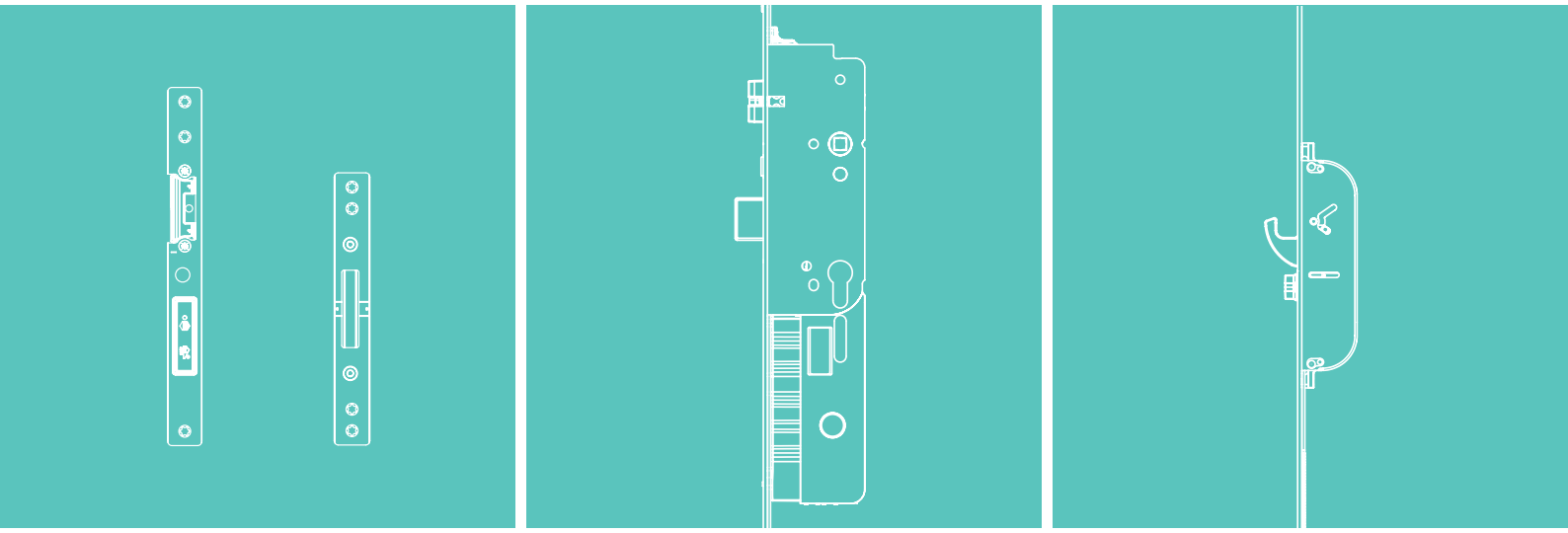
TECHNOLOGY IN MOTION

**The work described in these installation instructions may only be carried out by specialist companies.**

Read thoroughly before use/installation!
Keep for future reference!

# MACO PROTECT

## DOOR LOCKS



## ASSEMBLY INSTRUCTIONS

M-TS
Motorised door lock

ALUMINIUM

TRANSLATION OF THE ORIGINAL INSTRUCTIONS

maco.eu

# Key and abbreviations

| | | |
|---|---|---|
|  | DM | Backset |
|  | E | Distance |
|  | GM | Handle height |
|  | | Profile front edge |
| | HO | Hook upwards |
| | M-TS | Motorised door lock |
| | MF | Multifunction latch |
| | EV | End piece |
| | FFH | Sash rebate height (SRH) |
| | K+ | Case dimension top |
| | K- | Case dimension bottom |

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# 1. Notes for using these installation instructions

**Target group**

› These installation instructions are intended exclusively for specialised companies and trained specialist personnel (e.g. carpenters, metalworkers for construction technology, window and glass façade installers).

› The work described in these installation instructions may only be carried out by specialist personnel! This also applies in particular to electrical work, which may only be carried out by qualified electricians.

**Before starting installation ...**

› Read these installation instructions carefully before starting installation. Install all components professionally and only as described in these installation instructions and observe all safety and hazard information.

› The use of system accessories not expressly approved by MACO, modifications or repair work not expressly authorised by MACO and improper servicing can lead to malfunctions and must be avoided.

› Failure to comply with the installation, safety and hazard information described in these installation instructions does not guarantee the proper functioning of the fitting; this leads to the immediate loss of warranty, guarantee, compensation, product liability claims and other liability claims against MACO. MACO accepts no liability for any damage to persons or material resulting from improper installation or installation contrary to the instructions given in these installation instructions.

› Failure to comply with the installation instructions will also result in the immediate loss of any outstanding claims arising from any existing warranty agreement.

› Coordinate the required fastening material with the structure and the corresponding load and supplement it if necessary. Any fastening material supplied only fulfils part of the requirements.

› Test doors and safety elements. The intactness and ease of movement of the doors must be ensured.

› All work (installation, adjustment, etc.) must be carried out in a de-energised state.

› Before installing the drive, check that the applicable temperature range is suitable for the environment.

### Usage instructions

› These installation instructions are revised on an ongoing basis and the latest version is available for download at https://www.maco.eu/assets/759144. The QR code, which takes you directly to the latest version, and the creation date can be found at the end of these installation instructions.

› All illustrations are only symbolic and serve only for better visualisation.

› Unless otherwise stated, dimensions are given in **millimeters**.

› Further information on our currently available products can be found on our website www.maco.eu.

› If in doubt, please consult your MACO contact person!

› Please send any suggestions or ideas for improving our installation instructions by email to feedback@maco.eu

Protective note to restrict the use of documents in accordance with ISO 16016:
© Mayer & Co Beschläge GmbH.

### Applicable documents

The following documents must be observed in addition to these instructions and/or provide additional information:

› Online catalogue eCat at https://ecat.maco.eu/
› Operating and maintenance instructions for end users - Doc. No. 757585
› Installation instructions French Casement Drive Gear - Doc. No. 760309
› Installation instructions Electrical And Mechanical Door Openers - Doc. No. 760320

You can find the current version of all documents on our website at https://www.maco.eu/Downloads.

### The specialist company's obligation to provide information and instruction

Please ensure that you fulfil your obligation to inform and instruct the end user! As the distributor, you are obliged to deliver the window or door elements exclusively including the applicable operating and maintenance instructions and, if applicable, a sticker for deviating operating methods. We make these available to our customers in the download area of our website (https://www.maco.eu/Downloads).
End users must be trained accordingly.

### Retention of documents



Keep these installation instructions for future reference.

## 2. Safety and warning notices

These installation instructions contain safety instructions before a sequence of actions that could result in personal injury or material damage. The hazard prevention measures described must be strictly adhered to. For the safety of personnel, there are safety instructions in the following 3 stages:




Imminent danger!
Failure to comply with such instructions will result in death or serious injury!




Imminent danger from electrical voltage!
Failure to comply with such instructions will result in death or serious injury!




Possible imminent danger!
Failure to comply with such instructions can result in death or serious injury!




