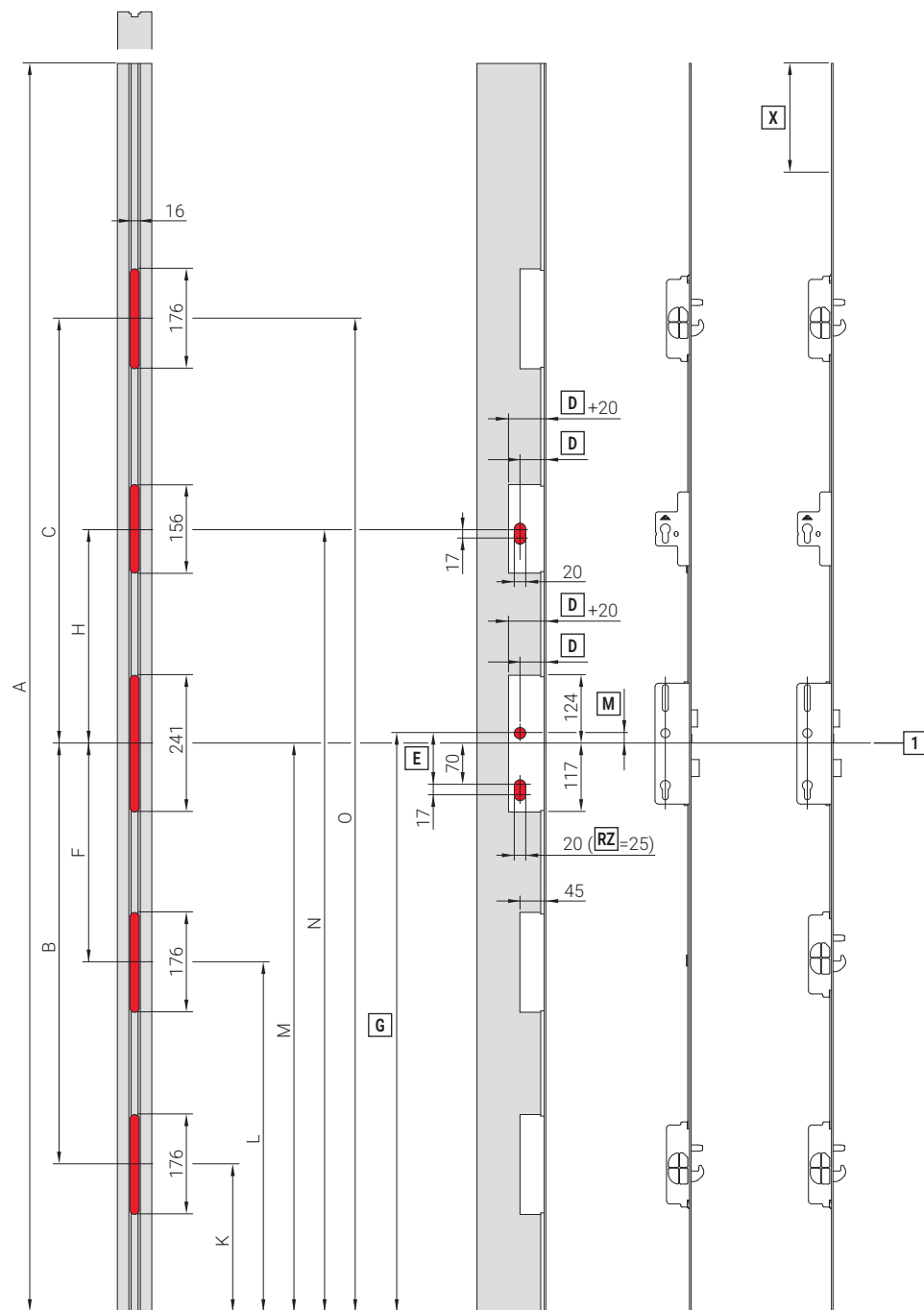
**INFO**

The routing axis depends on the profile.

| Pattern | B   | C   | F   |
|---------|-----|-----|-----|
| V02/17  | 738 | 752 | –   |
| V02/19  | 738 | 982 | –   |
| V08/17  | 738 | 752 | 368 |

### 5.5.2.5 Additional locks and additional locking device (CBZS, CHZS, CZS)

#### Leaf



[1] Faceplate marking

[D] Backset

[E] Distance

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

[RZ] Round cylinder

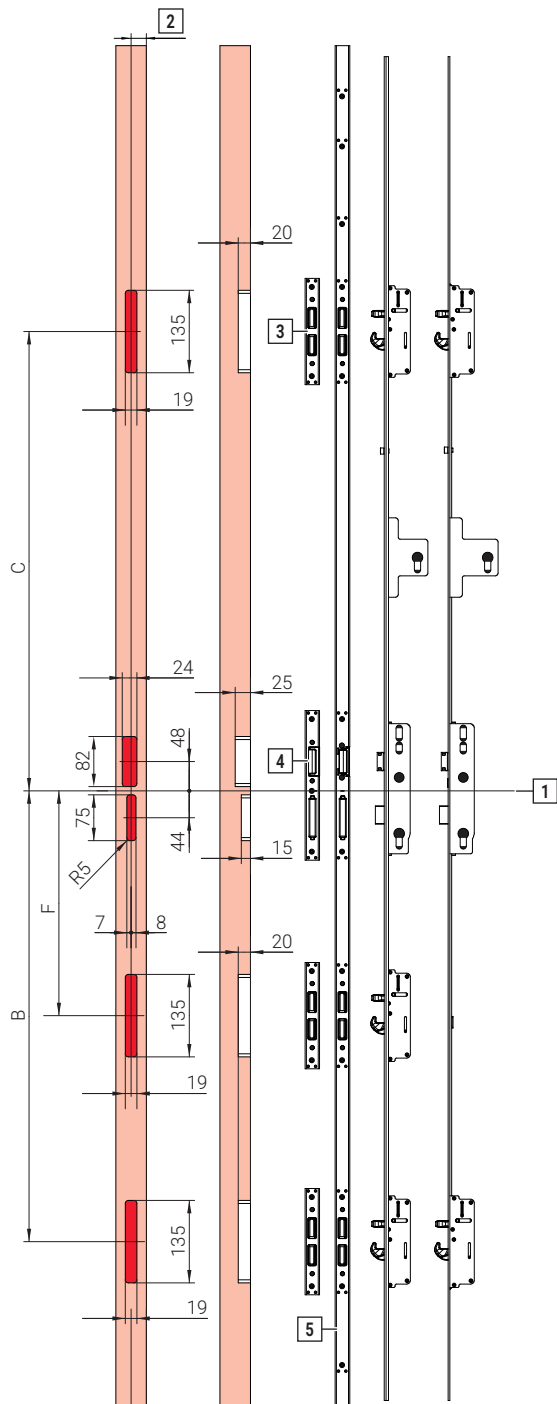
[X] Cropping range

| Handle height at various distances |      |      |
|------------------------------------|------|------|
| [G]                                | 1020 | 1000 |
| [E]                                | 92   | 72   |
| [M]                                | 22   | 2    |



| Pattern | A    | B   | C   | F | H   | K   | L | M   | N    | O    | [X] |
|---------|------|-----|-----|---|-----|-----|---|-----|------|------|-----|
| V02/17  | 2200 | 738 | 752 | – | 382 | 260 | – | 998 | 1380 | 1750 | 300 |
| V02/19  | 2400 | 738 | 982 | – | 382 | 260 | – | 998 | 1380 | 1980 | 200 |

## Frame



- [1] Faceplate marking
- [2] Routing axis
- [3] Combination striker
- [4] Latch / deadbolt striker
- [5] 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

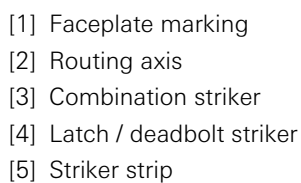
The routing axis depends on the profile.

| Pattern | B   | C   | F |
|---------|-----|-----|---|
| V02/17  | 738 | 752 | – |
| V02/19  | 738 | 982 | – |



### Drilling and routing dimensions

## Frame



- Subject to change.



**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



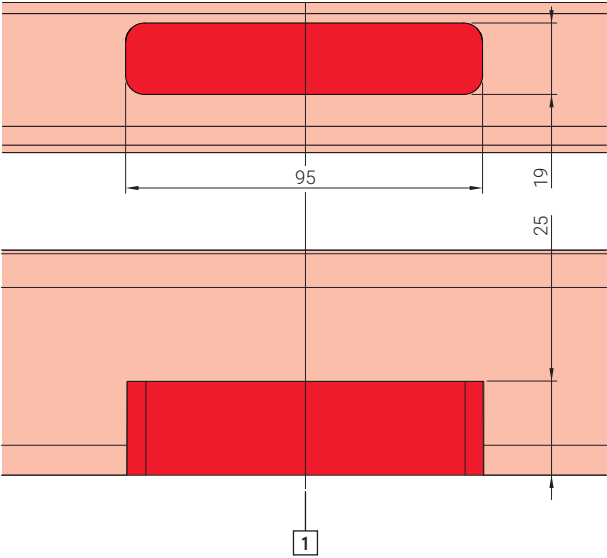
**INFO**

The routing axis depends on the profile.

Drilling and routing dimensions on the C600 frame with 6 additional locks (4C2QB)

| Pattern | B   | C   | F   | H   | I   | J   |
|---------|-----|-----|-----|-----|-----|-----|
| V62/91  | 782 | 782 | 516 | 516 | 250 | 250 |

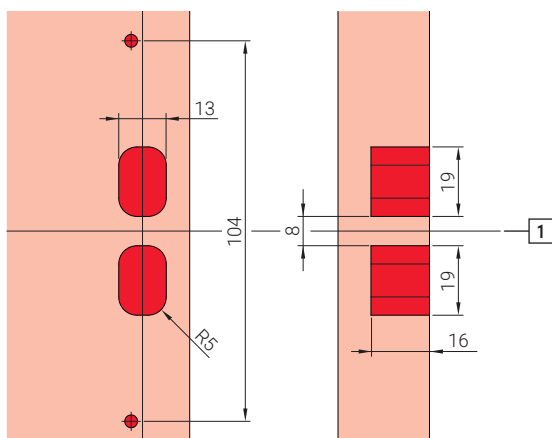
**5.5.2.7 Top shootbolt protrusion**



[1] Centre of shootbolt protrusion

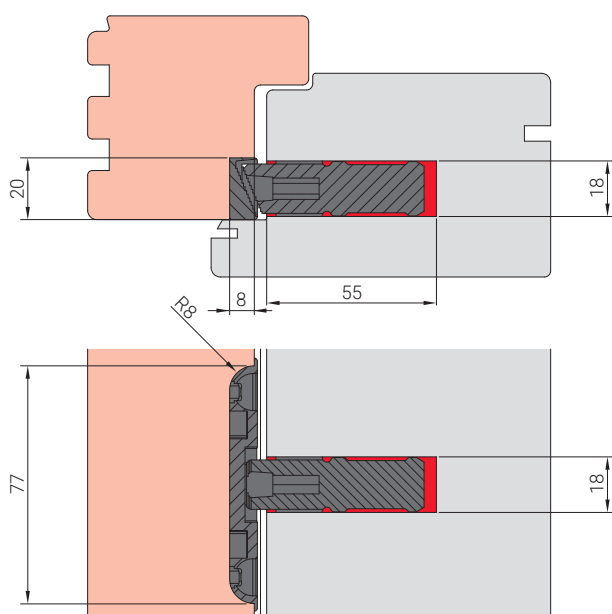
### 5.5.2.8 Hinge retaining mechanism

#### Hinge retaining mechanism cam



[1] Faceplate marking

#### Hinge retaining mechanism set





### 5.5.3 Sash

#### 5.5.3.1 Predrilling the door lever handle set



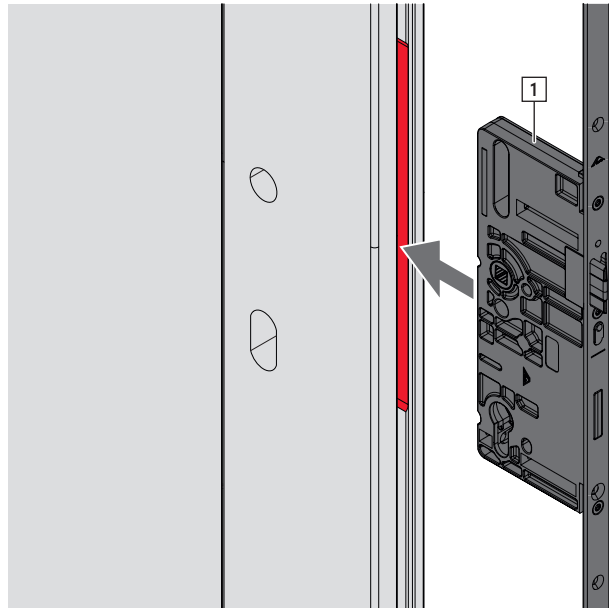
#### ATTENTION

**Incorrect drilling methods may result in property damage.**

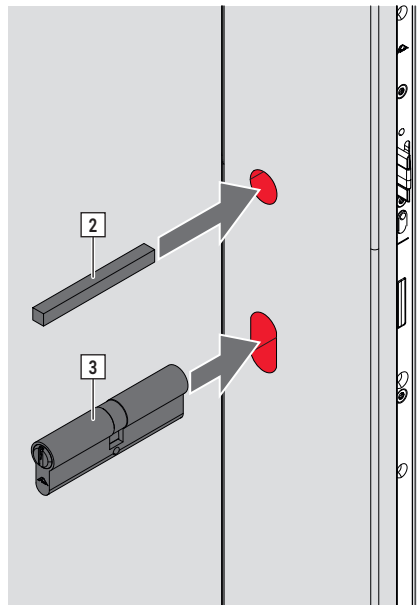
If holes are drilled in the lock area with the multipoint locking inserted, the lock may be damaged.

- Remove the multipoint locking before drilling.

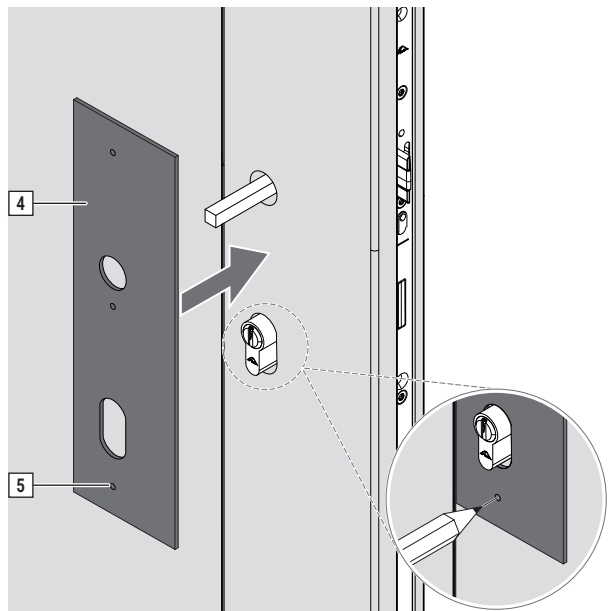
1. Insert the multipoint locking [1] into the leaf.



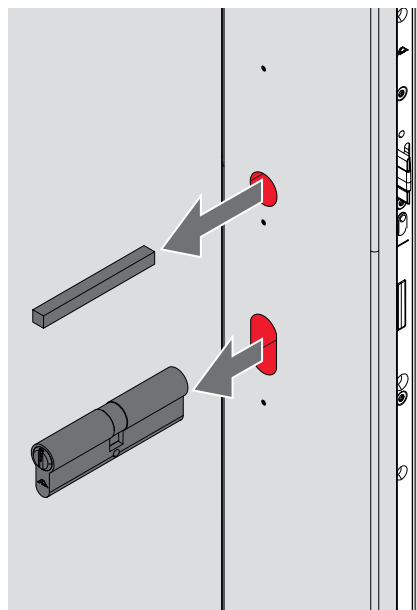
2. Insert the square spindle [2] and profile cylinder [3] in predrilled holes in the leaf.



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

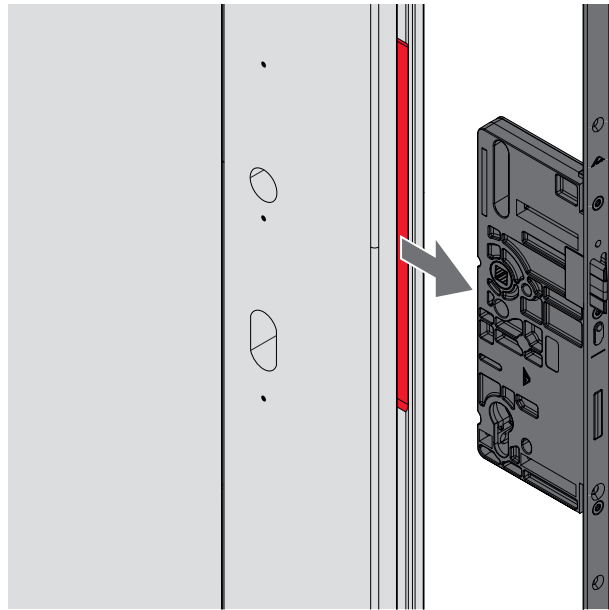


4. Remove the square spindle and profile cylinder.

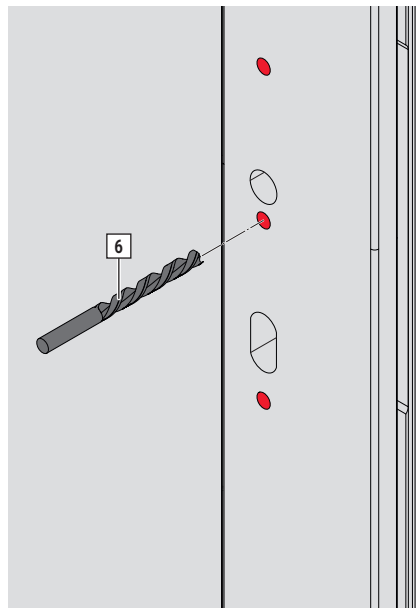




5. Remove the multipoint locking.



6. Drill the holes [6].



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



#### **INFO**

A round escutcheon can be used from a backset of 35 mm.

### 5.5.3.2 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.

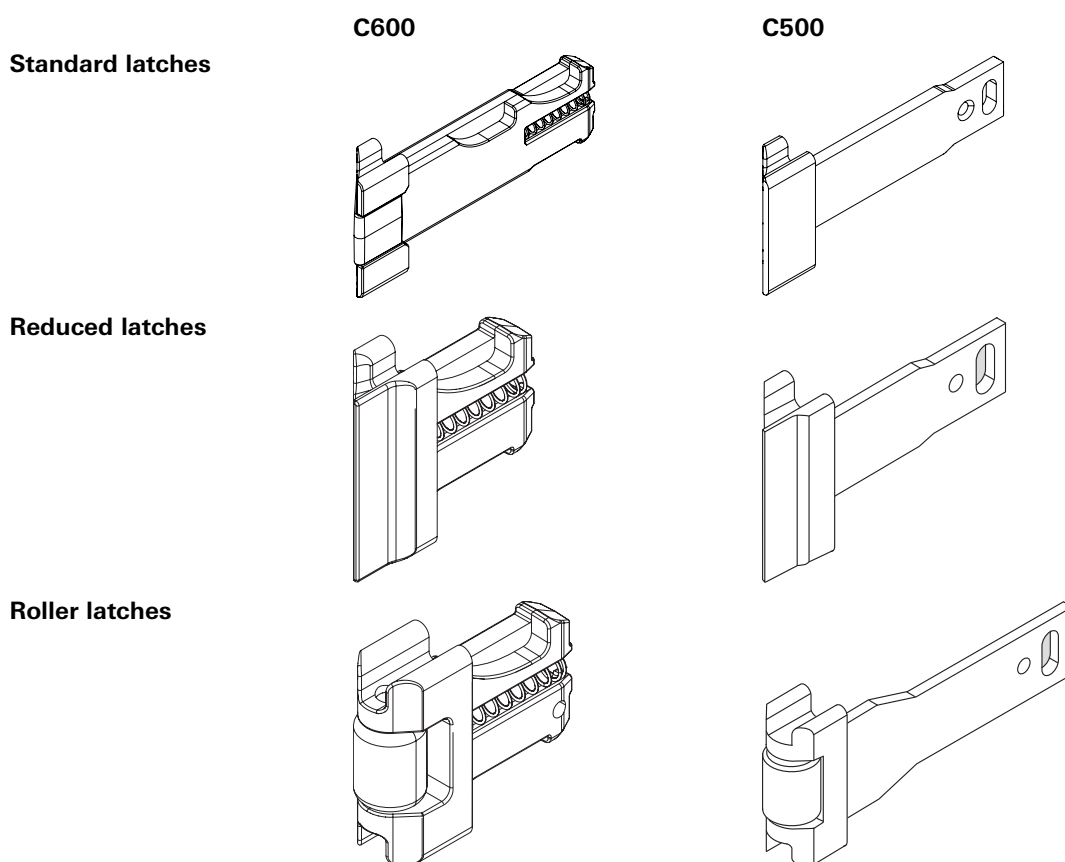
- ▶ Only turn the latch around in the vertical lock position.
- ▶ Only turn the latch around on the C600 in the vertical lock position.
- ▶ Do not use the door lever handle or key when turning the latch around.

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



#### INFO

The latch can be replaced by a reduced latch or roller latch if required.





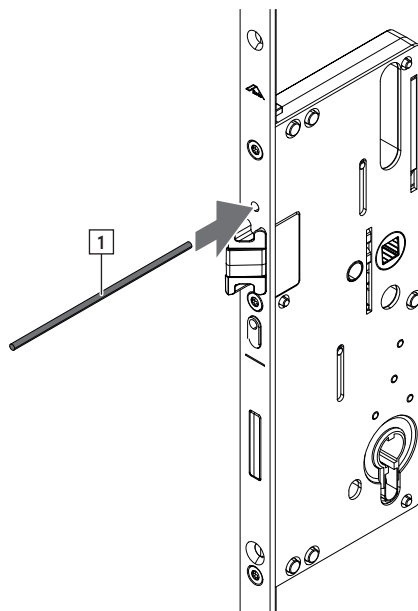
## C600



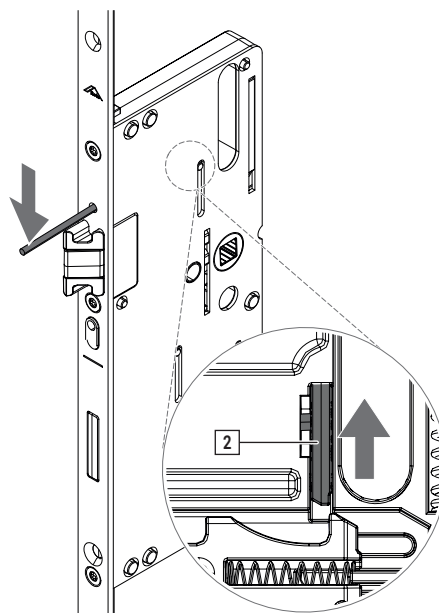
### PRECONDITION

The lock is unlocked (possible when installed or removed).

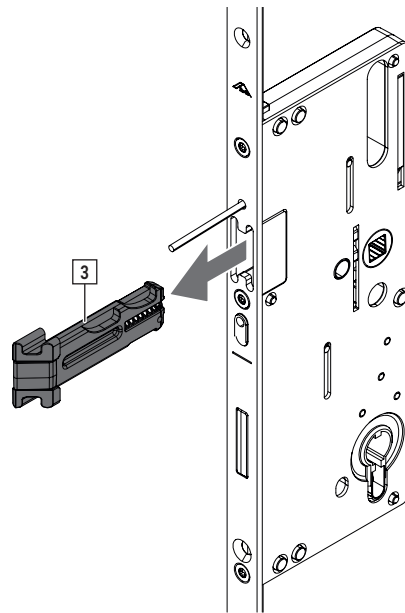
1. Push the pin [1] (Ø max. 3 mm) into the inspection opening.



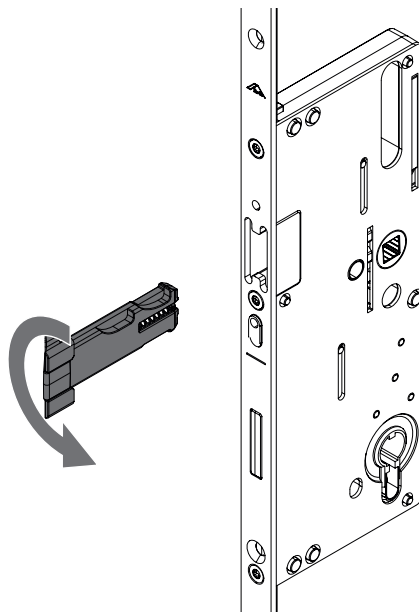
2. Push the pin down slightly so that the latch blocking device [2] disengages.



3. Remove the latch [3].

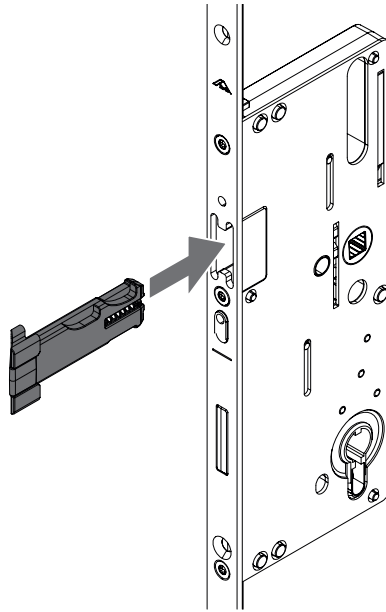


4. Turn the latch 180°.





5. Insert the latch straight into the shaft and push it in until it clicks into place.



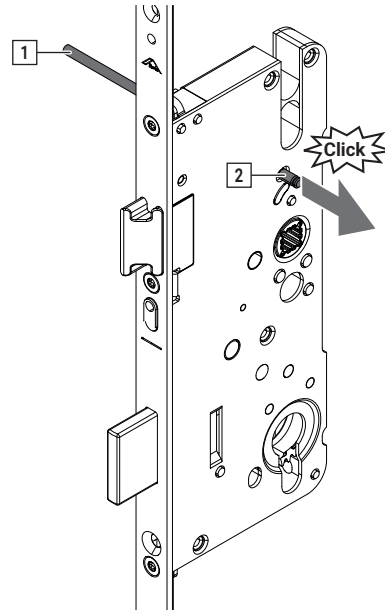
## C500



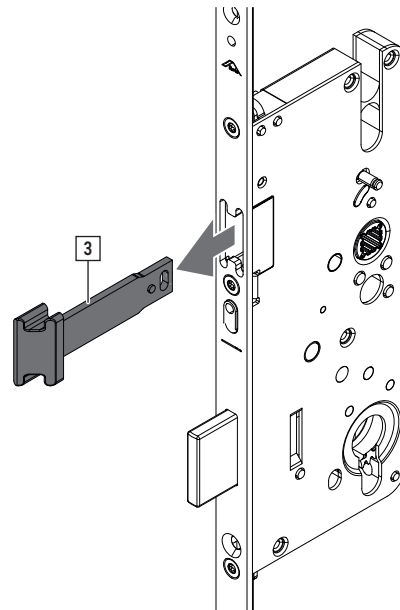
### PRECONDITION

The lock is unlocked (possible when installed or removed).

1. Push out the locking pin [2] with pin [1]  
(Ø max. 2.5 mm).  
A clicking sound can be heard.

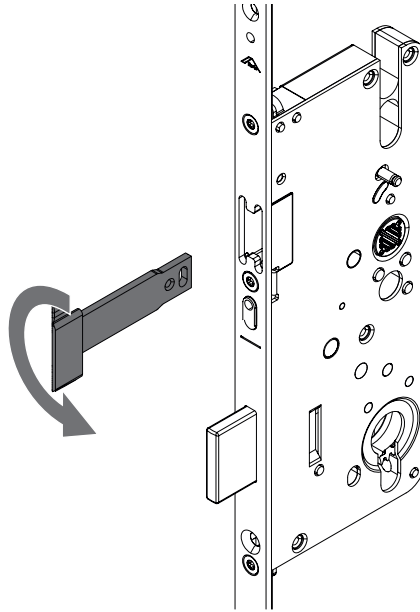


2. Remove the latch [3].

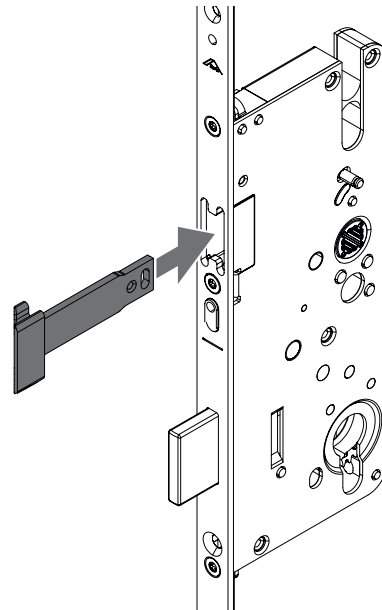




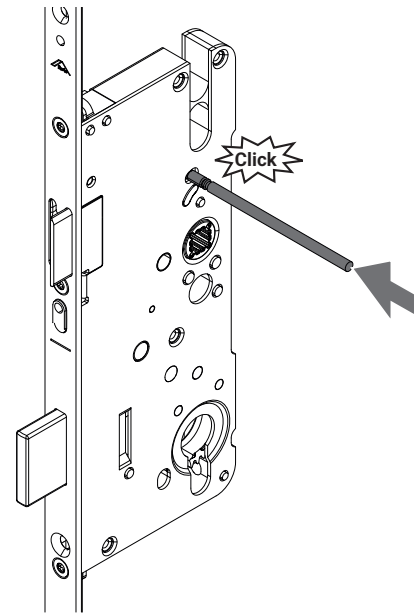
3. Turn the latch 180°.



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



5. Push in the locking pin with pin.
  - ▷ A clicking sound can be heard.
  - ▷ Locking pin inserted into lock.



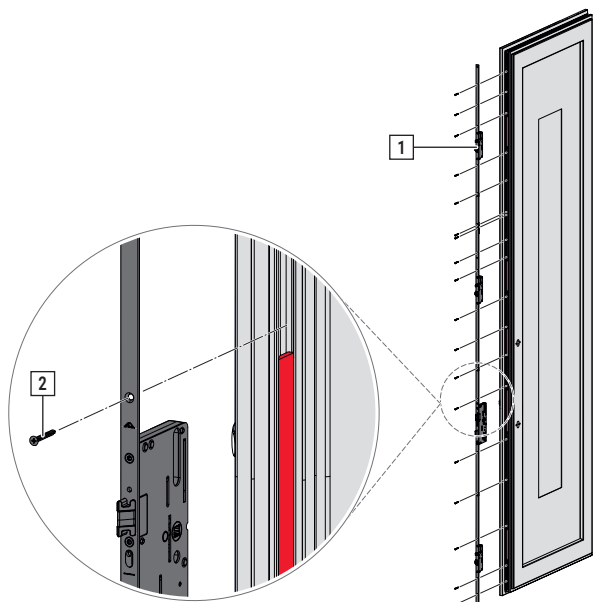
### 5.5.3.3 Multipoint locking

1. Insert the multipoint locking [1] into the leaf groove.
2. Fasten the multipoint locking with screws [2].



#### INFO

Fill every screw position. Turn in screws straight. → *from page 24*





#### 5.5.3.4 Couplable multipoint locking



##### ATTENTION

**Property damage is possible if no connector component is fitted.**

If couplable multipoint lockings are fitted without a connector component, the connecting rod is not guided cleanly and can block.

- Only fit couplable multipoint lockings together with a connector component.

1. Connect the connector component to the coupling point on the multipoint locking. → *from page 27*  
Alternatively: crop the connector component to 170 mm and connect it to the coupling point on the extendable multipoint locking.
2. Insert the multipoint locking with connector component into the leaf groove.
3. Fasten the multipoint locking and connector component with screws. → *from page 72*



##### INFO

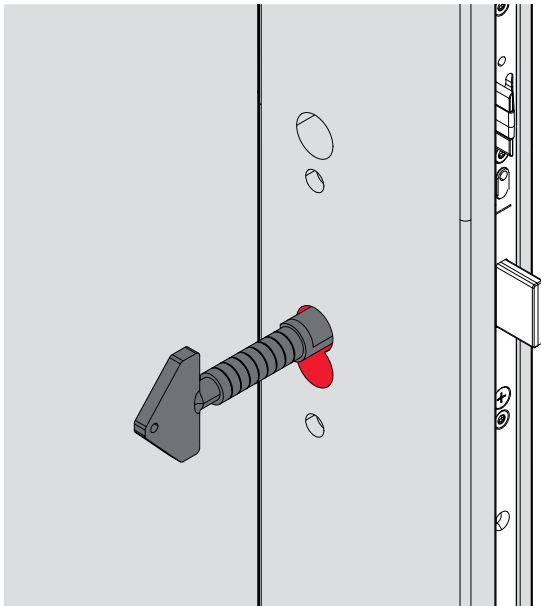
Fill every screw position. Turn in screws straight. → *from page 24*

### 5.5.3.5 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 and / or round cylinder without subjecting it to stress and align at a right angle to the leaf.

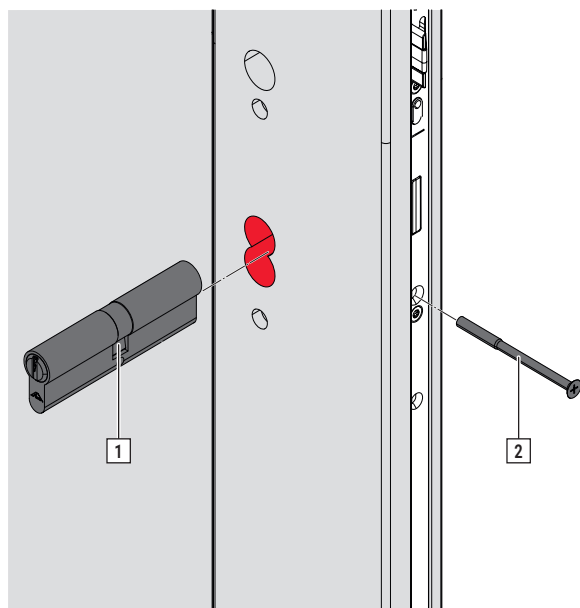


#### INFO

When changing the profile cylinder and / or round cylinder, choose a faceplate screw length based on the backset.

#### Profile cylinder

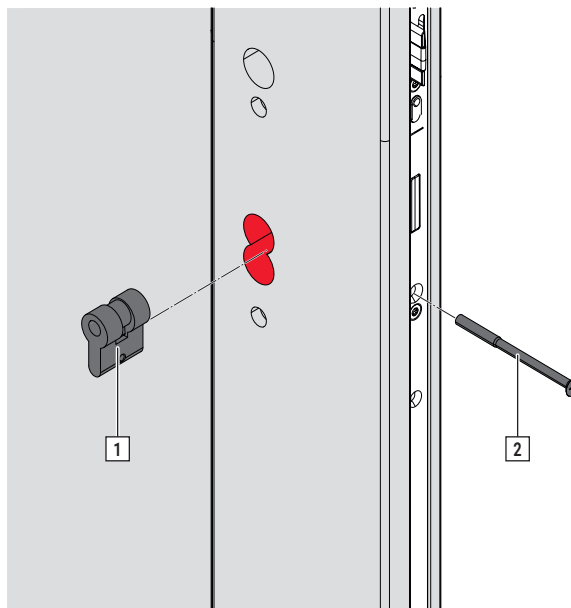
1. Insert the profile cylinder [1] and fasten with a screw [2].





### Round cylinder

1. Set the lug of the round cylinder [1] so that it is vertical, insert the round cylinder, push it downwards by 2 mm and fasten with a screw [2].