Warning against dangerous electrical voltage!
Failure to comply with such instructions can result in death or serious injury!




Possible imminent danger!
Failure to comply with such instructions may result in minor or slight injuries!

In addition, installation steps that require special attention are labelled with the following note:




Note to avoid material damage or errors when installing the fitting parts on the element.

# 3. Storage and transport of the fitting / door or window element

Check the following immediately upon delivery:

› damage to packaging or containers
› damage to the material
› other obvious irregularities

## 3.1 Notes on storing and transporting the fitting

Improper storage and transport of the fitting can impair the surface quality. This can result in the safety and function of the fitting no longer being guaranteed. To prevent this, the following points must be observed:

› It must be ensured that the room air is permanently dry (max. 60% relative humidity).
› Avoid large temperature fluctuations that lead to the formation of condensation. Condensate on the fitting leads to the galvanised surfaces being attacked (rust formation).
› Aggressive vapours from cleaning agents or installation aids such as silicone and the like must be avoided at all costs - even for short periods. Vapours from such substances can very quickly lead to corrosion of fittings.
› Salty air or air polluted by trade and industry also leads to corrosion on galvanised surfaces and is also unsuitable for storage facilities.

## 3.2 Notes on transporting and handling the door or window elements

**WARNING**

**Possible danger to life and limb due to improper handling and transport! Follow the instructions.**

Improper handling and improper transport of the doors/windows or French door elements can lead to dangerous situations and cause serious accidents or even death. To prevent this, the following notes must be observed:

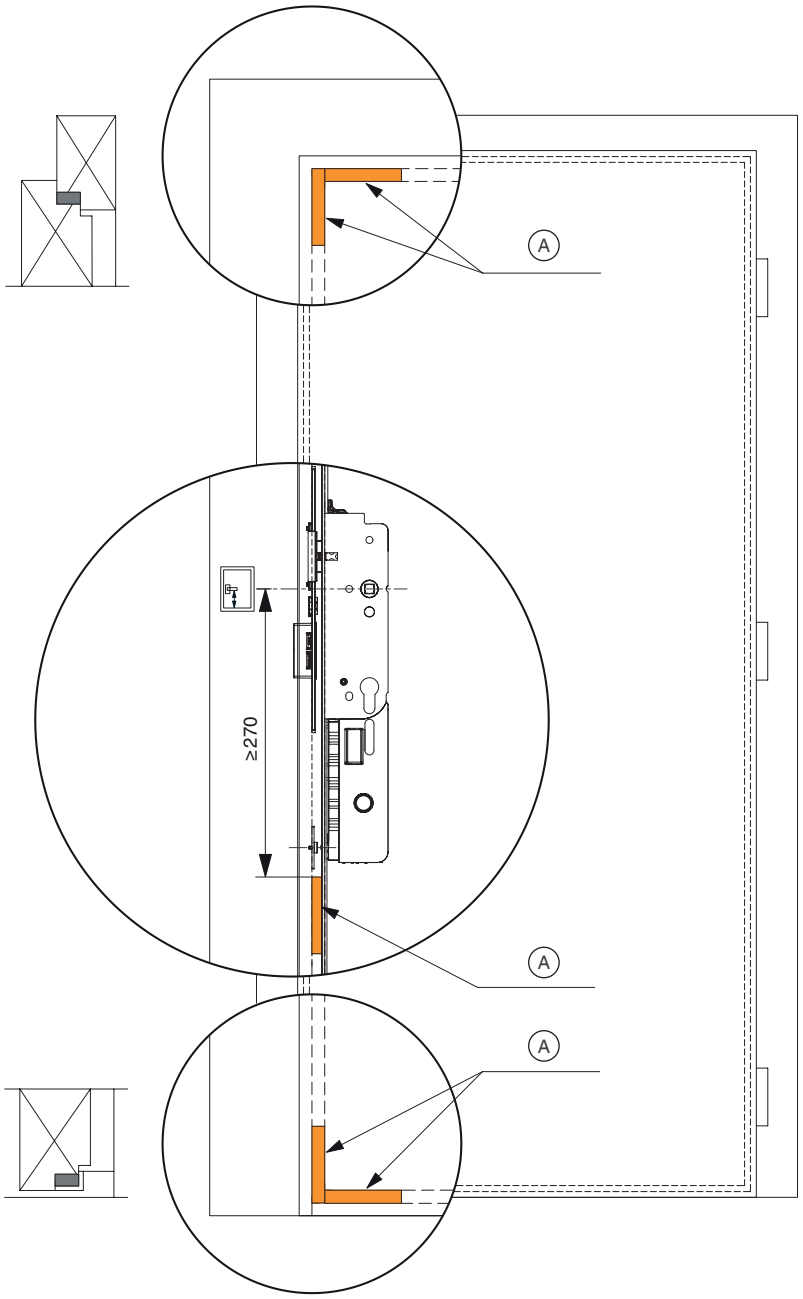
› During loading and unloading processes, force application points must be selected that only generate reactive forces in accordance with the design of the fitting for the intended installation position.
› During handling and transport, ensure that the fitting is in the locked position to prevent the sash from swinging open in an uncontrolled manner. Suitable securing devices must be used.
› Only transport securing devices that are matched to the respective rebate clearance may be used.

## 3.3 Use of transportation protection devices

**During transport, the rebate gap between the sash and the frame must be ensured by means of appropriate transport protection. Otherwise, it can lead to damage to the trigger sensor and thus to functional failure of the M-TS.**

Simple transport protection devices, wedges or blocks ensure a safe transport of the entire door element. Remove only after installation.

Ⓐ Transport protection device position



› Transport must be carried out in the intended installation position. If transport in the intended installation position is not possible, the sash must be unhinged and transported separately from the associated frame.

Reactive forces can occur during transport and loading and unloading processes, especially when supported by aids such as suction cups, transport nets, forklift trucks or cranes, which can lead to damage or incorrect loading of the installed fitting. The following instructions must therefore be observed and taken into account for all transport, loading and unloading processes:

› The type and application points of force during transport and during loading and unloading processes have a considerable effect on the reactive forces that occur.
  → The force application points must always be selected so that the resulting reactive forces are absorbed in accordance with the design of the fitting for the intended installation position. This applies in particular to the bearing points.

› When transporting door and window elements, considerable reactive forces occur due to vibrations, which can also cause damage or incorrect loads on the installed fitting.
  → Always use transport securing devices (e.g. spacer blocks) adapted to the respective rebate clearance to hold the sash in the intended position in the frame during transport and thus transfer the reactive forces that occur directly from the sash via the frame.
  → If possible, door and window elements should always be transported in the intended installation position so that the resulting reactive forces are absorbed in accordance with the design of the fitting for the intended installation position. This applies in particular to the bearing points. If transport in the intended installation position is not possible, the respective sashes must be unhinged and transported separately from the associated frame.

In addition, it is recommended that the following guidelines be observed:

› TLE.01 from VFF (German Window and Facade Association (Verband Fenster + Fassade)) The correct handling of ready-to-install windows and external doors during transport, storage and installation

(Source: www.guetegemeinschaft-schloss-beschlag.de/Pruefen-Zertifizieren/Richtlinien/VHBH)

# 4. Technical Data

You can find all technical data in our online catalogue at https://ecat.maco.eu (registration required).