### Door lever handle set with long plate and escutcheon

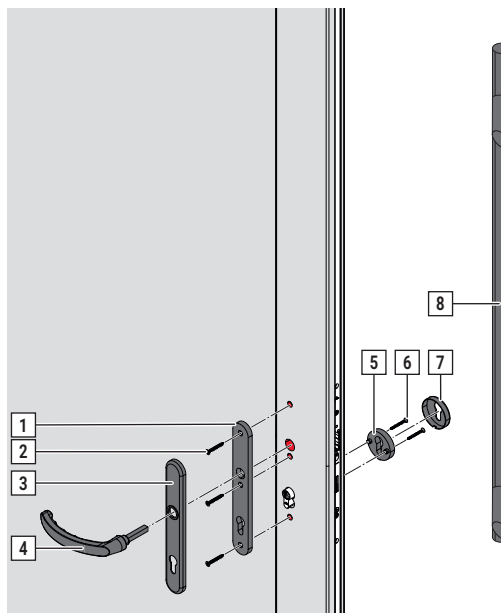


#### INFO

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



### 5.5.3.6 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 locks must be in the locking position.
- ▶ It must be possible to remove the key.



## 5.5.4 Frame

### 5.5.4.1 Striker strip / striker

1. Insert the striker strip [1] or striker [2] into the frame.
2. Fasten the striker strip or striker with the recommended screws [3] (Ø4) → *from page 26*.



#### INFO

Fill every screw position. Turn in screws straight → *from page 24*.

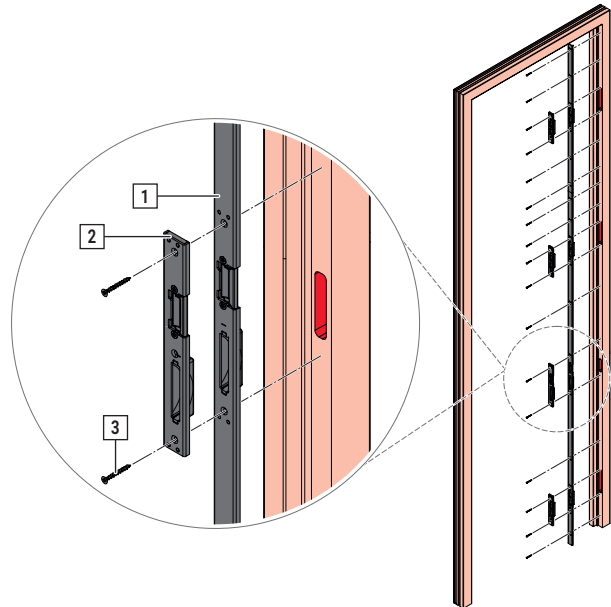
The screw length depends on the profile used.



#### INFO

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

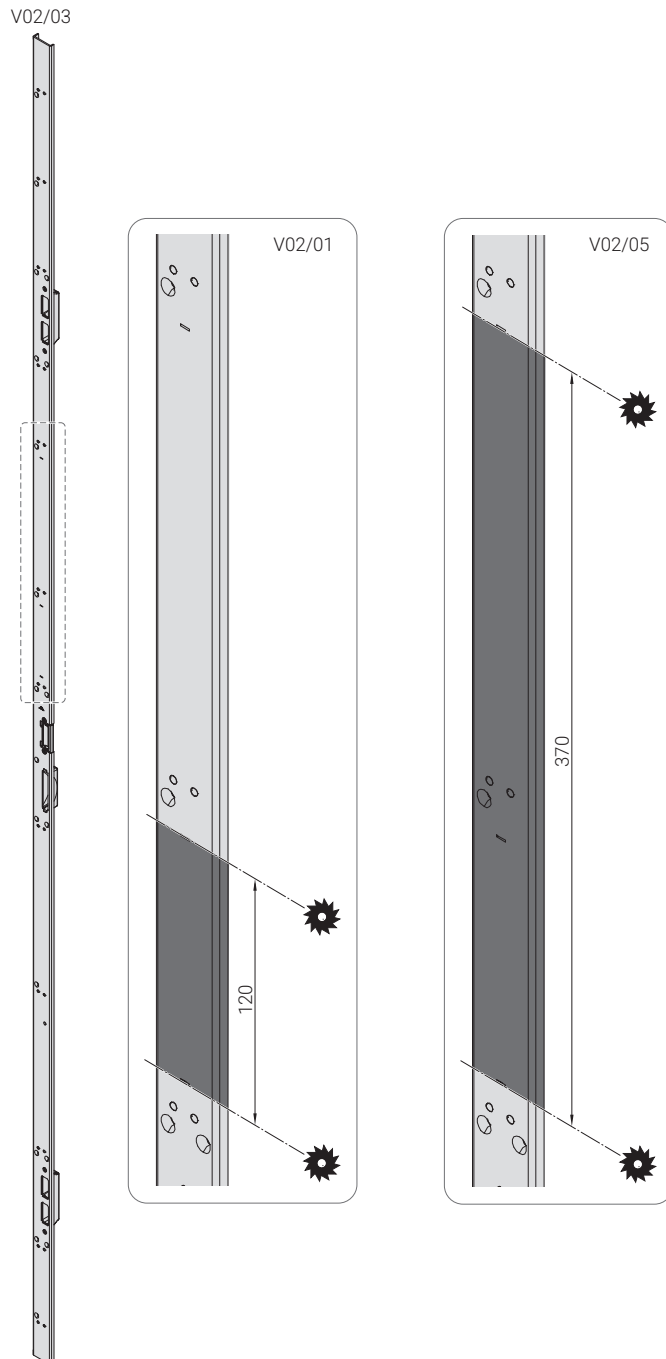
Use stainless-steel screws (type A2) on stainless-steel components.



#### 5.5.4.2 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.

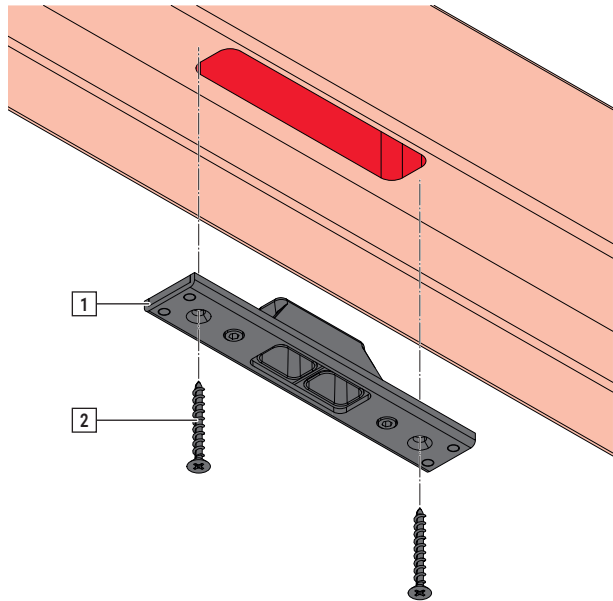
The diagram below shows the individual markings where the striker strip can be adapted.





#### 5.5.4.3 Shootbolt protrusion striker

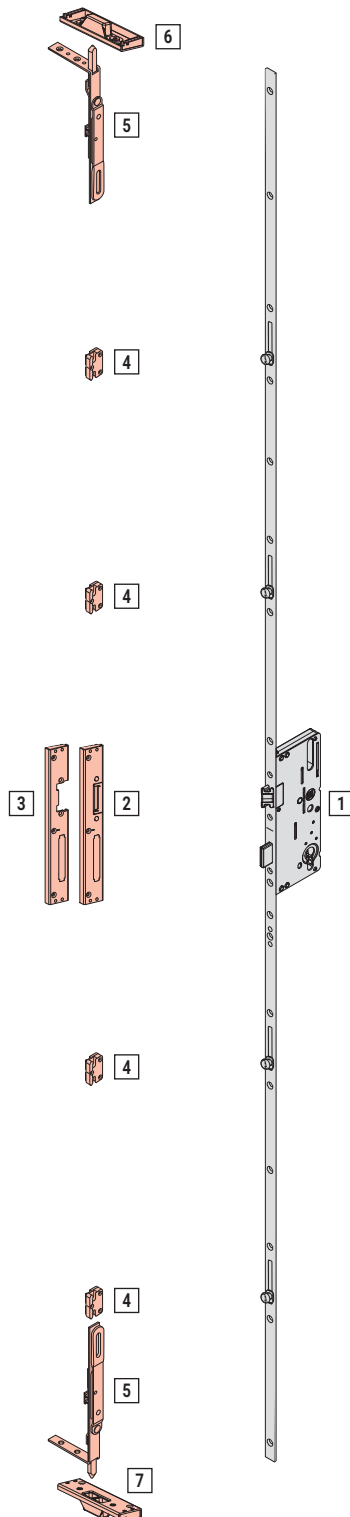
1. Fasten the shootbolt protrusion striker [1] with two screws [2].



## 5.6 Double-leaf doors

### 5.6.1 Shootbolt

#### 5.6.1.1 4 E cams (4E) and 4 V cams (4V)

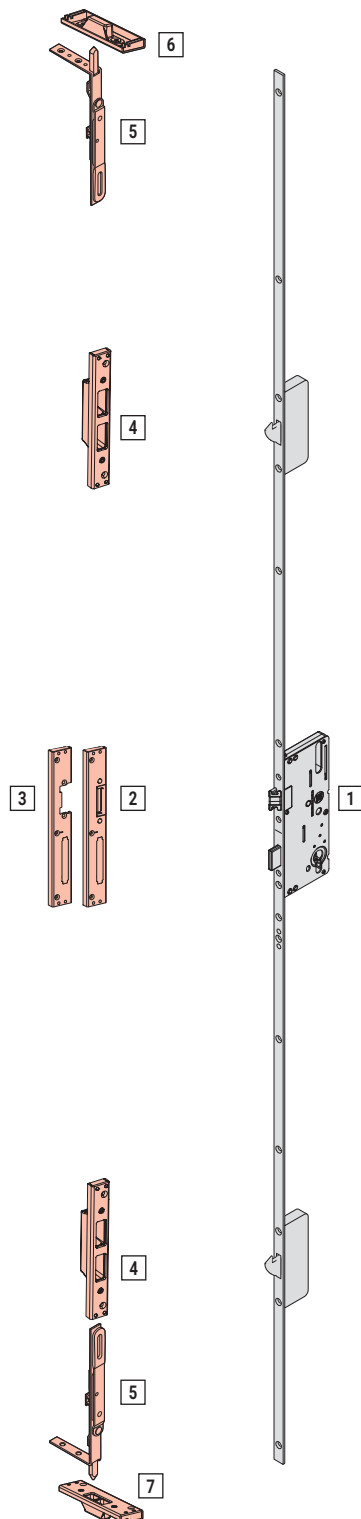


| Assignment | Meaning                              |
|------------|--------------------------------------|
| [1]        | Multipoint lock C500 / C600          |
| [2]        | Latch / deadbolt striker             |
| [3]        | Electrical opener / deadbolt striker |



| Assignment | Meaning                      |
|------------|------------------------------|
| [4]        | V cam striker                |
| [5]        | Shootbolt 150                |
| [6]        | Shootbolt protrusion striker |
| [7]        | Threshold frame component    |

### 5.6.1.2 Bolts (2CB), power wedges (2CH) and combination locks (2C)

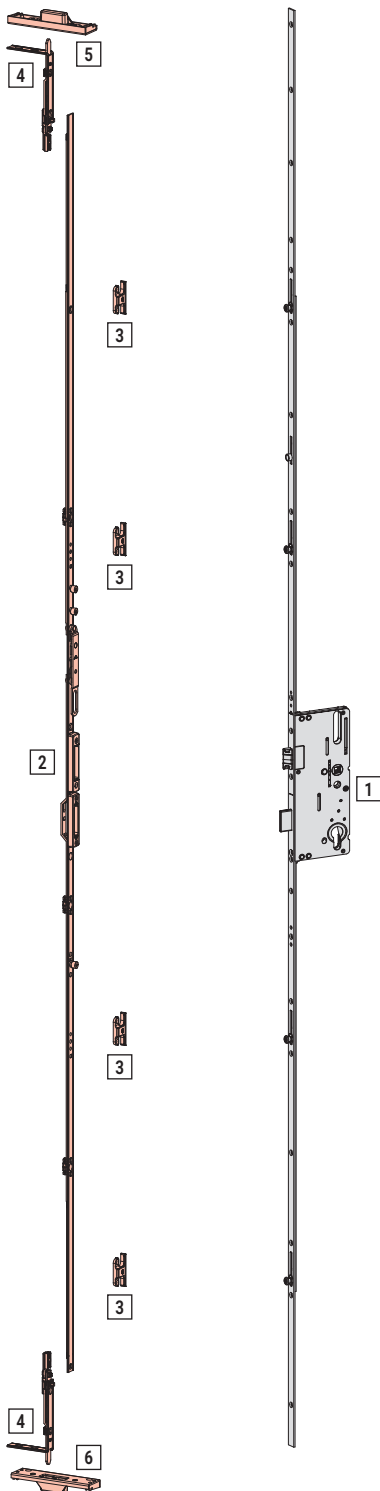


| Assignment | Meaning                              |
|------------|--------------------------------------|
| [1]        | Multipoint lock C600                 |
| [2]        | Latch / deadbolt striker             |
| [3]        | Electrical opener / deadbolt striker |
| [4]        | Combination striker                  |
| [5]        | Shootbolt 150                        |
| [6]        | Shootbolt protrusion striker         |
| [7]        | Threshold frame component            |



## 5.6.2 Lever-operated espagnolette E cams (4E) and V cams (4V)

### 5.6.2.1 E cams (4E) and V cams (4V)



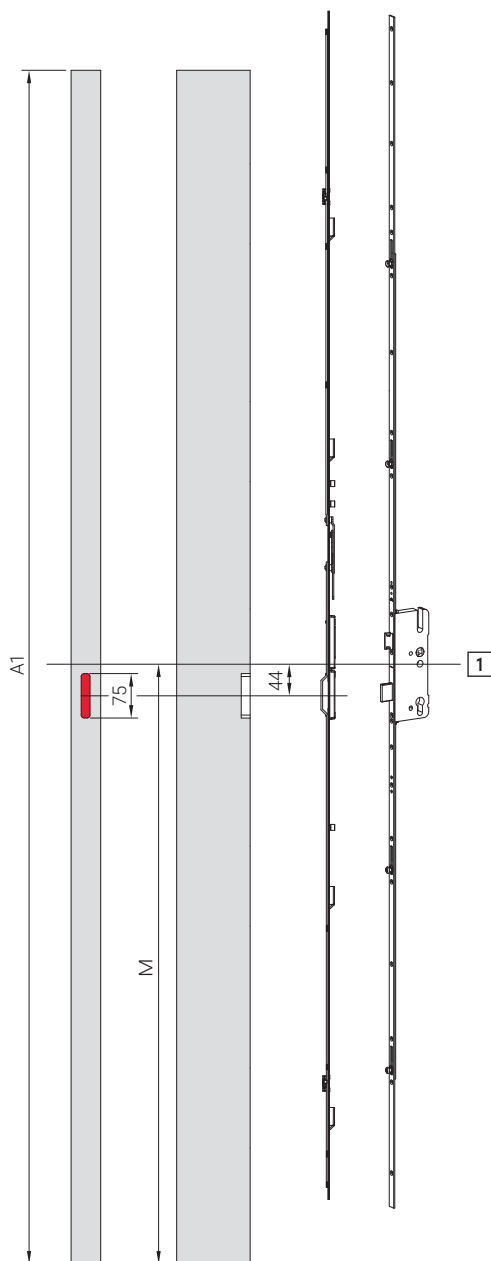
| Assignment | Meaning                                          |
|------------|--------------------------------------------------|
| [1]        | Multipoint lock C600                             |
| [2]        | Lever-operated espagnolette                      |
| [3]        | Screw-on striker for lever-operated espagnolette |
| [4]        | Shootbolt protrusion 110 for NT16 faceplate      |
| [5]        | Shootbolt protrusion striker                     |
| [6]        | Threshold frame component                        |

## Installation

### Double-leaf doors

Lever-operated espagnolette E cams (4E) and V cams (4V)

#### 5.6.2.2 Drilling and routing dimensions



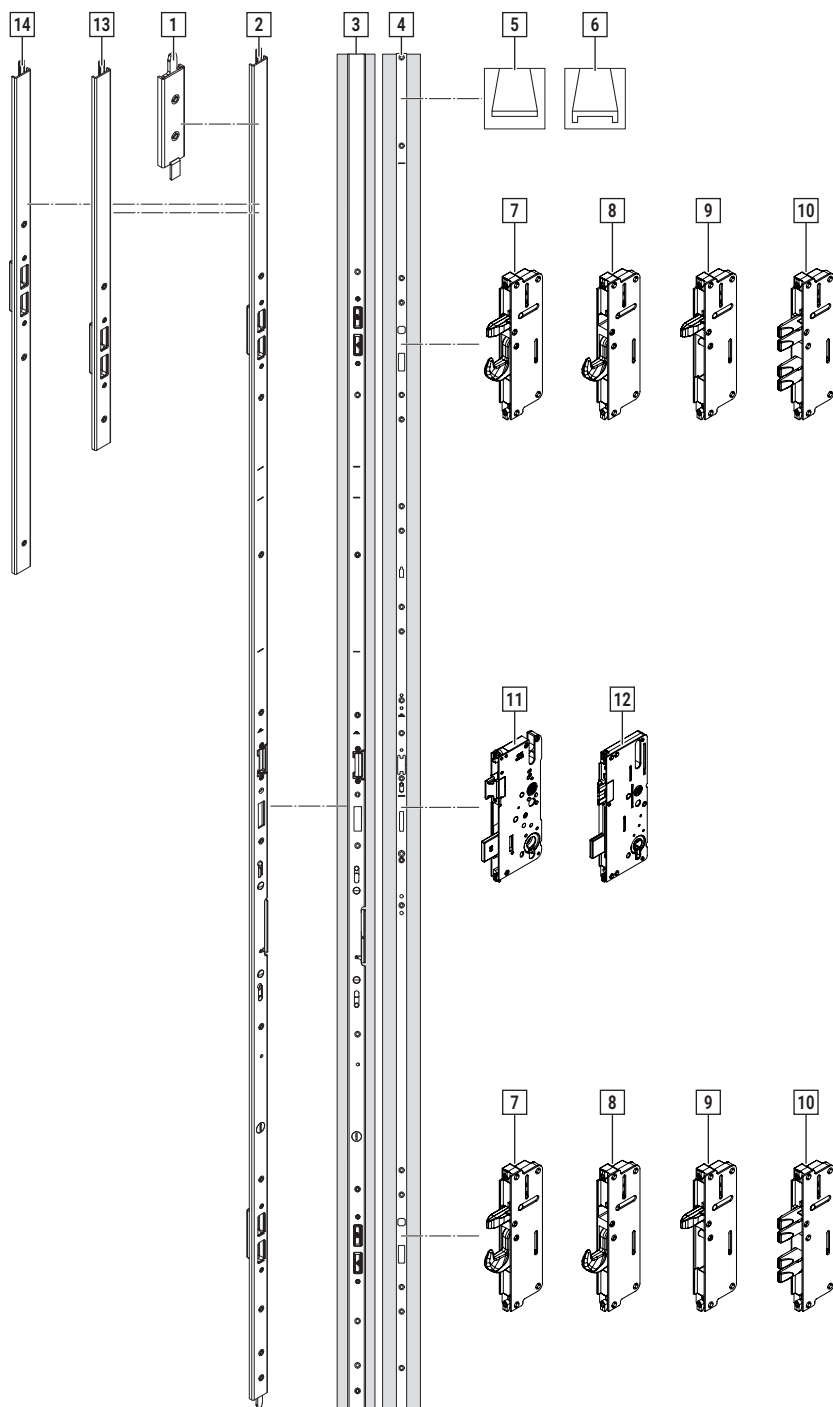
[1] Faceplate marking

| A1          | M   |
|-------------|-----|
| 2000 – 2200 | 998 |



## 5.6.3 Lever-operated espagnolette Standard

### 5.6.3.1 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]        | Combination lock (C)                                         |
| [8]        | Power wedge (CH)                                             |
| [9]        | Bolt (CB)                                                    |
| [10]       | Quadbolt (QB)                                                |

## Installation

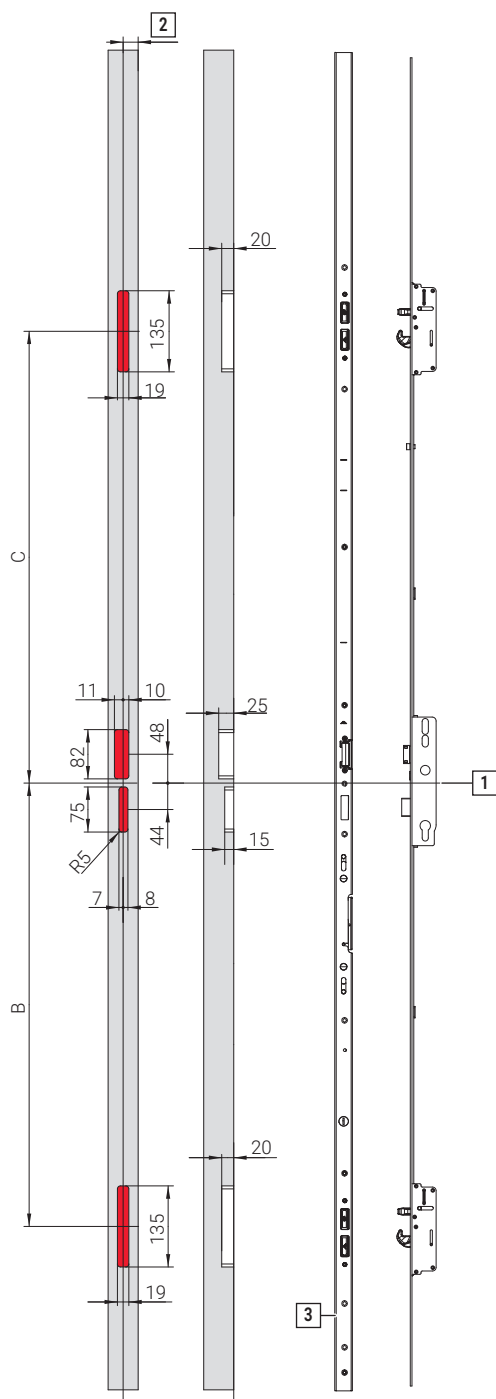
### Double-leaf doors

Lever-operated espagnolette Standard

| Assignment | Meaning        |
|------------|----------------|
| [11]       | Main lock C500 |
| [12]       | Main lock C600 |
| [13]       | Extension 600  |
| [14]       | Extension 800  |



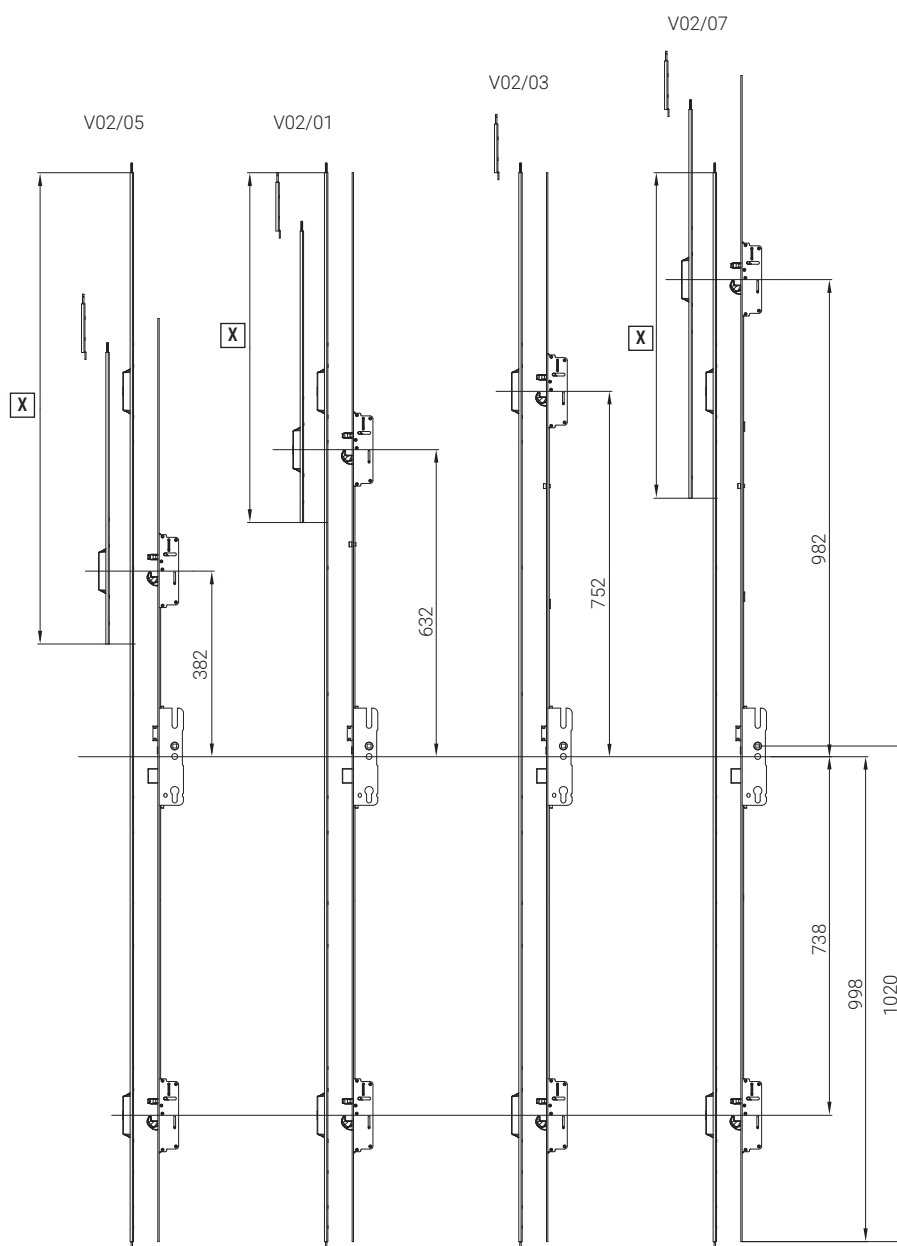
### 5.6.3.2 Drilling and routing dimensions (CB, CH, C)



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

| Pattern | B   | C   |
|---------|-----|-----|
| V02/01  | 738 | 632 |
| V02/03  | 738 | 752 |
| V02/05  | 738 | 382 |
| V02/07  | 738 | 982 |

### 5.6.3.3 Locking pattern



[X] Cropping range

■ Combination

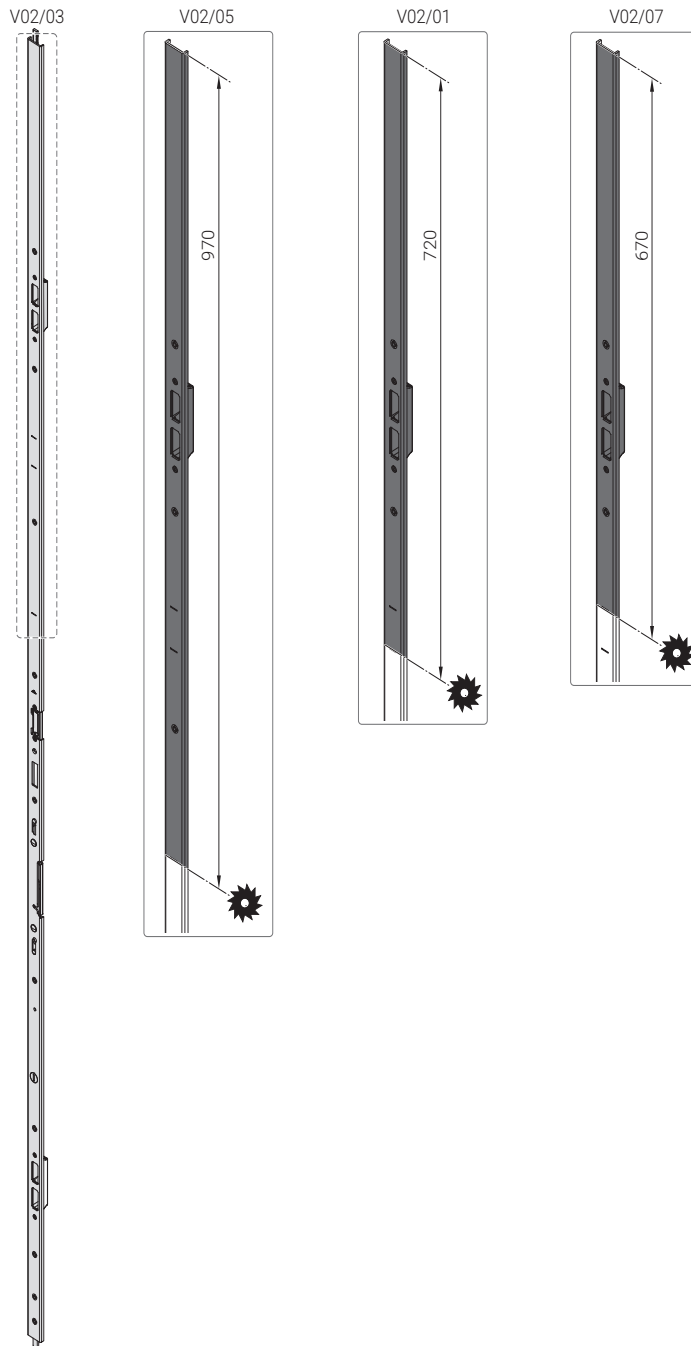
| Pattern | Min. SRH | Max. SRH | [X] | Lever-operated espagnolette | Extension 600 | Extension 800 | Connector component |
|---------|----------|----------|-----|-----------------------------|---------------|---------------|---------------------|
| V02/01  | 1931     | 1974     | 720 | ■                           | ■             | —             | ■                   |
| V02/03  | 1975     | 2214     | —   | ■                           | —             | —             | ■                   |
| V02/05  | 1615     | 1930     | 970 | ■                           | ■             | —             | ■                   |
| V02/07  | 2215     | 2430     | 670 | ■                           | —             | ■             | ■                   |



#### 5.6.3.4 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.

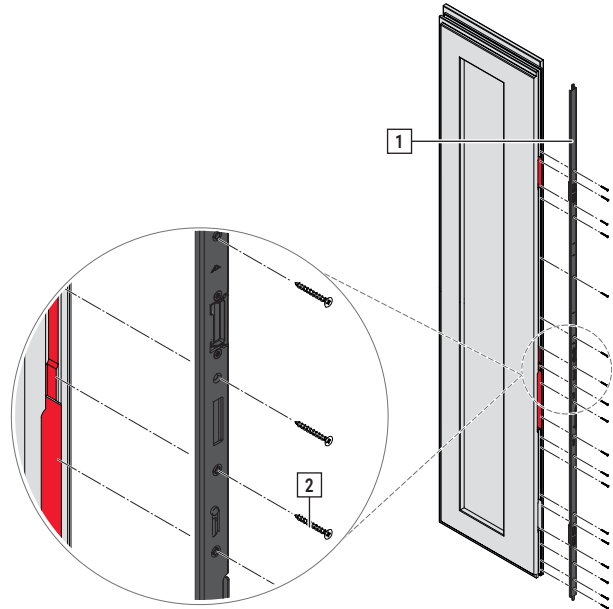


### 5.6.3.5 Installation

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 24*.



3. Create a force-fit connection for coupling points → *from page 29*.

**INFO**

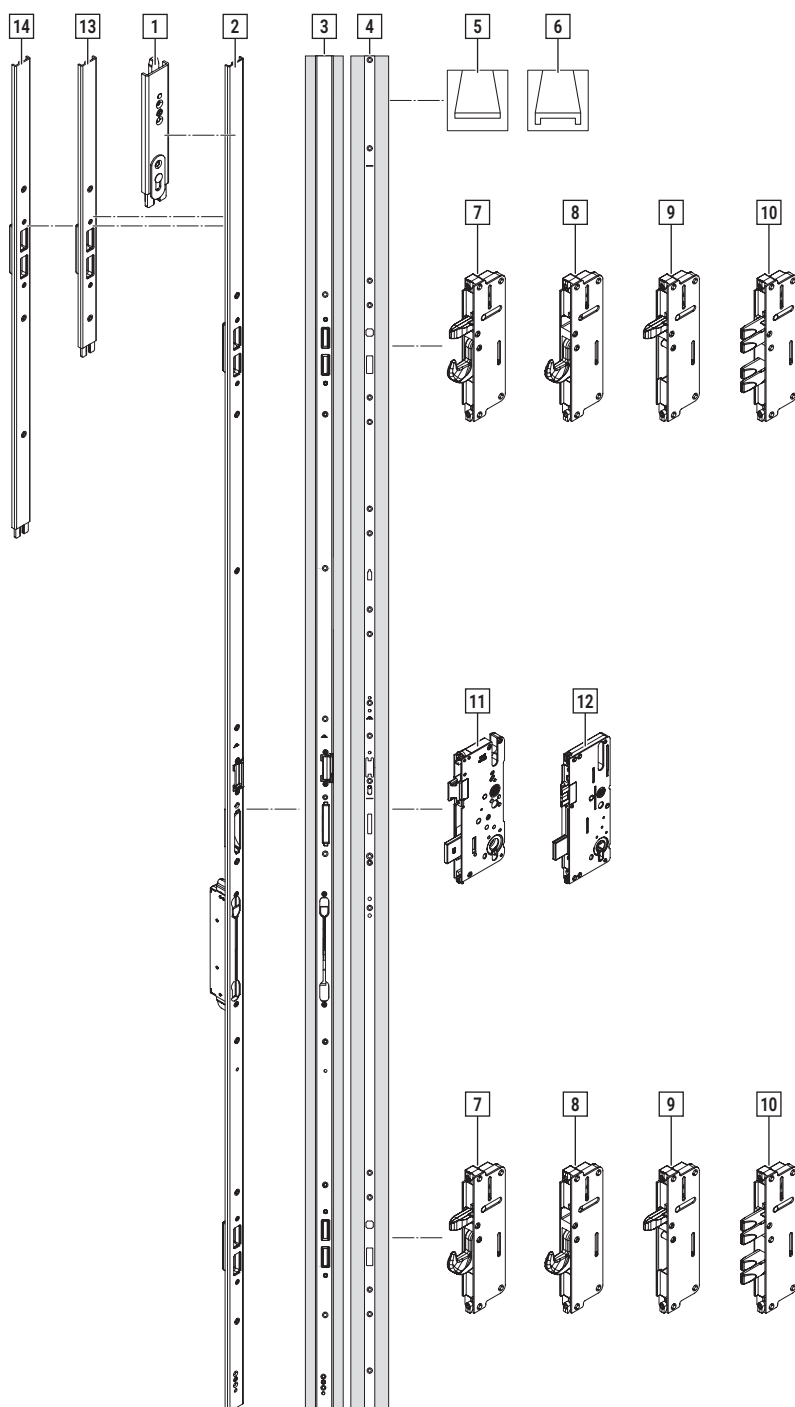
On PVC profiles with opposite hardware groove, cover the groove in the area of the coupling point in order to stabilise the connection.

For this purpose, use the Roto NX connecting link (material number 350401), for example.