## 4.1 Technical data M-TS Motor

| | |
|---|---|
| Lock box dimensions (W x H x D) | 15 x 327,8 x Backset dimension + 14,5 mm |
| Net weight | 343 g (without lock box) |
| Rated voltage (SELV) | 24 V DC +/- 5% (no AC) |
| Rated current | 1 A (briefly max. 3 A) |
| Standby consumption | 15,3 mA = 367 mW (no relay) |
| Operating temperature / Ambient temperature | -10 ... +55 °C |
| Relative air humidity | 20 ... 80%, non-condensing |
| Storage temperature | -40 ... +85 °C |
| User groups | Private users, e.g. lay people, children |
| Usage environment | in covered and enclosed spaces |
| Application area | Industrial area: yes<br>Residential area, business/commercial area, small businesses: yes |
| Inputs | 1 potential-free input |
| Outputs | 2 (max. 30 V DC max. 1 A resistive, galvanically isolated from each other and the supply) |
| Protection type | IP 40 |
| Certificate | CE |
| Duty cycle | DC 50% |
| Service life | 200,000 cycles |
| Protection class | III (SELV) |

The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose.
These are designed for an input voltage of 220-240 V / 50-60 Hz and are available from MACO.

# Technical Data

## 4.2 Technical data Bluetooth module for A-TS + M-TS "BLE Module"

| | |
|---|---|
| Dimensions (W x H x D) | 8,3 x 88,6 x 21,2 mm |
| Net weight | 18 g |
| Cable length | approx. 300 mm |
| Frequency range | 2,40 GHz ... 2,48 GHz |
| Rated voltage (SELV) | 12 ... 24 V DC |
| Rated current | 0,01 A |
| Standby consumption | approx. 0,11 W |
| Operating temperature / Ambient temperature | -10 ... +55 °C |
| Relative air humidity | ≤95%, non-condensing |
| Storage temperature | -25 ... +70 °C |
| User groups | private users, e.g. lay people, children |
| Usage environment | in covered and enclosed spaces |
| Application area | Industrial sector: no<br>Residential area, business/commercial area, small businesses: yes |
| Inputs | - |
| Outputs | 1 potential-free output |
| Certificate | CE |

## 4.3 UPS (uninterruptible power supply)

see installation instructions and UPS module data sheet, Doc. No. 759528

## 4.4 Power supply

see installation instructions and data sheet power supplies 480276 and 480277, Doc. No. 759529

# 5. Certificates and performance certificates

## Certificate according to EN 14846

The M-TS has been tested and certified in accordance with EN 14846:2008.

| CE | Mayer & Co Beschläge GmbH<br>Alpenstraße 173<br>5020 Salzburg<br>Austria | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **20-004299–PR01**<br>**20-004299–PR02** | 21 | | | | | | | | |
| EN 14846:2008 | 3 | S | 7 | 0 | 0 | J | 4 | 1 | 2 |

Further certificates and performance certificates can be found under www.maco.eu.

EU Declarations of conformity or EC Declarations of incorporation can be found at:

EU Declaration of conformity Bluetooth Module Instinct, A-TS, M-TS
www.maco.eu/assets/759742

EU Declaration of conformity Power supply Instinct A-TS, M-TS
www.maco.eu/assets/759745

EU Declaration of conformity UPS for A-TS and M-TS
www.maco.eu/assets/759820

EC Declaration of incorporation M-TS-Motor
www.maco.eu/assets/759835

# 6. Intended use

› The M-TS is intended to be installed in vertical front doors, apartment doors and side doors made of PVC, timber, aluminium or steel and combinations thereof.

› Mount all hardware parts professionally as described in this manual and observe all safety instructions.

› In order to avoid errors in the electronics due to damaged cables, all milling/drilling in the area of the cable routing must be carefully deburred!

› Installation and electrical installations must be carried out in accordance with these instructions. Incorrect wiring can lead to the destruction of the electronics.

› When screwing in, make sure that the cables are not damaged by the fastening screws!

› Before installation, ensure that all components are in perfect condition - damaged or faulty components must not be used under any circumstances. Use M-TS only in a perfect condition.

› Power to the power supply must be switched off before all work on the M-TS and the voltage-carrying components is performed.

# 7. Reasonably foreseeable misuse

| | |
|---|---|
| **CAUTION** | Improper assembly, misuse or unusual use, the use of system accessories not expressly approved by MACO, or modifications or repair work not expressly approved by MACO may lead to malfunctions and must be avoided. Any measures not expressly permitted by MACO shall result in the loss of all liability, warranty and, if necessary, separately agreed warranty claims. |

› The M-TS must NOT be used for escape or panic doors according to EN179 or EN1125.

› Material notes:

| | |
|---|---|
| **CAUTION** | The following instructions regarding the material of the fitting must be observed. Otherwise, the fitting may be damaged.<br>In addition, all warranty claims may be invalidated! |

› The fitting described in these installation instructions is made of galvanised metal, passivated and sealed in accordance with EN ISO 2081:2018. It may not be used in environments with aggressive, corrosive air contents (e.g. in swimming pools, stables, buildings near the coast, polluted industrial areas, buildings for processing in the chemical industry, etc.). The fitting is also not suitable or intended for use in acidic woods (oak, larch, teak, etc.) and woods with aggressive ingredients/surface treatments. MACO offers fittings with a Tricoat-Evo surface for these areas of application.

› If the fitting is to be used in demanding environments and with demanding materials, please contact your MACO contact person before installation.

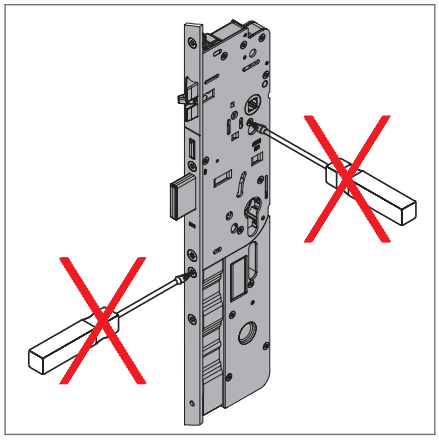
› Do not use acid-curing sealants, as these can lead to corrosion of the hardware parts.

› The door elements may only be surface-treated (painting, varnishing, glazing, oiling, etc.) before the fitting is installed. Subsequent surface treatment can impair the function of the fitting. In this case, all warranty, guarantee, compensation and product liability claims, as well as other liability claims against MACO shall lapse.

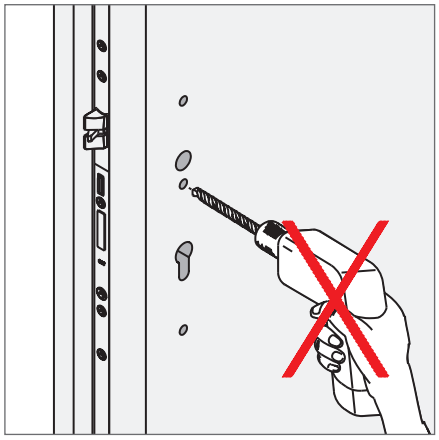
› The surface of the fitting may not be damaged during processing. Otherwise, after a while, this leads to white or red rust, which destroys the components. Damaged parts must be replaced.