## 5.6.4 Lever-operated espagnolette Plus

### 5.6.4.1 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]        | Combination lock (C)                                     |
| [8]        | Power wedge (CH)                                         |
| [9]        | Bolt (CB)                                                |

## Installation

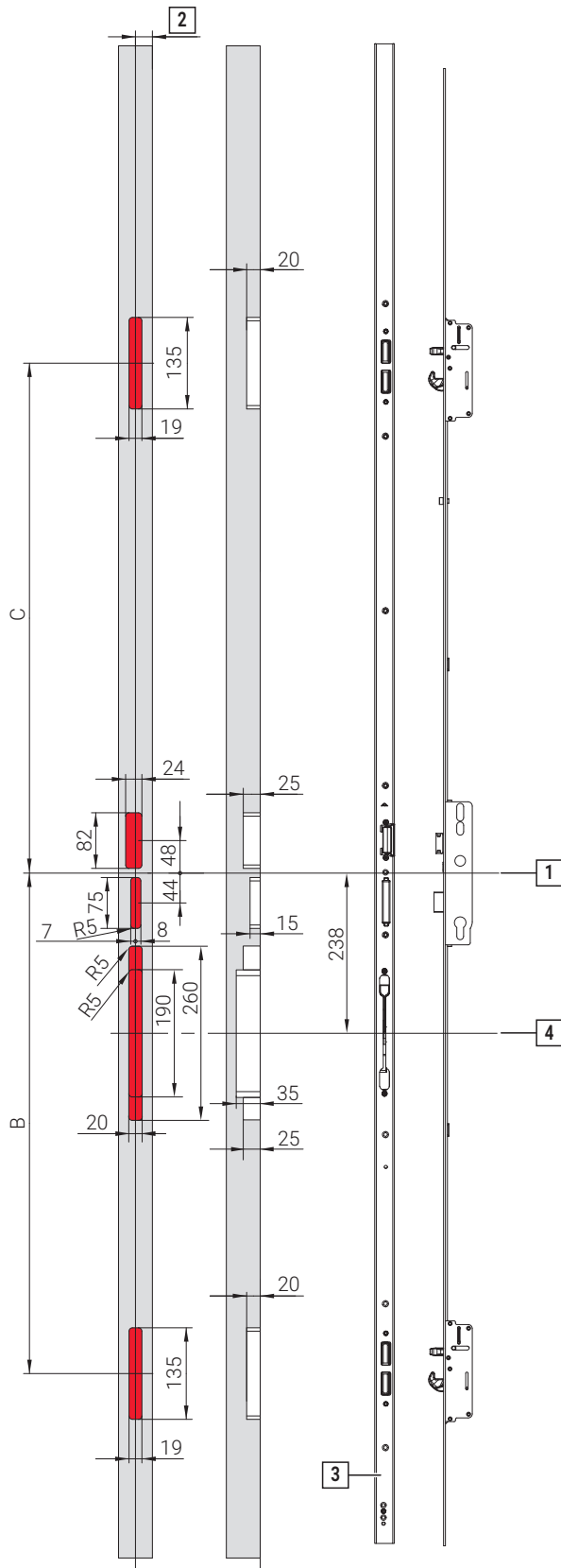
### Double-leaf doors

#### Lever-operated espagnolette Plus

| Assignment | Meaning        |
|------------|----------------|
| [10]       | Quadbolt (QB)  |
| [11]       | Main lock C500 |
| [12]       | Main lock C600 |
| [13]       | Extension 468  |
| [14]       | Extension 768  |



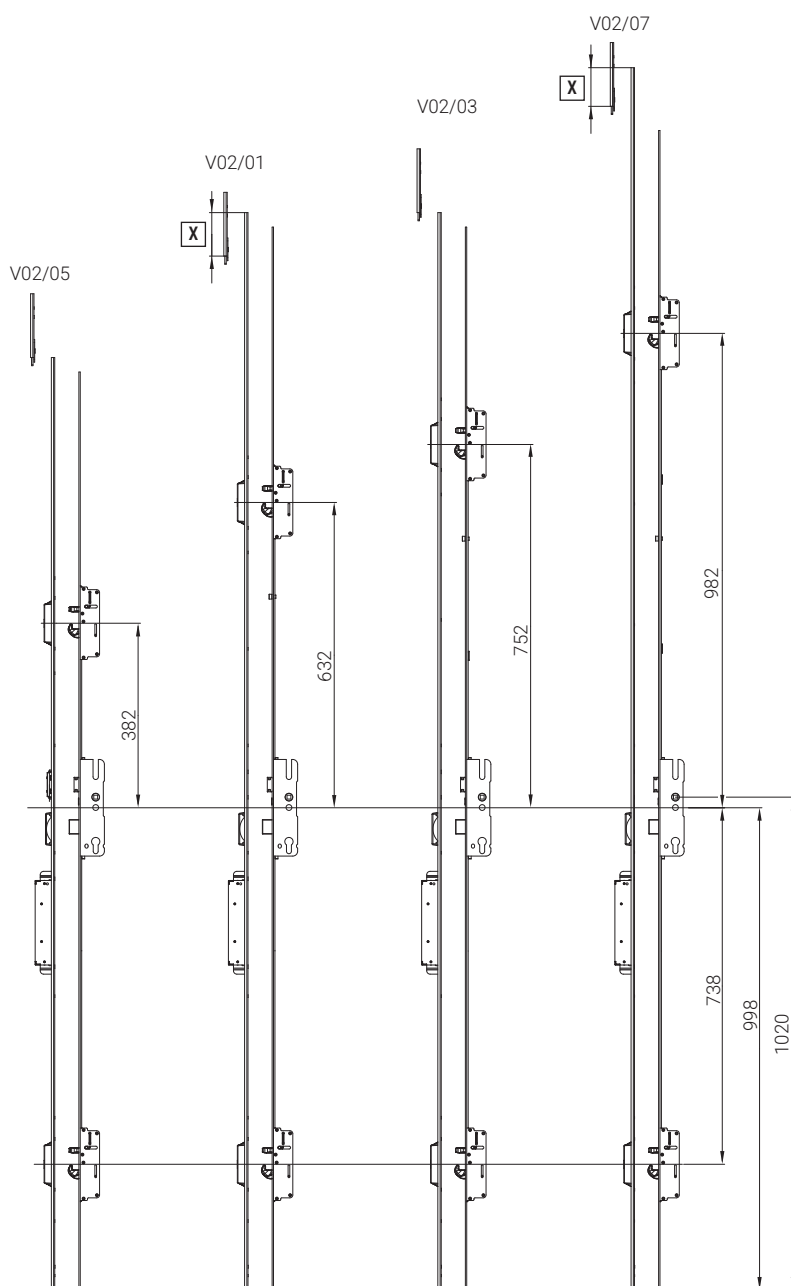
#### 5.6.4.2 Drilling and routing dimensions (CB, CH, C)



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

| Pattern | B   | C   |
|---------|-----|-----|
| V02/01  | 738 | 632 |
| V02/03  | 738 | 752 |
| V02/05  | 738 | 382 |
| V02/07  | 738 | 982 |

### 5.6.4.3 Locking pattern



[X] Cropping range

| Pattern | Min. SRH | Max. SRH | [X] |
|---------|----------|----------|-----|
| V02/01  | 1901     | 2070     | 90  |
| V02/03  | 2071     | 2270     | –   |
| V02/05  | 1760     | 1900     | –   |
| V02/07  | 2271     | 2590     | 80  |



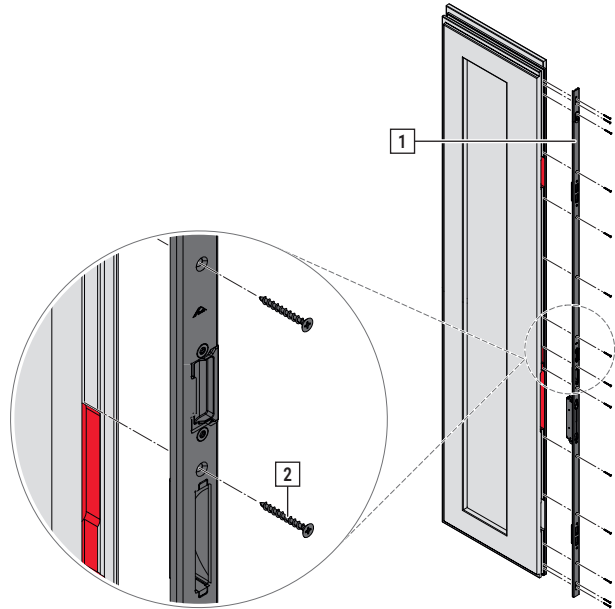
#### 5.6.4.4 Installation

1. Insert the lever-operated espagnolette Plus [1] into the leaf groove.
2. Fasten the lever-operated espagnolette Plus with screws [2].



#### INFO

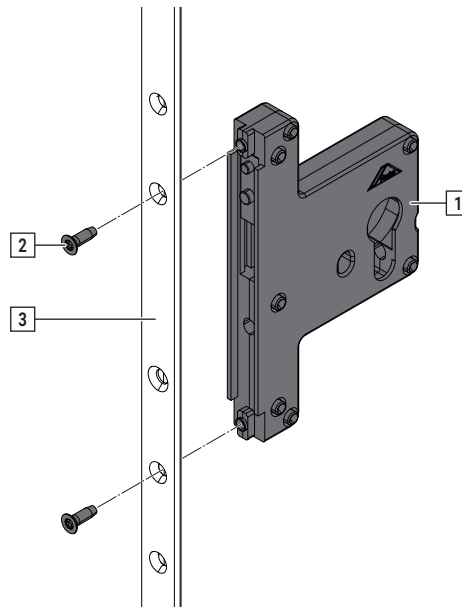
Fill every screw position. Turn in screws straight. → *from page 24*



### 5.7 Accessories

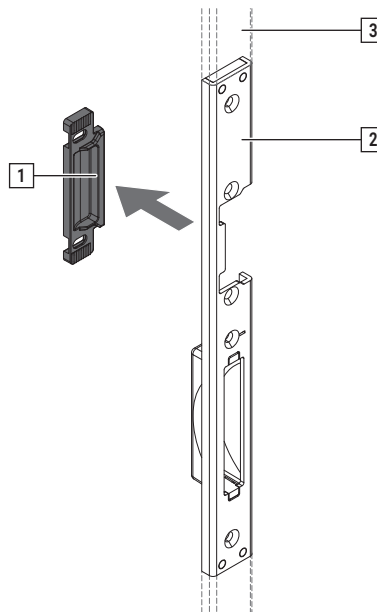
#### 5.7.1 Additional locking device

1. Fasten the additional locking device [1] to the faceplate [3] with M4 x 12 thread-rolling screws with countersunk head [2].

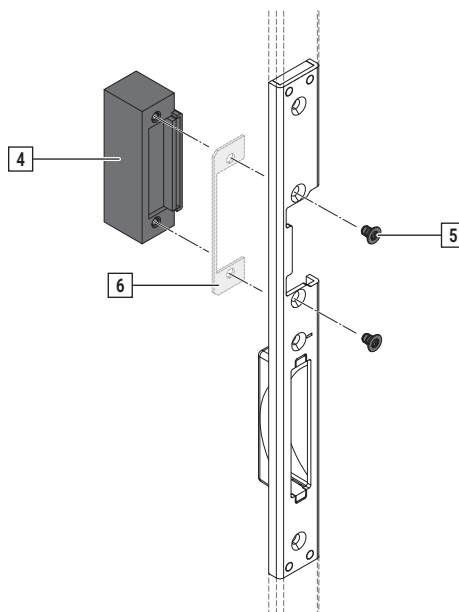


### 5.7.2 Electrical opener

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].



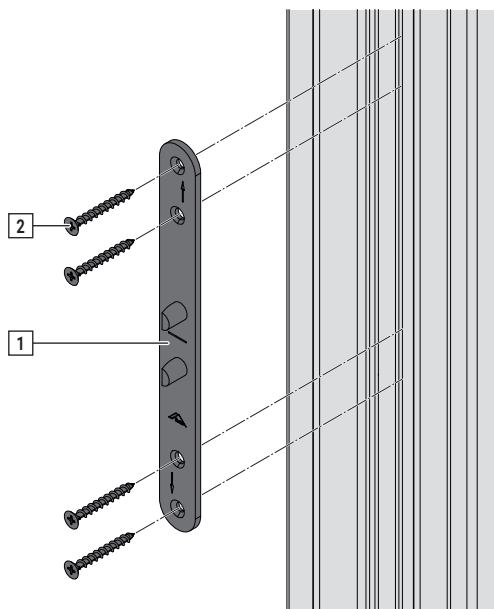


## 5.7.3 Hinge retaining mechanisms

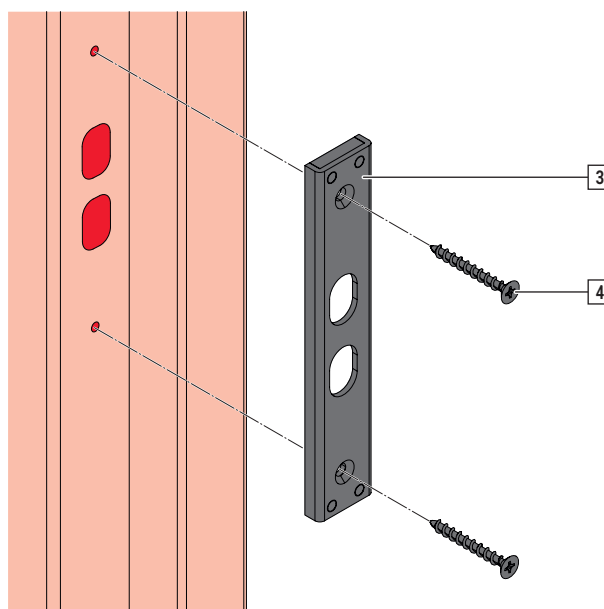
### 5.7.3.1 Hinge retaining mechanism cam: leaf and frame



1. Fasten the hinge retaining mechanism cam [1] with four screws [2] on the leaf side.



2. Fasten the hinge retaining mechanism striker [3] on the frame side with two screws [4].



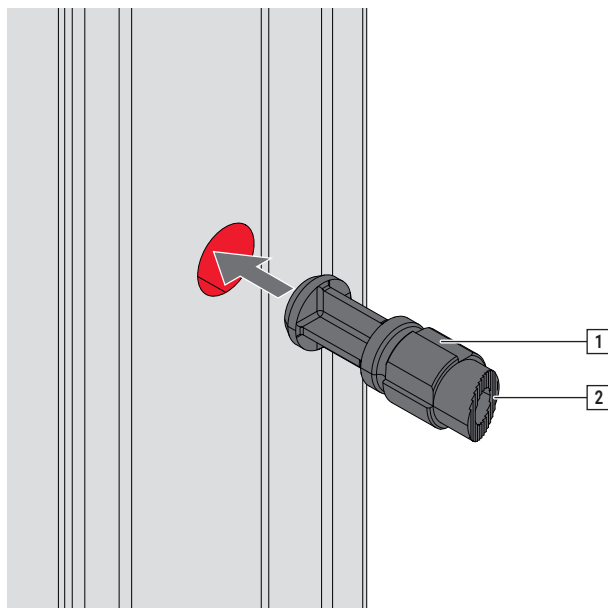
### 5.7.3.2 Hinge retaining mechanism set: leaf and frame



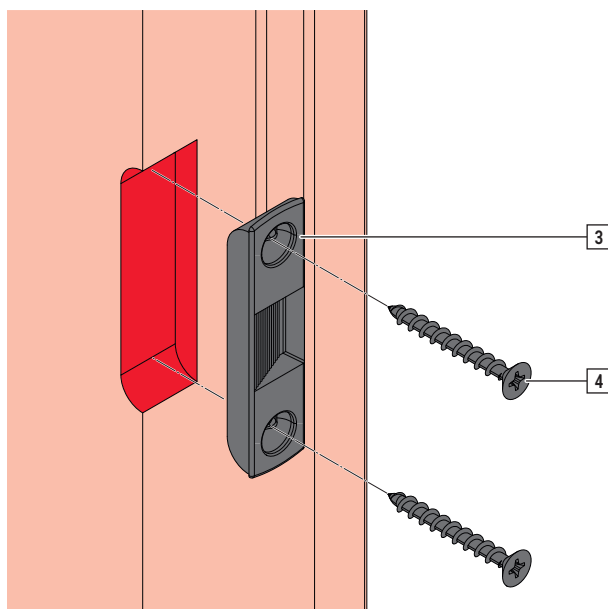
#### PRECONDITION

Align the hinge retaining mechanism set on the leaf with the frame as appropriate.

1. Turn in the sash component of the hinge retaining mechanism set [2] with thread [1].



2. Fasten the frame component of the hinge retaining mechanism set [3] with two screws [4].





## 5.7.4 Replacement main lock

### 5.7.4.1 C600

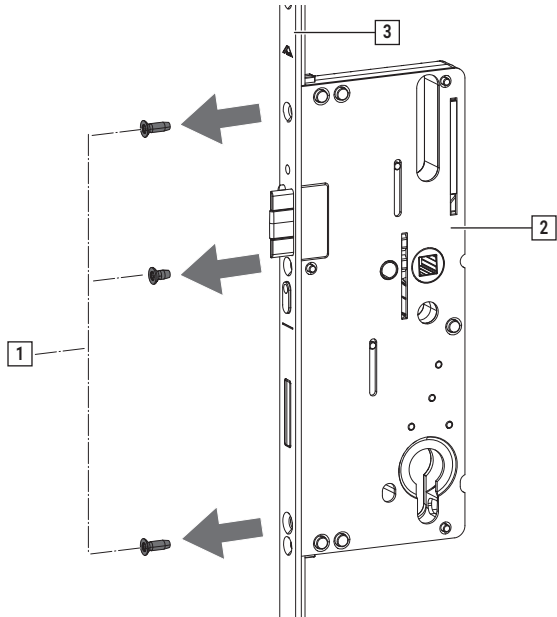


#### INFO

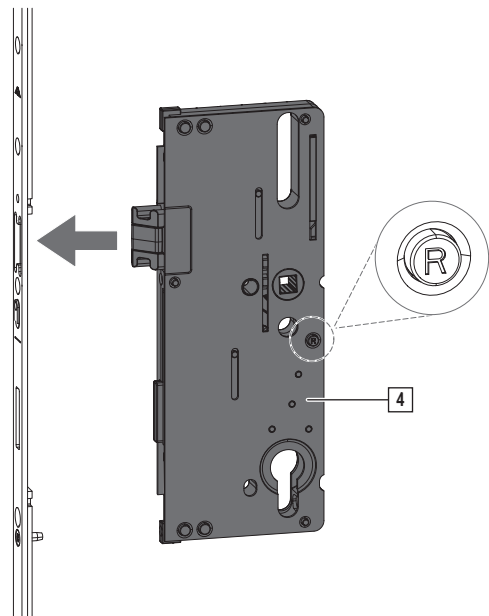
The system certificate and warranty become void when the main lock is replaced by the replacement main lock.

#### Replacement when removed

1. Undo three screws [1].



2. Remove the main lock [2] from the faceplate [3].
3. Insert the replacement main lock [4] marked with "R" into the faceplate.

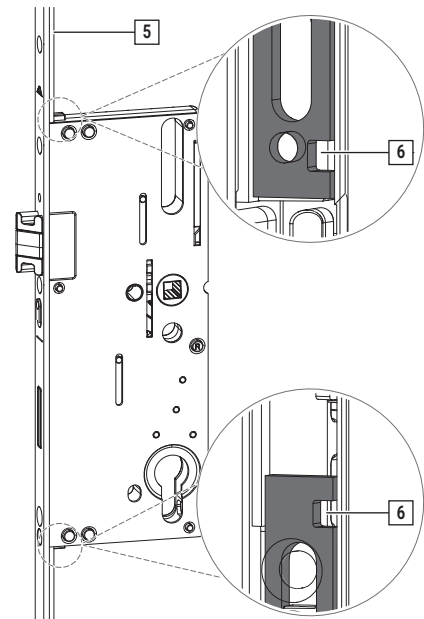


4. Mount the connecting rod [5] in the connector [6] of the replacement main lock.

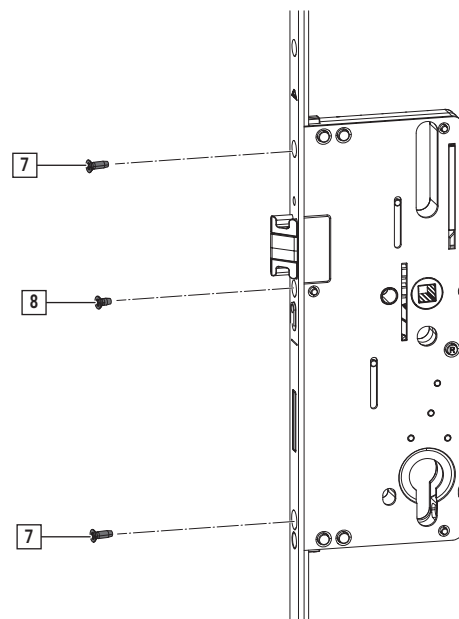


### INFO

Position the replacement main lock so that it is flush with the connecting rod and faceplate.



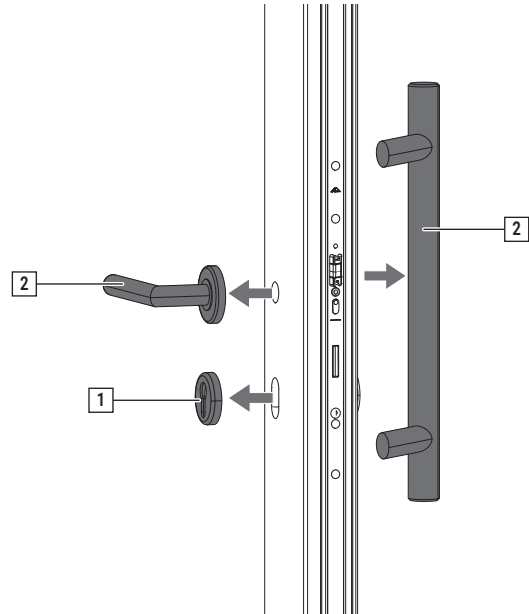
5. Fit it with three screws.  
[7] M4 x 12  
[8] M4 x 8  
Torque: max. 4 Nm



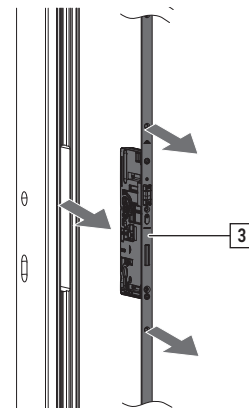


### Replacement when installed

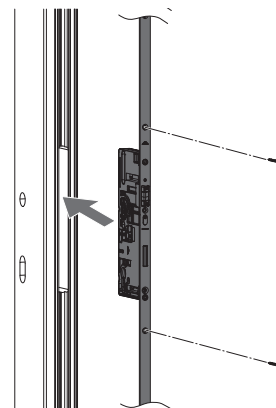
1. Remove the cylinder [1] and handles [2].



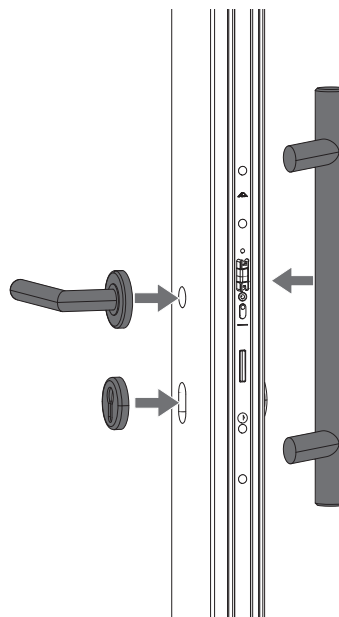
2. Undo all screws on the multipoint lock [3] and remove the entire faceplate from the door profile.



3. Perform steps 1 to 5 from “when removed”.
4. Insert the faceplate into the door profile. Ensure that it is flush.
5. Fasten all screws on the multipoint lock.



6. Fit the cylinder and handles.





### 5.7.4.2 C500

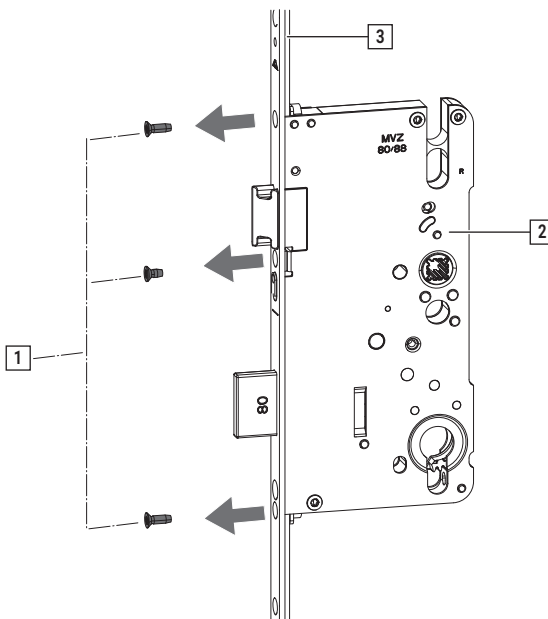


#### INFO

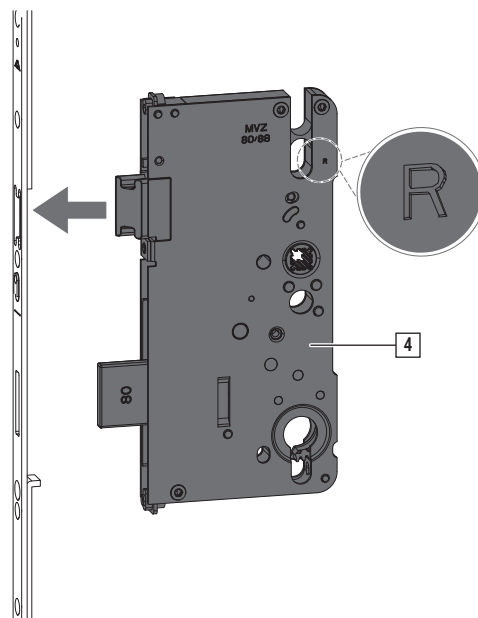
The system certificate and warranty become void when the main lock is replaced by the replacement main lock.

#### Replacement when removed

1. Undo three screws [1].



2. Remove the main lock [2] from the faceplate [3].
3. Insert the replacement main lock [4] marked with "R" into the faceplate.

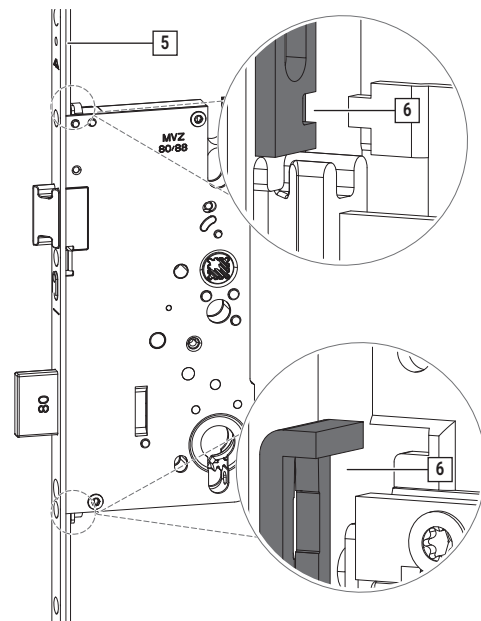


4. Mount the connecting rod [5] in the connector [6] of the replacement main lock.

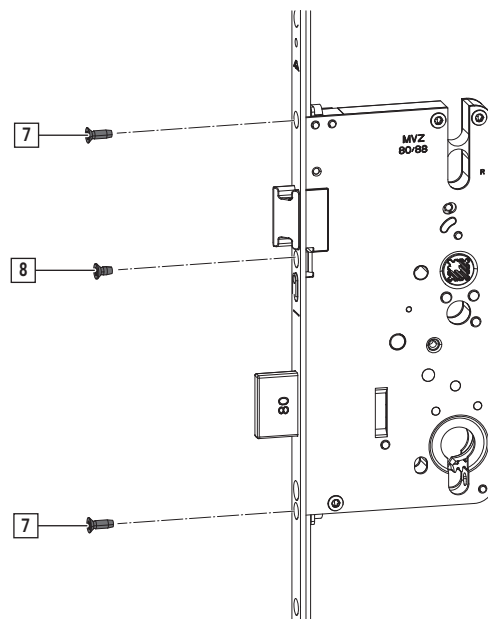


### INFO

Position the replacement main lock so that it is flush with the connecting rod and faceplate.



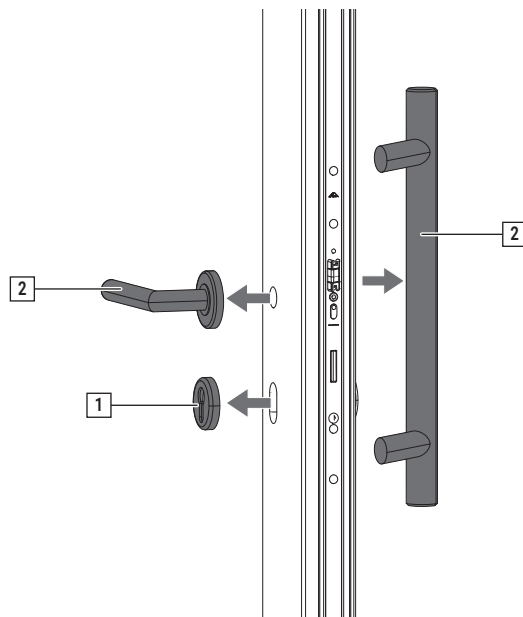
5. Fit it with three screws.  
[7] M4 x 12  
[8] M4 x 8  
Torque: max. 4 Nm



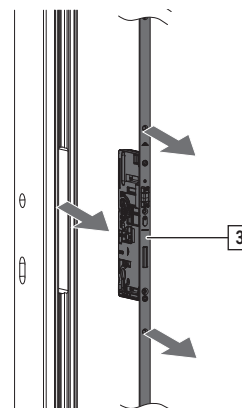


### Replacement when installed

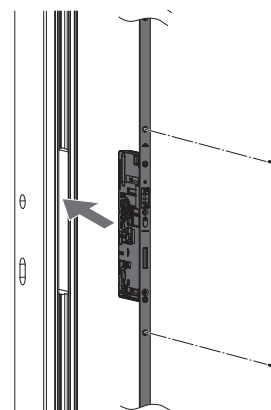
1. Remove the cylinder [1] and handles [2].



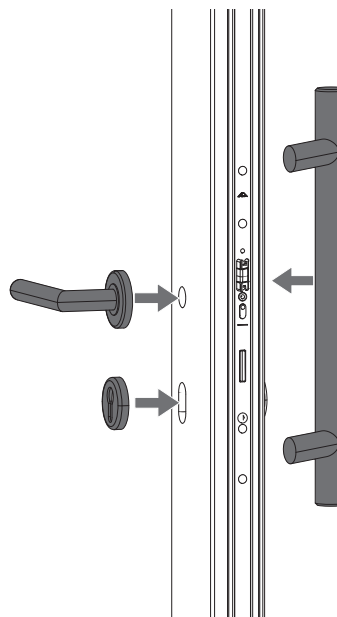
2. Undo all screws on the multipoint lock [3] and remove the entire faceplate from the door profile.



3. Perform steps 1 to 5 from “when removed”.
4. Insert the faceplate into the door profile. Ensure that it is flush.
5. Fasten all screws on the multipoint lock.



6. Fit the cylinder and handles.





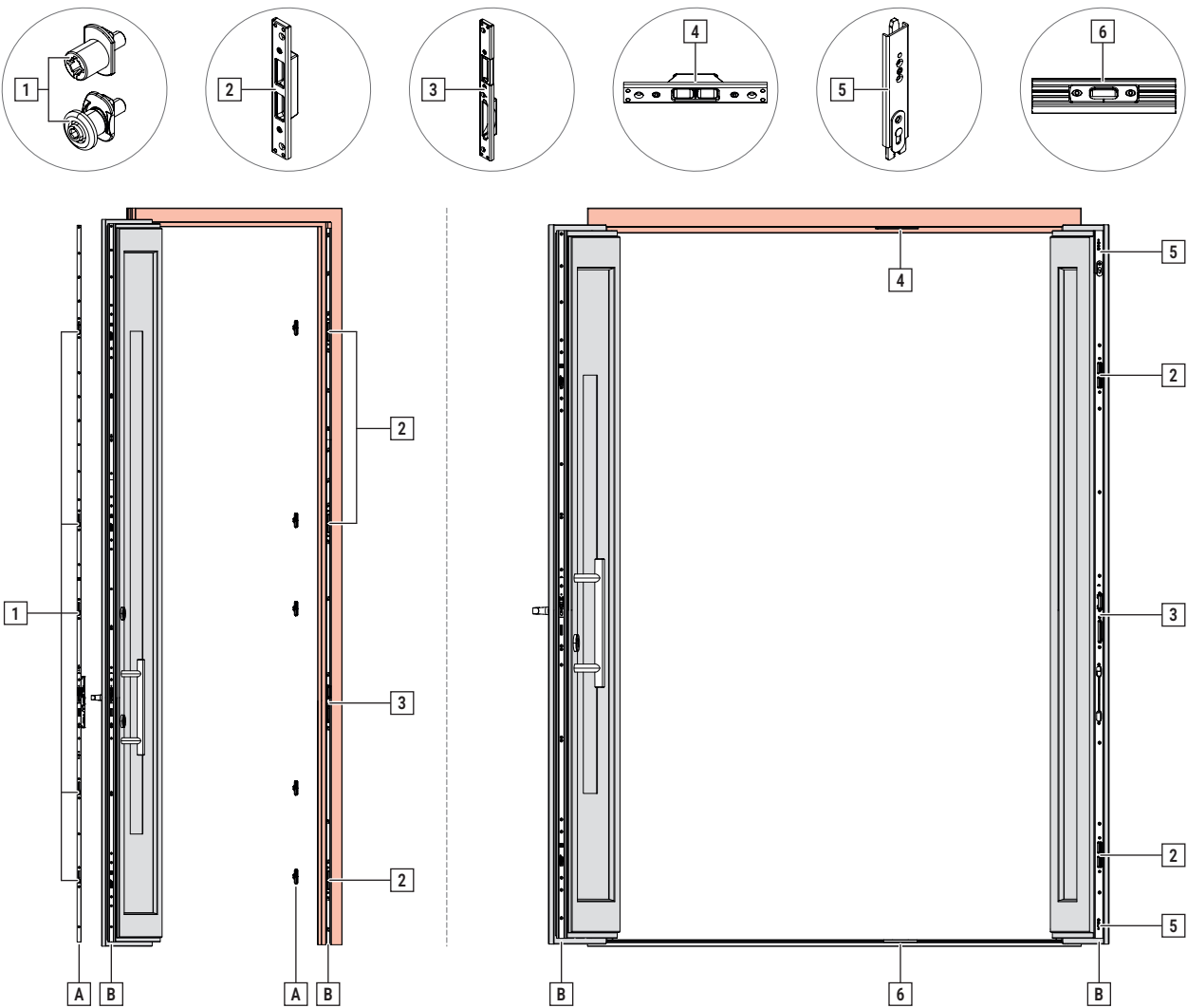
## 6 Adjustment



### INFO

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

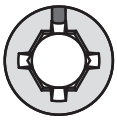
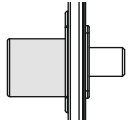
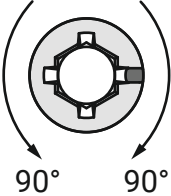
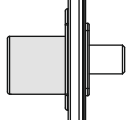
### 6.1 Overview



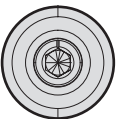
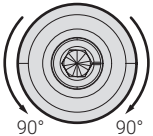
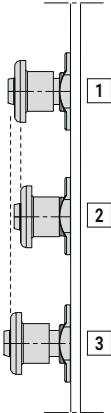
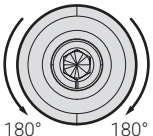
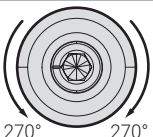
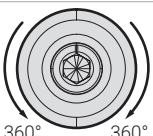
| Assignment | Description                                              |                 |
|------------|----------------------------------------------------------|-----------------|
| [A]        | Version with E / V cam                                   |                 |
| [B]        | Version with additional locks                            |                 |
| [1]        | E / V cam                                                | → from page 108 |
| [2]        | Striker for additional lock                              | → from page 108 |
| [3]        | Latch / deadbolt striker                                 | → from page 108 |
| [4]        | Shootbolt protrusion striker                             | → from page 108 |
| [5]        | Connector component for lever-operated espagnolette Plus | → from page 114 |
| [6]        | Cover bridge                                             |                 |