**CAUTION**

Failure to observe the following information may result in damage to the fitting!



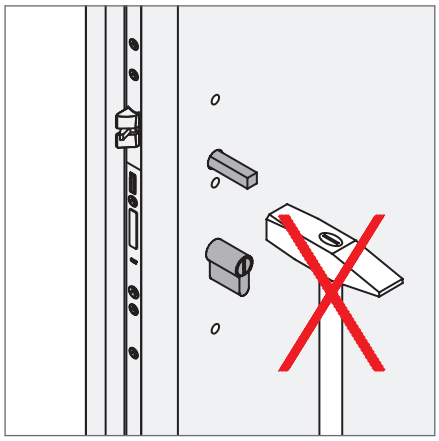
Never open the lock case!



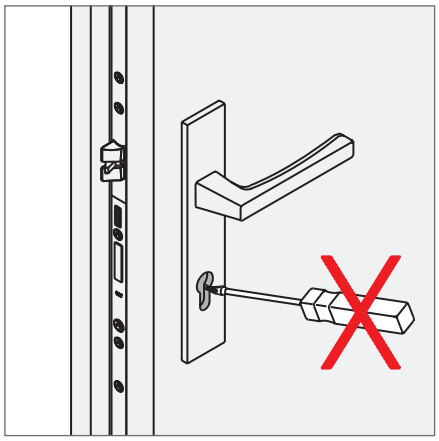
Drill all holes before installation of the lock.



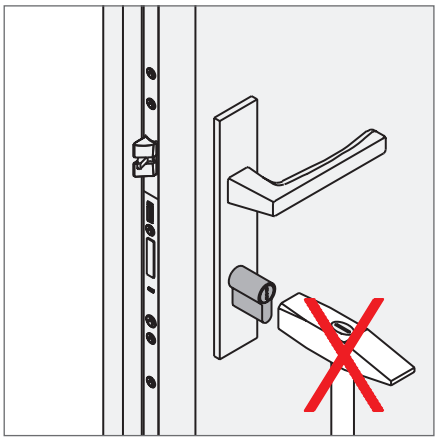
Remove swarf from the routing pockets!



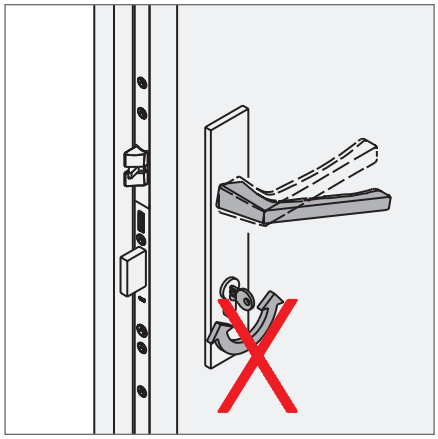
Do not force the handle pin through the lock nut!



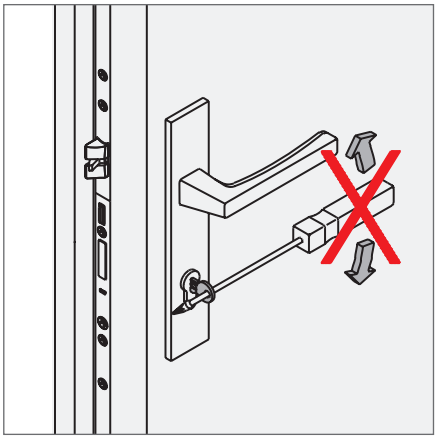
Only close the lock with the corresponding operating key!



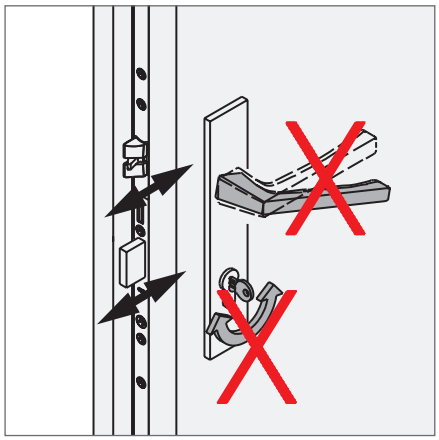
Do not use force during the cylinder assembly!



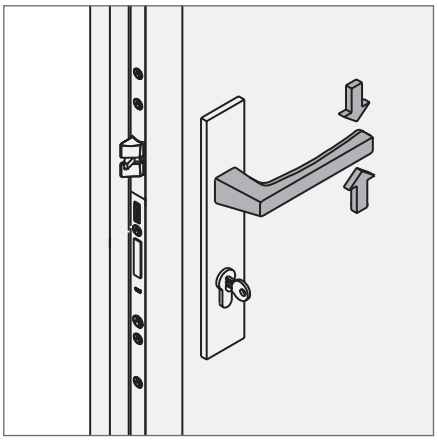
Do not simultaneously press the handle and turn the key!



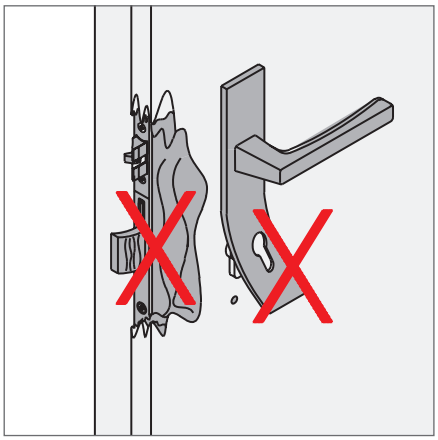
Do not turn the key using force!
The latch of the main lock must not rub against the striker plate – this also applies to multi-point locks without door acceleration, and all latches of the side locks. For this, use the adjustment option on the striker plates and door hinges. Adjustment of the holes in the striker plates is not permitted.



Do not press the handle or activate the key during electric locking and unlocking!



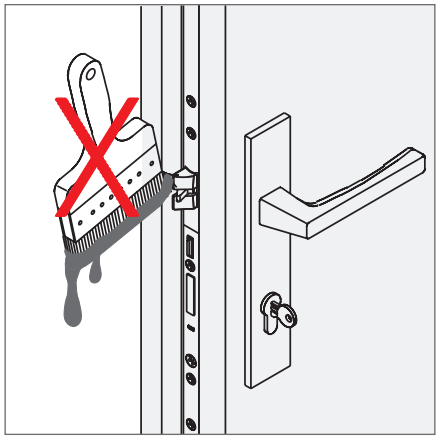
Only apply load to the handle in the normal direction! Apply a maximum force of 15 kg in the direction of actuation (on the handle).