## 6.2 Locking cam

### 6.2.1 E cam

| E cam                                                                             | Adjustment distance                                                                          | Gasket compression adjustment / mm | Side view                                                                           |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------|
|  |                                                                                              |                                    |  |
|                                                                                   | <br>90° 90° | ±0.8 mm                            |  |

### 6.2.2 V cam

| V cam                                                                              | Adjustment distance                                                                              | Gasket compression adjustment / mm | Side view                                                                                                                                                                             |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                                                                  |                                    |                                                                                                                                                                                       |
|                                                                                    | <br>90° 90°   | ±0.8 mm                            |  <p>[1] 0 = initial position<br/>[2] -0.8 mm max. adjustment<br/>[3] +0.8 mm max. adjustment</p> |
|                                                                                    | <br>180° 180° |                                    |                                                                                                                                                                                       |
|                                                                                    | <br>270° 270° | ±0.8 mm                            |                                                                                                                                                                                       |
|                                                                                    | <br>360° 360° |                                    |                                                                                                                                                                                       |

## 6.3 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.

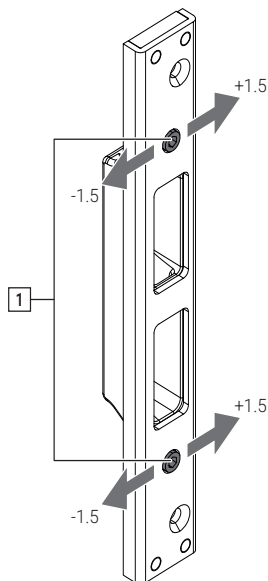


### 6.3.1 Lateral adjustment

#### Eccentric adjustment

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

Tool: size 3 hex key



#### INFO

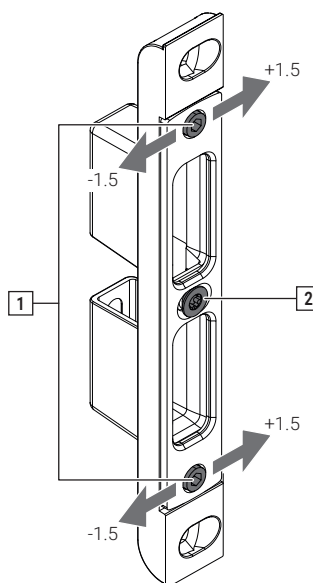
The adjustment distance of 1.5 mm is reached after a 90° turn:

- 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  $\pm 1.5$  mm via the adjustment eccentric [1] at the top and bottom.

Tool: size 3 hex key





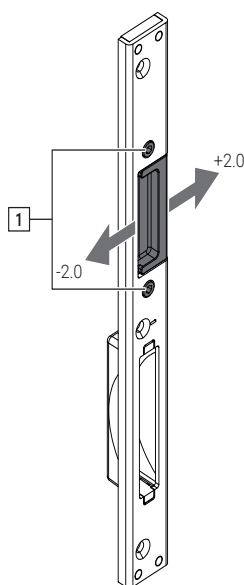
## INFO

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

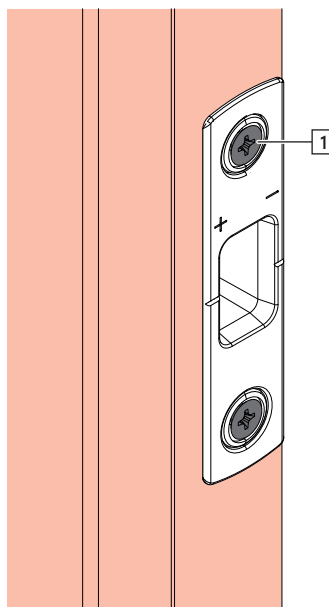
## Adjustment of lock-in position (manually using two retaining screws)

1. Undo the retaining screws [1].  
Tool: T20 hexalobular socket screwdriver
2. Perform lateral adjustment  $\pm 2$  mm by hand.  
Lock-in position integrated in component.



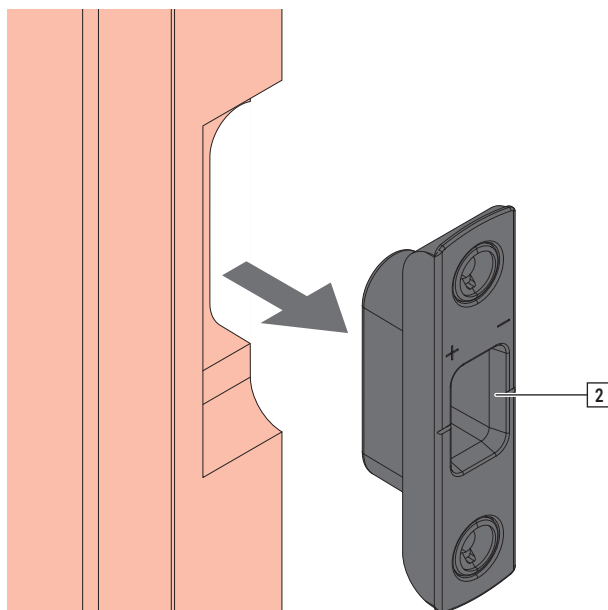
## Turning the component

1. Undo the screws [1].

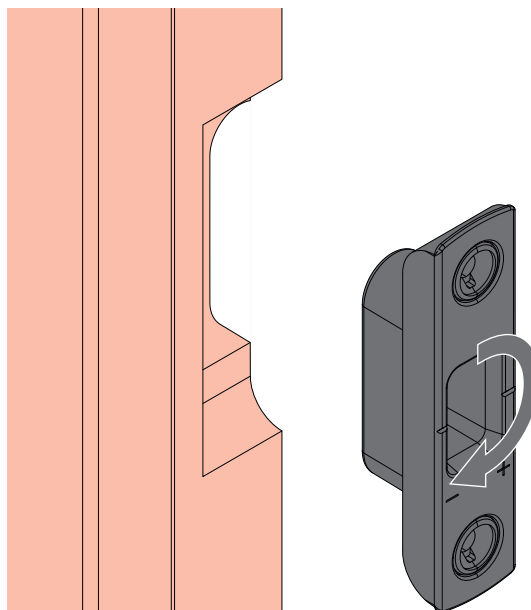




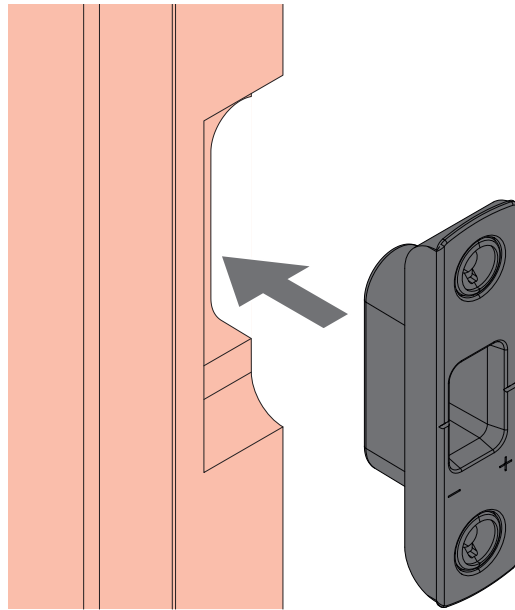
2. Remove the striker [2] from the frame.



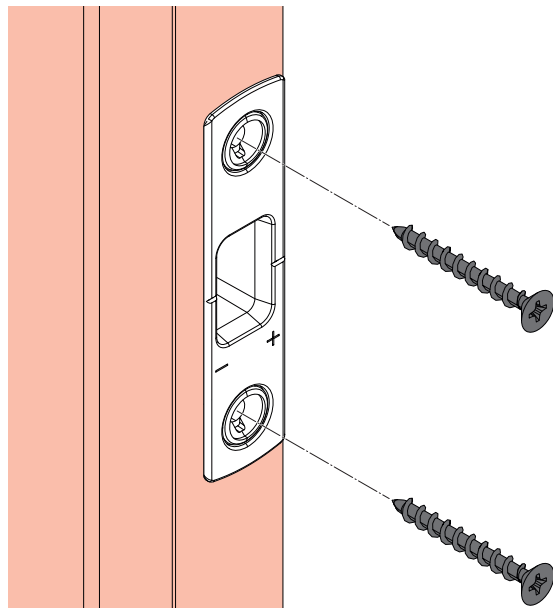
3. Turn the striker 180°.



4. Insert the striker.

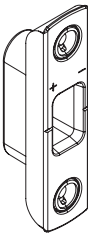


5. Fasten the striker with two screws.

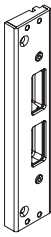
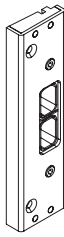
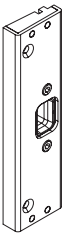




### 6.3.2 Timber

|                                                                             | Latch / deadbolt                                                                  | Combination                                                                         | Shootbolt protrusion                                                                | Bolt                                                                                  |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Adjustment of lock-in position<br>$\pm 2$ mm                                |  | -                                                                                   | -                                                                                   | -                                                                                     |
| Eccentric adjustment<br>$\pm 1.5$ mm                                        |  |   |  |    |
| Eccentric adjustment (with a retaining screw in the centre)<br>$\pm 1.5$ mm | -                                                                                 |  | -                                                                                   | -                                                                                     |
| Turning the component                                                       | -                                                                                 | -                                                                                   | -                                                                                   |  |

### 6.3.3 PVC

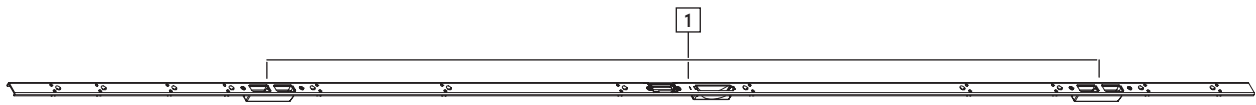
|                                      | Latch / deadbolt                                                                    | Combination                                                                         | Shootbolt protrusion                                                                 | Bolt                                                                                  |
|--------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Eccentric adjustment<br>$\pm 1.5$ mm |  |  |  |  |

### 6.3.4 Aluminium

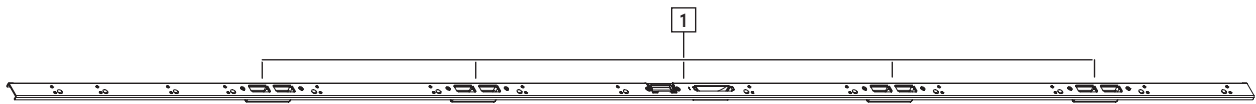
|                                      | Latch / deadbolt                                                                    | Combination                                                                         | Shootbolt protrusion                                                                 | Bolt                                                                                  |
|--------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Eccentric adjustment<br>$\pm 1.5$ mm |  |  |  |  |

## 6.4 Striker strips

### 2 combination lockings (2C)

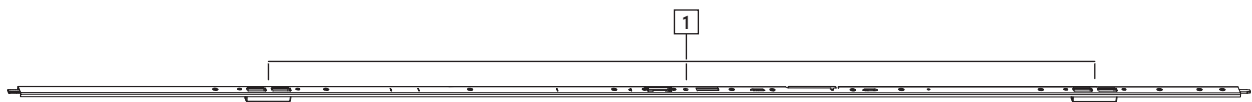


### 4 combination lockings (4C)



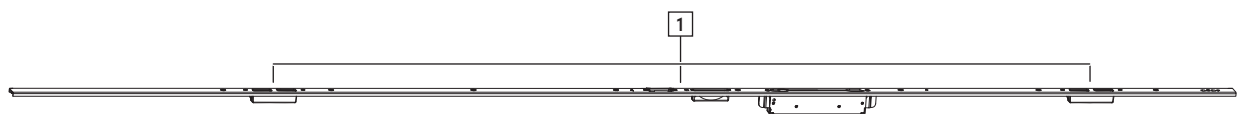
[1] Eccentric adjustment  
 $\pm 1.5 \text{ mm}$

## 6.5 Lever-operated espagnolette, standard



[1] Eccentric adjustment  
 $\pm 1.5 \text{ mm}$

## 6.6 Lever-operated espagnolette Plus

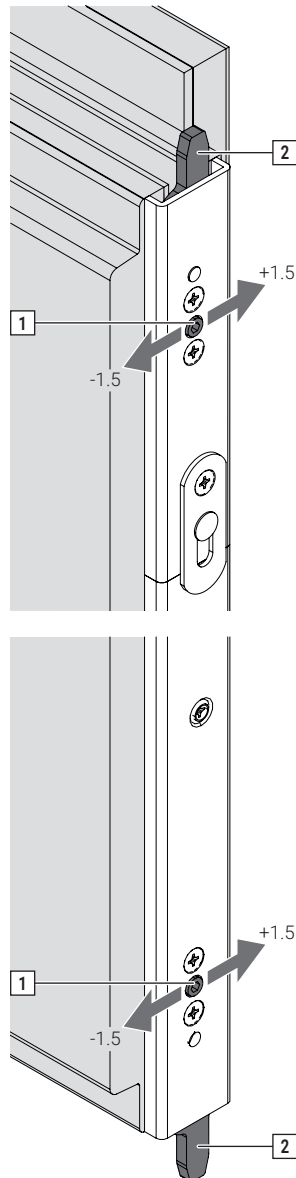


[1] Eccentric adjustment  
 $\pm 1.5 \text{ mm}$



### Shootbolt protrusion

1. Adjust the adjusting screw [1] for shootbolt protrusion [2] at the top and bottom.  
Adjustment distance  $\pm 1.5$  mm  
Tool: size 3 hex key



### INFO

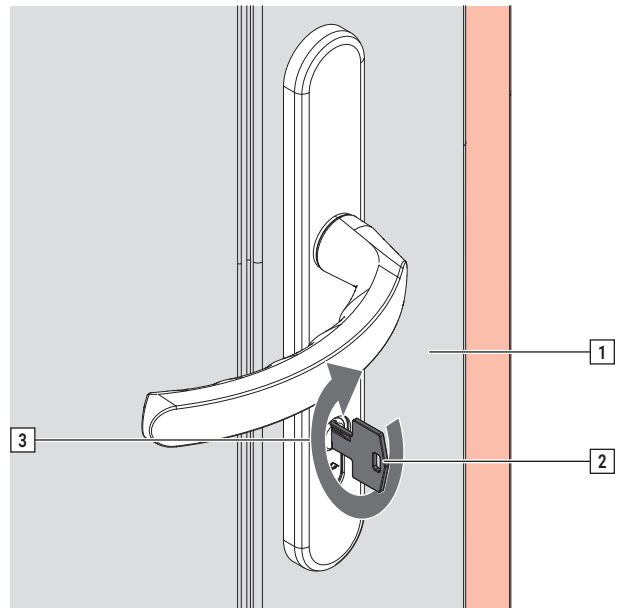
For information about integrating a threshold, refer to [IMO\\_423](#) (Roto Eifel).

## 7 Operation

### 7.1 Multipoint locking, cylinder-operated

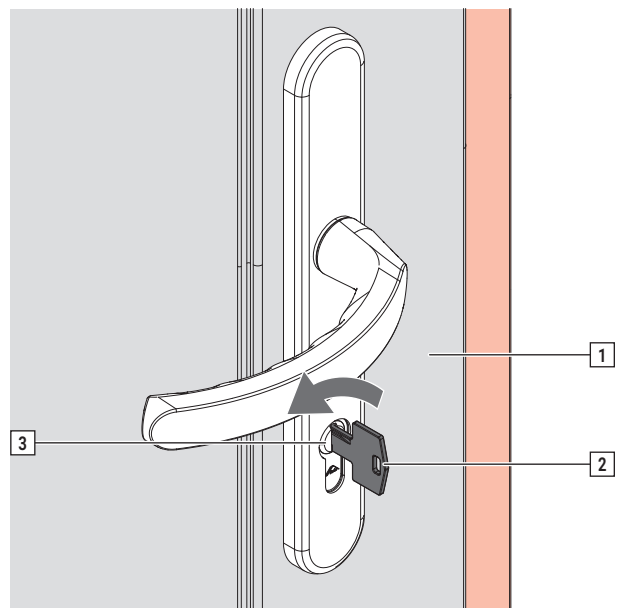
#### Locking the door

1. Close the leaf [1] and insert the key [2] into the profile cylinder [3].
2. Turn the key in the locking direction:  
Push-back safeguard: turn once  
Locking: turn twice



#### Unlocking the door

1. Insert the key [2] into the profile cylinder [3] of the door [1].
2. Turn the key in the unlocking direction:  
Unlocking: turn twice

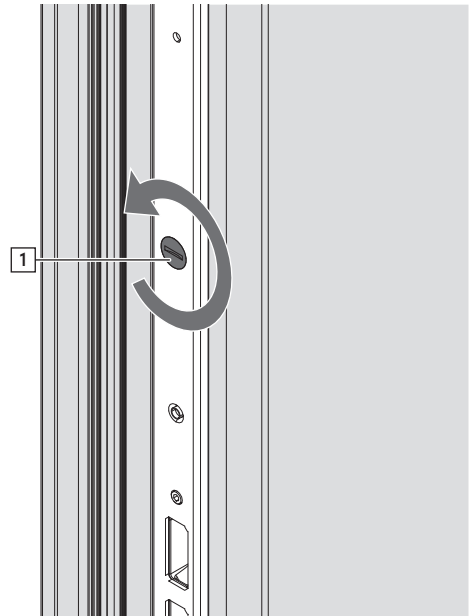




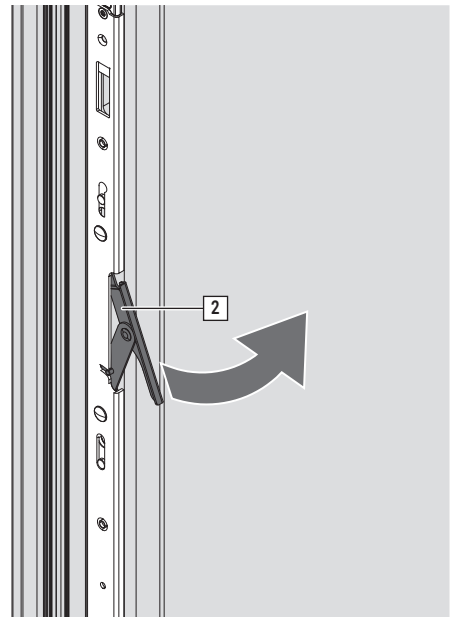
## 7.2 Lever-operated espagnolette Standard

### Unlocking the second opening leaf

1. Using a flat object (e.g. a coin), turn the blocking element [1] away from the lever and move it to a vertical position.
  - ▷ The connecting rod is released.



2. Pull the lever [2] forwards and upwards as far as the latching point.



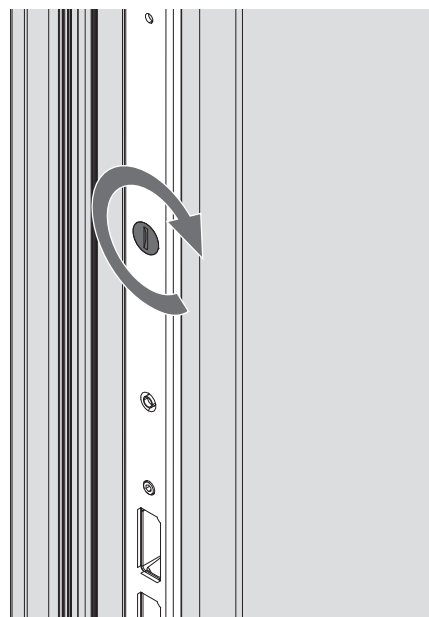
3. Open the second opening leaf.

### Locking the second opening leaf

1. Close the second opening leaf.
2. Push the lever down and slide it towards the lever-operated espagnolette to fold it in.

**Operation**  
**Lever-operated espagnolette Standard**

3. Using a flat object, turn the blocking element towards the lever and move it to a horizontal position.

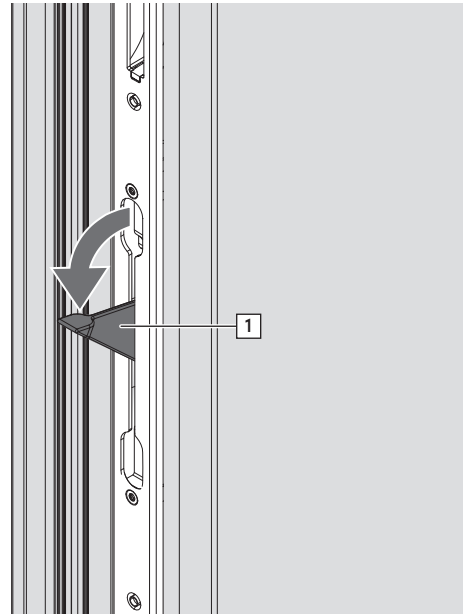




## 7.3 Lever-operated espagnolette Plus

### Unlocking the second opening leaf

1. Fold out the lever [1].
2. Open the second opening leaf.



### Locking the second opening leaf

1. Close the second opening leaf.
2. Fold in the lever.

## 7.4 Fault assistance

Check the tolerances and height offset on the element → *from page 19.*

| Fault                                                                                                 | Cause                                                                                                                                                         | Corrective action                                                                                                                                                       | To be carried out by |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| The door lever handle is not horizontal (hanging) when it is in the zero position (initial position). | Escutcheon fitted incorrectly (escutcheon not at the correct angle).                                                                                          | Remove the escutcheon and attach with drilling jig.                                                                                                                     | ■                    |
|                                                                                                       | Spindle-receiver holding spring worn / broken.                                                                                                                | Replace the lock casing.                                                                                                                                                | ■                    |
|                                                                                                       | Friction between door lever handle and long plate too high.                                                                                                   | Lubricate.                                                                                                                                                              | □                    |
| The door lever handle is not horizontal when it is in the zero position (too high).                   | Square spindle bent.                                                                                                                                          | Replace the entire square spindle or the entire door lever handle set.                                                                                                  | ■                    |
| The locking lug of the profile cylinder scrapes in the main lock casing.                              | Long plate / escutcheon and lever handle / lever handle not positioned correctly in relation to one another (axes and interaction on the inside and outside). | Remove the escutcheons and long plate and secure with drilling jig (drill new holes if required).                                                                       | ■                    |
| Screws scrape against the connecting rod.                                                             | Screws screwed into the door rebate at an angle.                                                                                                              | Turn in screws straight or use screws with a partial thread (without a thread behind the screw head).                                                                   | ■                    |
| Lock moves stiffly.                                                                                   | Screws are too tight.                                                                                                                                         | Loosen the screws.                                                                                                                                                      | ■                    |
| Lock rattles in the door.                                                                             | Screws are too loose.                                                                                                                                         | Tighten the screws according to the specifications.                                                                                                                     | ■                    |
| Locking cams brush against the striker.                                                               | Incorrect striker positions.                                                                                                                                  | Adapt the striker positions.                                                                                                                                            | ■                    |
| Key blocks after the first turn.                                                                      | Power wedges and/or bolts remain hanging from the point of entry of the frame components.                                                                     | Adapt the frame component position.                                                                                                                                     | ■                    |
|                                                                                                       | The door has dropped.                                                                                                                                         | Adjust the door hinges and frame components, provide new spacer blocking for the door element if required (see Glazing Guide FLY_11).                                   | ■                    |
| The lock casing deadbolt scrapes in the striker plate.                                                | Frame and frame components twisted in the vertical axis.                                                                                                      | Free up space for the deadbolt by mechanically machining the striker plate.                                                                                             | ■                    |
| The door does not stay closed.                                                                        | The latch does not run in.                                                                                                                                    | Adapt the frame component position.                                                                                                                                     | ■                    |
|                                                                                                       | The door has dropped / warped.                                                                                                                                | Adjust the door hinges and frame components, provide new spacer blocking for the door element if required (see Glazing Guide FLY_11).<br>Adjust the electrical openers. | ■                    |
| The door cannot be closed.                                                                            | The latch is not running into the lock casing.                                                                                                                | Lubricate the latch with Roto NX grease.                                                                                                                                | □                    |
|                                                                                                       | Contamination in the threshold area.                                                                                                                          | Clean the threshold area.                                                                                                                                               | □                    |

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

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



## 8 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

#### Property damage due to incorrect or improper testing!

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 |                 |
|----------------------------------------------------|----------------|-----------------|
| <b>Maintenance interval</b>                        |                | → from page 121 |
| <b>Cleaning</b>                                    |                | → from page 122 |
| Clean hardware                                     | □              |                 |
| <b>Care</b>                                        |                | → from page 122 |
| Lubricate movable parts                            | □              |                 |
| Lubricate locking points                           | □              |                 |
| <b>Performance test</b>                            |                | → from page 123 |
| 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                             | ■              |                 |
| <b>Repair</b>                                      |                | → from page 125 |
| 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

### 8.1 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.

## 8.2 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, carboic 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. → 8.3 "Care" from page 122
- ▶ Apply a thin protective film to the hardware, for example using a cloth soaked in oil.

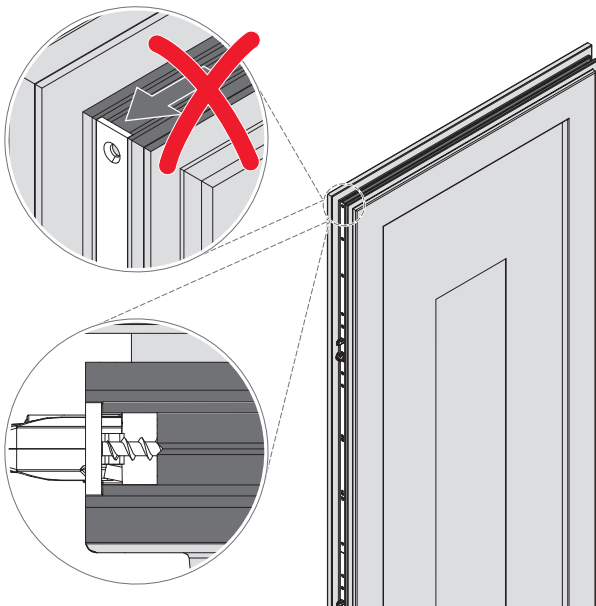


### ATTENTION

#### 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.



## 8.3 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 functionally relevant hardware components must be lubricated on a regular basis.

### Recommended lubricants

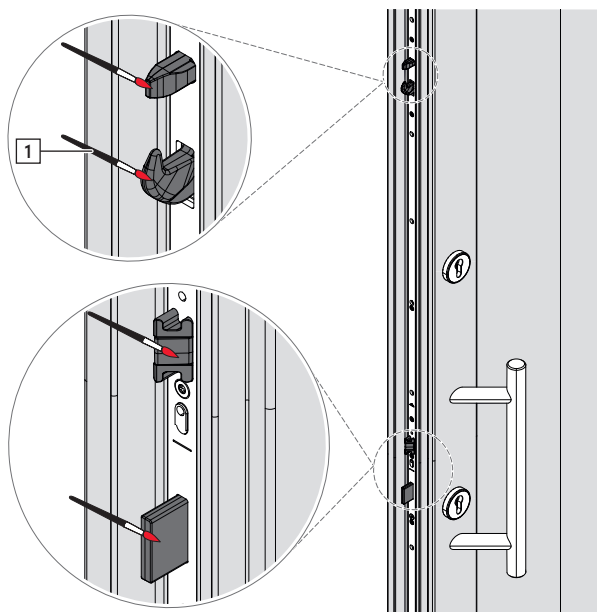
- Roto NX grease  
Material number: 782881



### 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.

## 8.3.1 Lubrication points



[1] Grease

## 8.4 Performance test



### PRECONDITION

The leaf and frame must be vertical in order to carry out 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 locks 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 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.

## 8.5 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 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:

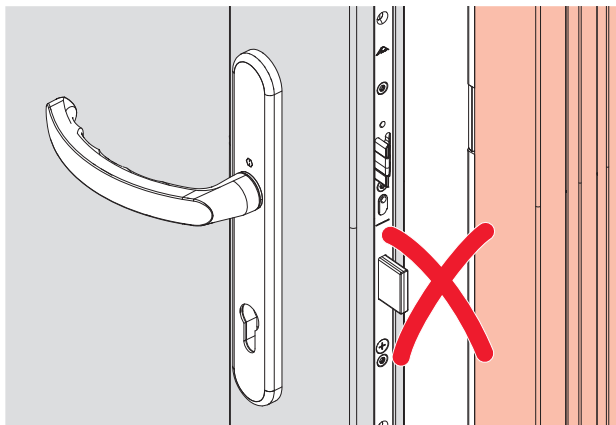
- Adjusting the hardware.
- Replacing the hardware or hardware components.
- Removing and reinstalling the elements.

The specialist company must observe the following:

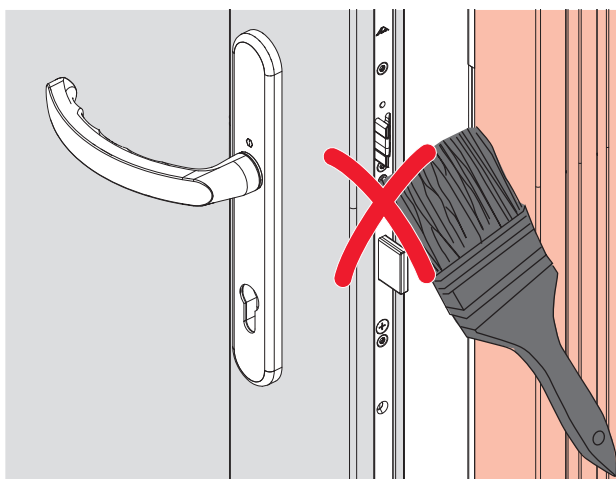
- Perform the necessary repair work properly, according to generally recognised engineering practice and in accordance with the applicable regulations.
- Do not perform makeshift repairs on worn or damaged components.
- Only use original or approved spare parts for replacements.

## 8.6 General information

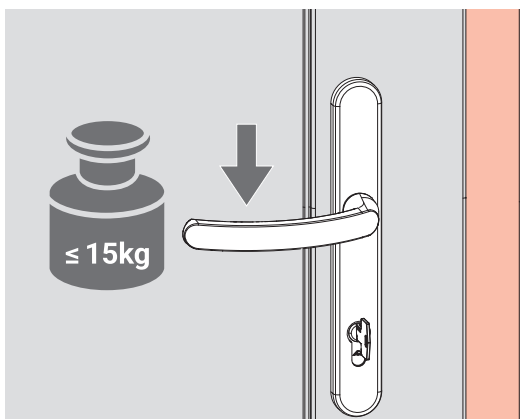
### 8.6.1 For the end customer



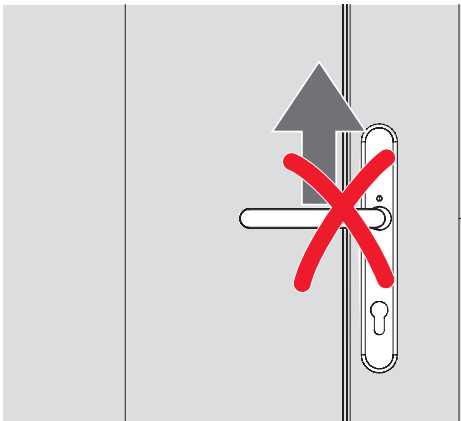
When the lock is extended, do not close the door or push it against the frame.



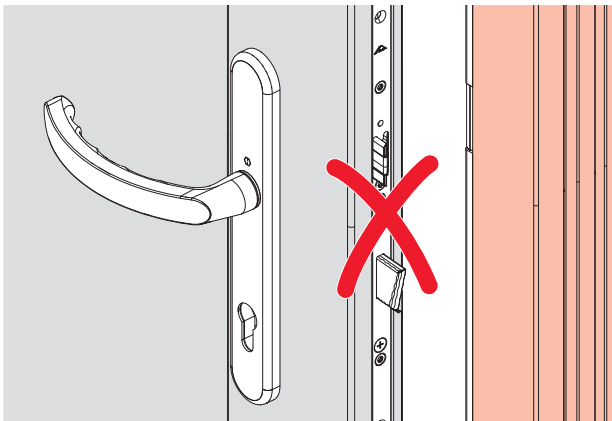
Do not paint over the lock or locking components (latch, deadbolt, additional lock, etc.).



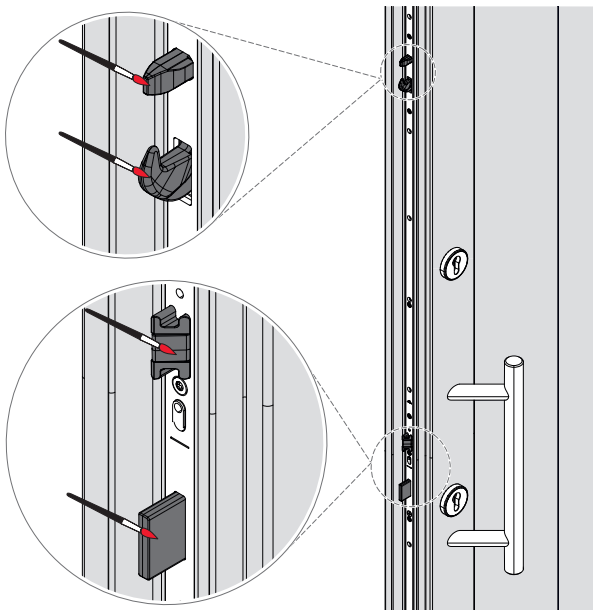
Do not place heavy loads on the handle; the maximum load is 15 kg.



Do not carry the leaf by the door lever handle.



Where there are visible signs that force has been used, arrange for the lock and/or lever handle set to be replaced by a specialist company.



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.

## 9 Dismantling

---



### WARNING

#### **Improper dismantling may pose a risk of death!**

The leaf may fall during dismantling.

- ▶ Secure the leaf 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.

---

## 9.1 Hardware components

### Removing hardware components

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



## 10 Transport

### 10.1 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 transport. 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.

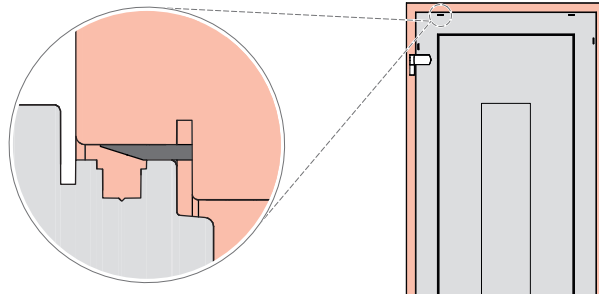


#### INFO

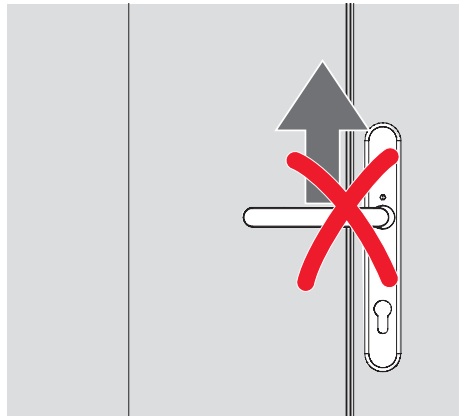
Lifting equipment and protective devices may only be used if they are in full working order.

## 10.2 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.



## 10.3 Storing the hardware

Store all hardware components as follows until they are installed:

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



## 11 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.

### 11.1 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.

### 11.2 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.



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