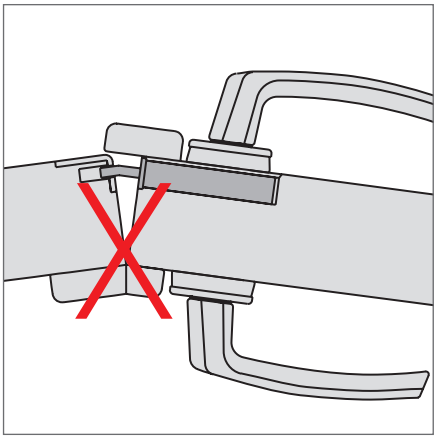
The multi-point lock must be replaced as soon as traces of use of force are visible!



Do not carry the door leaf with the handle!



Do not paint or varnish over the padlock bolt or latch!

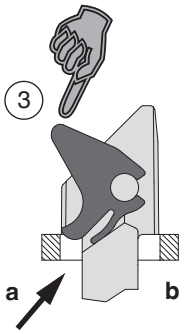


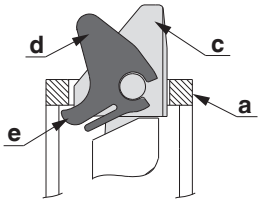
Double-sash doors must not be forced over the inactive leaf!



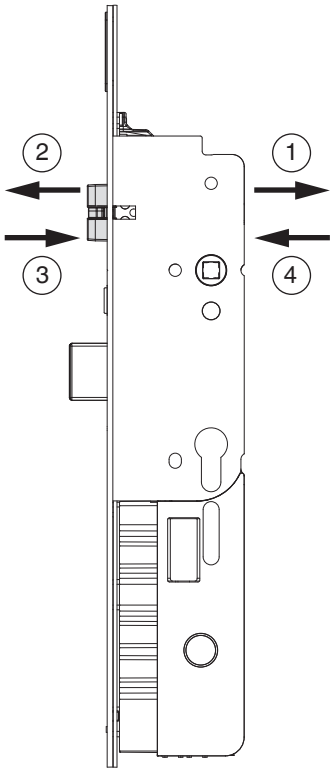
Do not lock the locking bar when the door is open!

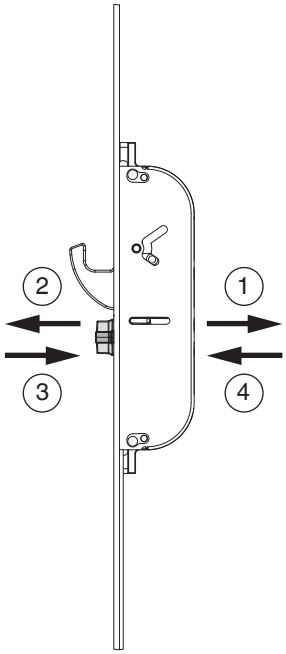
# 8. Latch adjustment




**a** = Faceplate
**b** = Faceplate recess
**c** = Latch
**d** = Latch insert
**e** = Insert leg




① Loosen the screw completely and press forward with a screwdriver!

② Remove the latch!

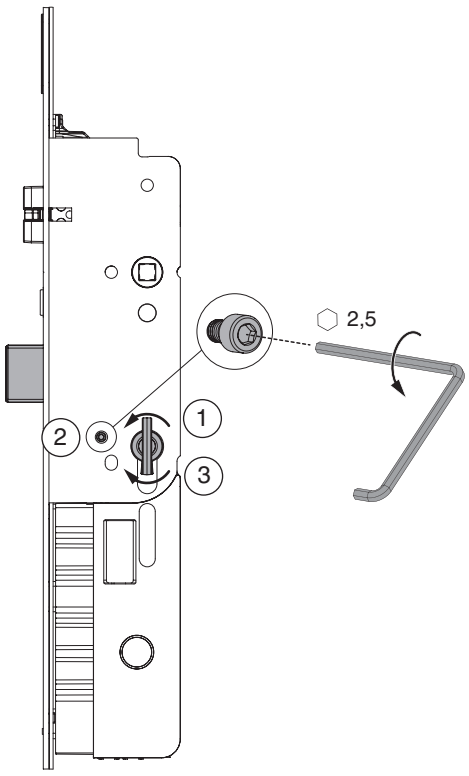
③ Turn the latch over and place it on the faceplate (**a**) so that you can press the insert leg (**e**) of the latch insert (**d**) under the faceplate recess (**b**).

④ Only then press the latch in completely! Screw in (torque min. 1.5 Nm to max. 2 Nm)!

**Perform functional check!**

# 9. Installation Instructions

## 9.1 Set lock for day release function (assembler)




**Set day release function**

① Lock

② Remove the day release screw

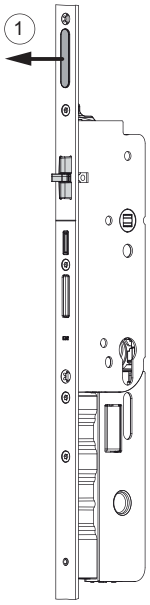
③ Unlock

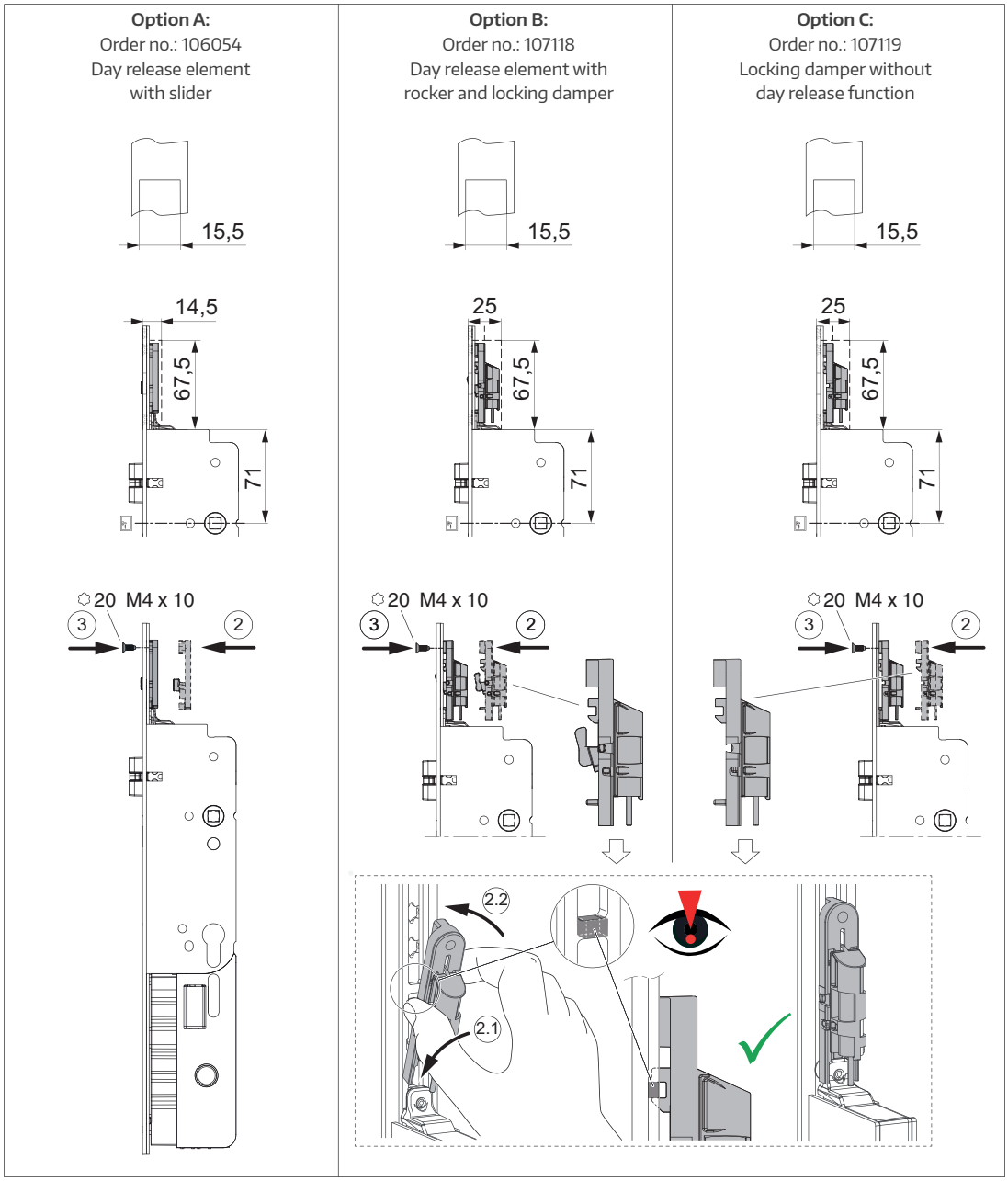
**If the day release function is set, the main latch is not actuated during motorised operation (door does not automatically jump open)!**
**Use the day release opener for day-release unlocking (see page 22)!**

## 9.2 Day release element / locking damper on the lock (assembler)

**Routing patterns**

**Assembly**



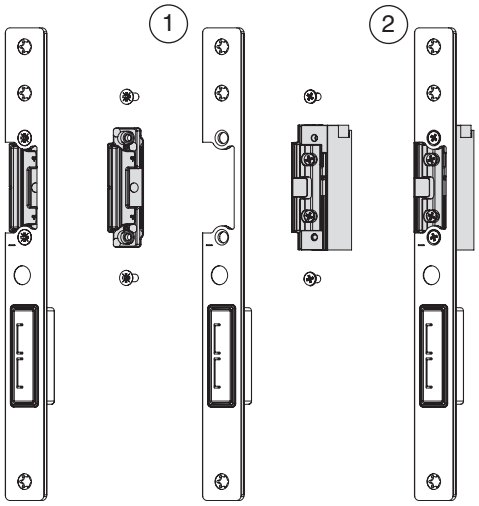




(1) Remove the faceplate cover.

(2) Position the day release element/locking damper on the back of the faceplate (directly on the latch above the lock case).

(3) Screw on the day release element/locking damper with the attached screw on the front of the faceplate!

## 9.3 MACO day release opener assembly on the striker plate (assembler)



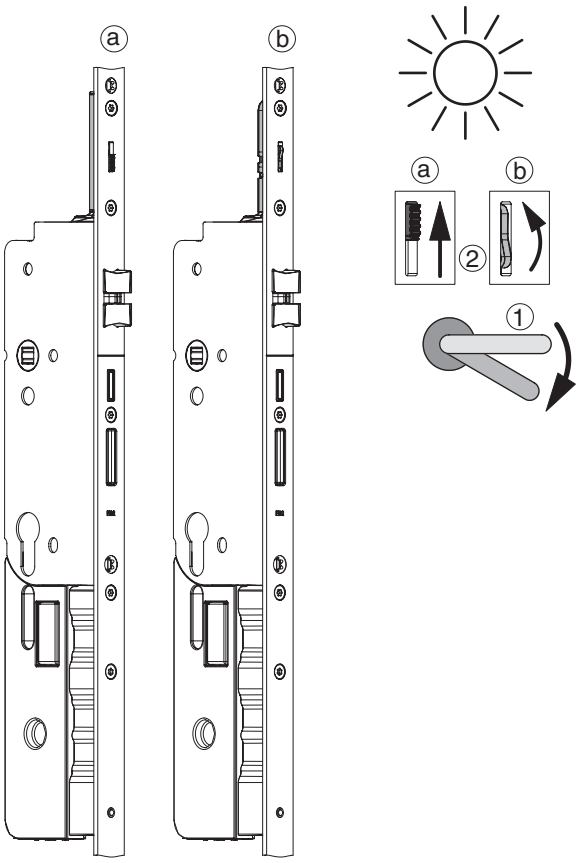

① Remove the latch insert.

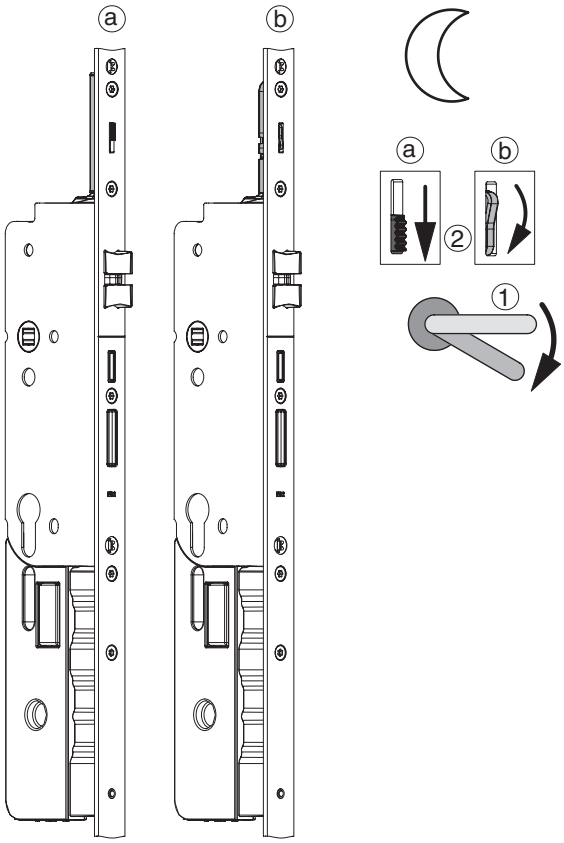
② Assemble the MACO day release opener with permanent opening.

**When using a day release opener, a latch with a latch clip must be used.**
**When using a day release opener with a narrow profile a recessed latch must be used with latch clips.**

Circuit Diagram toggle switch (motorised day release) see page 43.

## 9.4 Day release function user manual (end customer)




**Activate day release function**

(1) Press the handle so that the locking element and the multifunction latch are pulled in!

(2) (a) Slide the day release slider upwards, release the handle!

(b) Push the day release rocker upwards, release the handle!

Day release activated – During this mode of operation, the door is not locked and can be used at any time by all persons!

**Deactivate day release feature**

(1) Press the handle so that the locking element and the multifunction latch are pulled in!

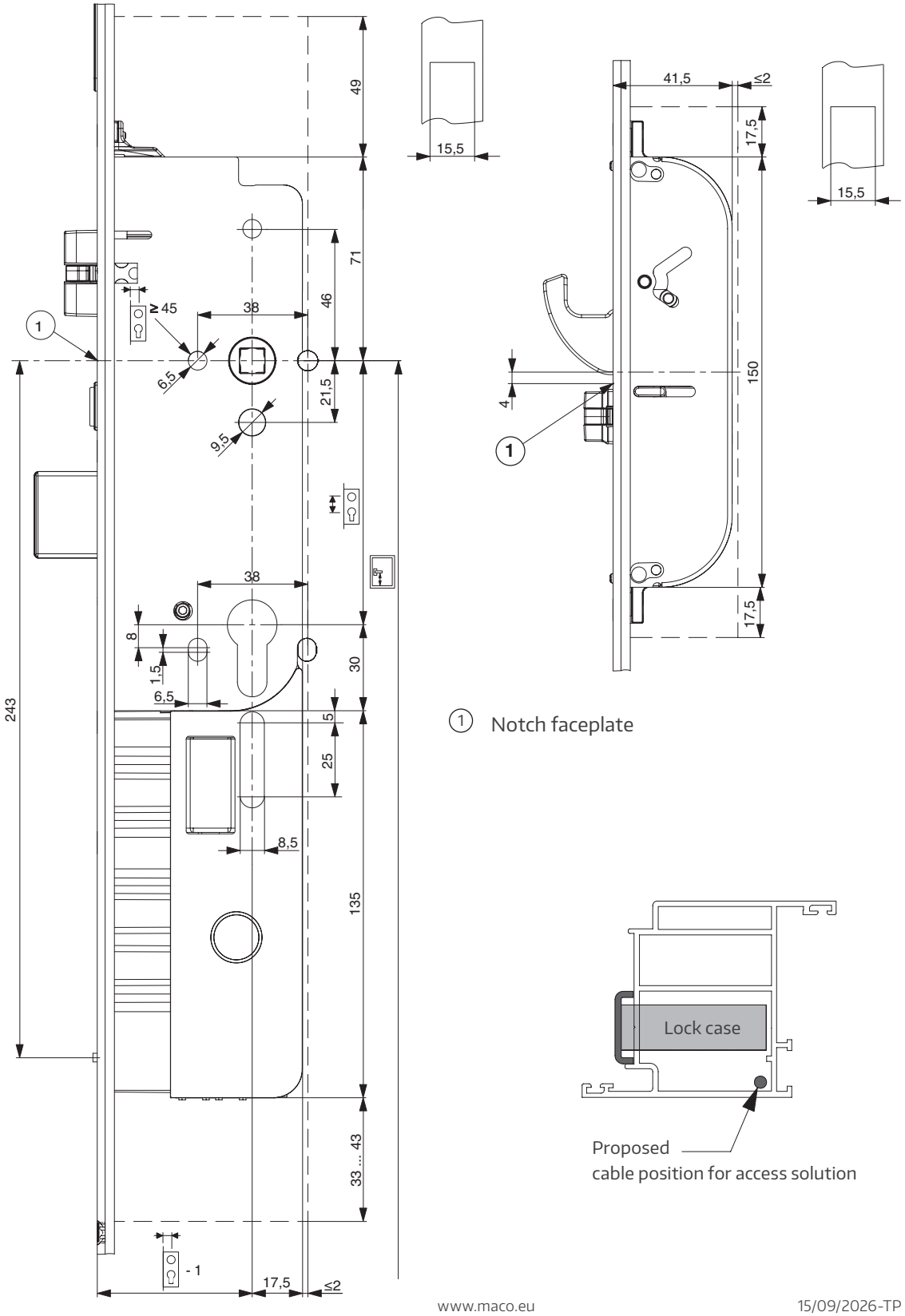
(2) (a) Slide the day release slider downwards!

(b) Push the day release rocker downwards!

The M-TS basic function is restored.

# 10. Drilling and routing patterns

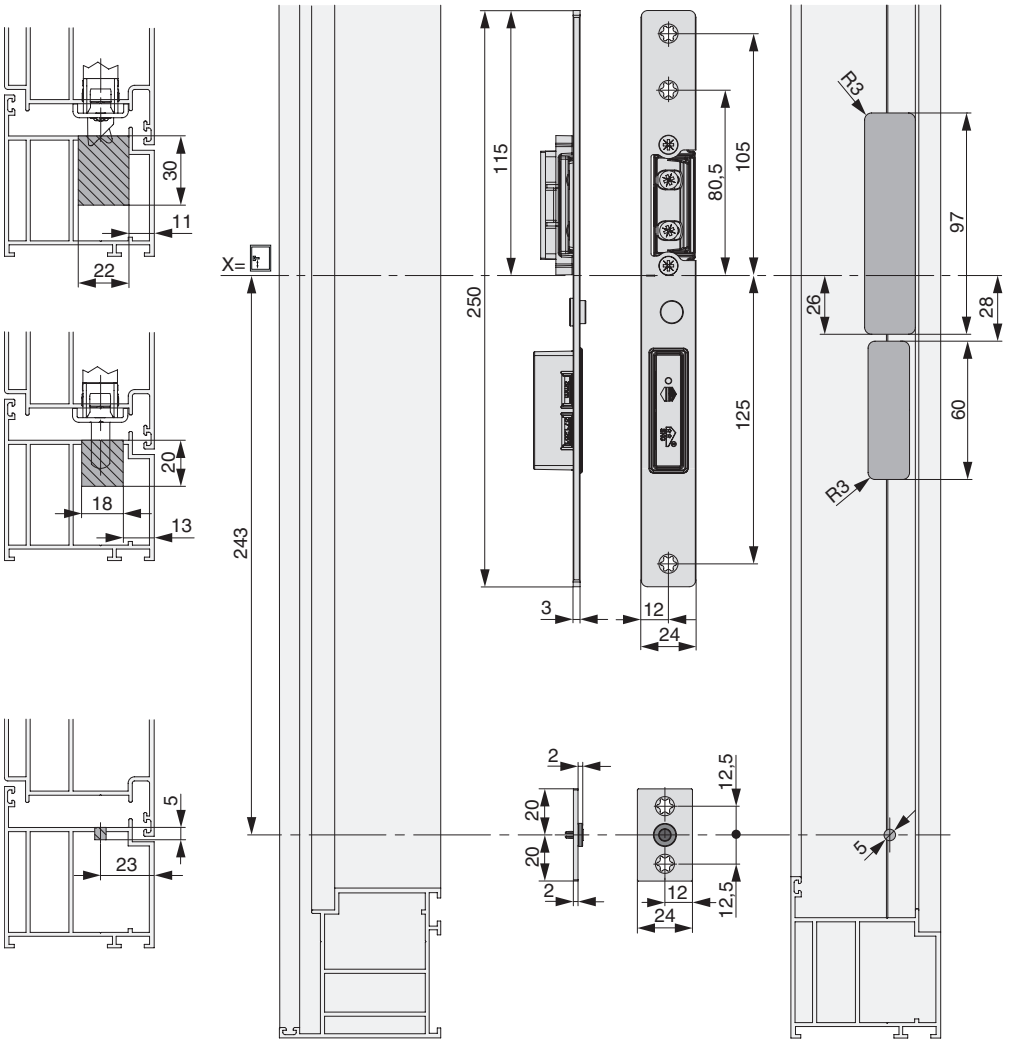
## 10.1 Lock case and multifunction latch with hook lock




① Notch faceplate

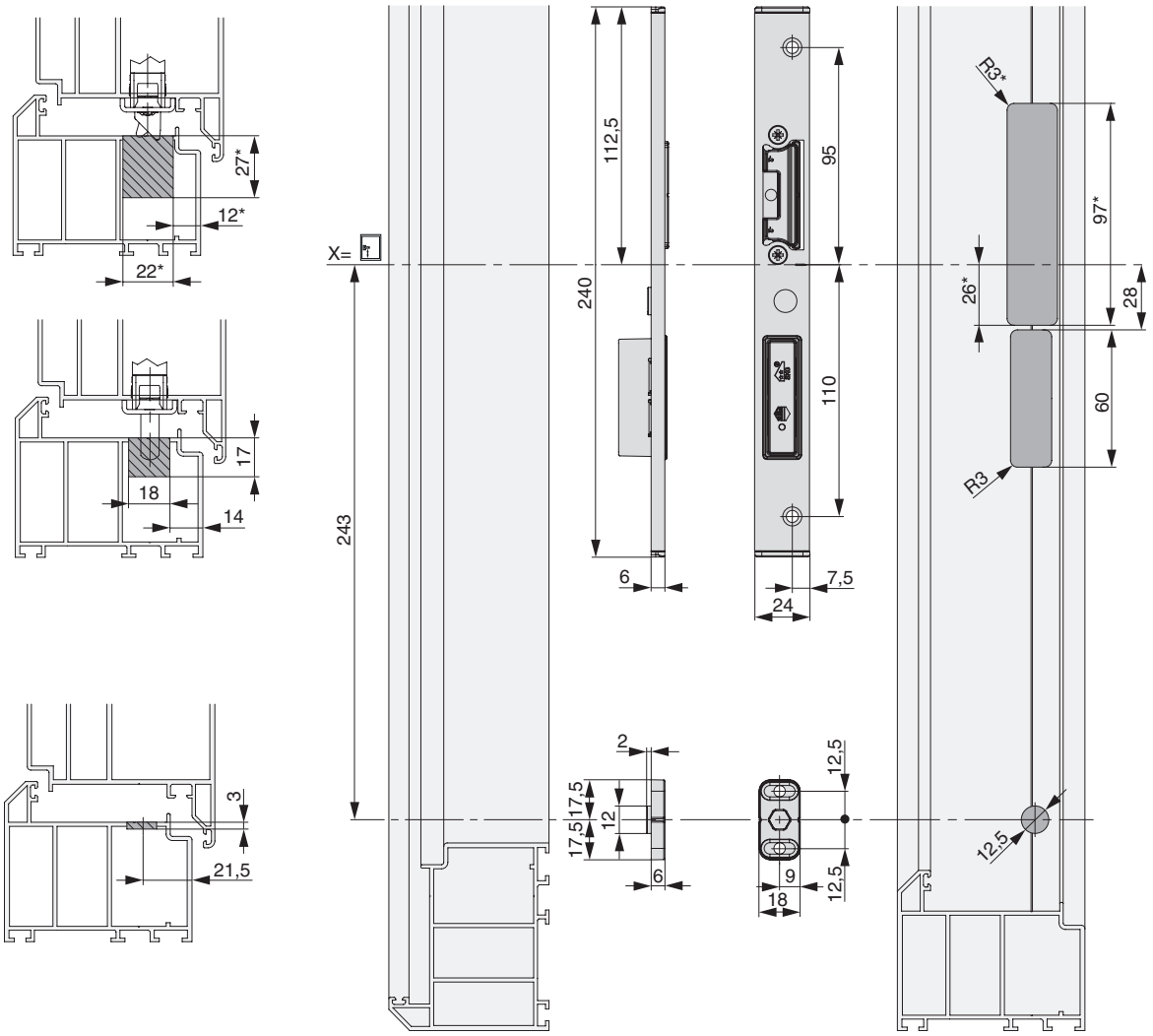
# Drilling and routing patterns

## 10.2 Latch and dead bolt striker plate 3 mm



# Drilling and routing patterns

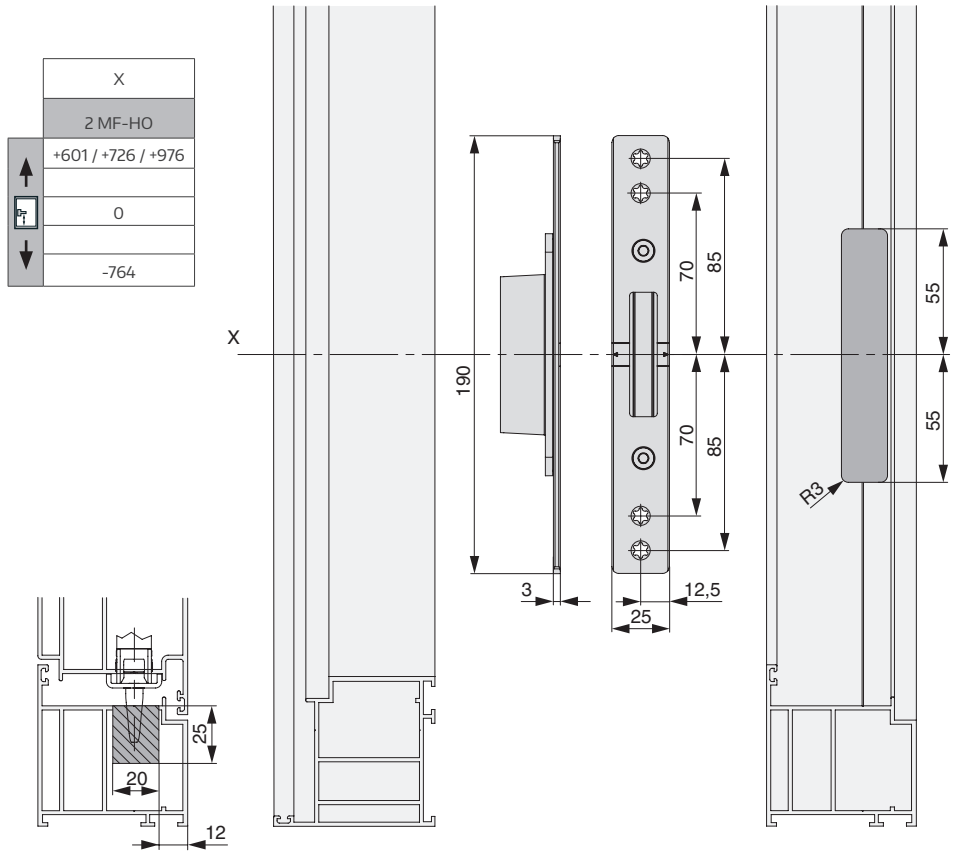
## 10.3 Latch and dead bolt striker plate 6 mm




*Routing pattern day release opener

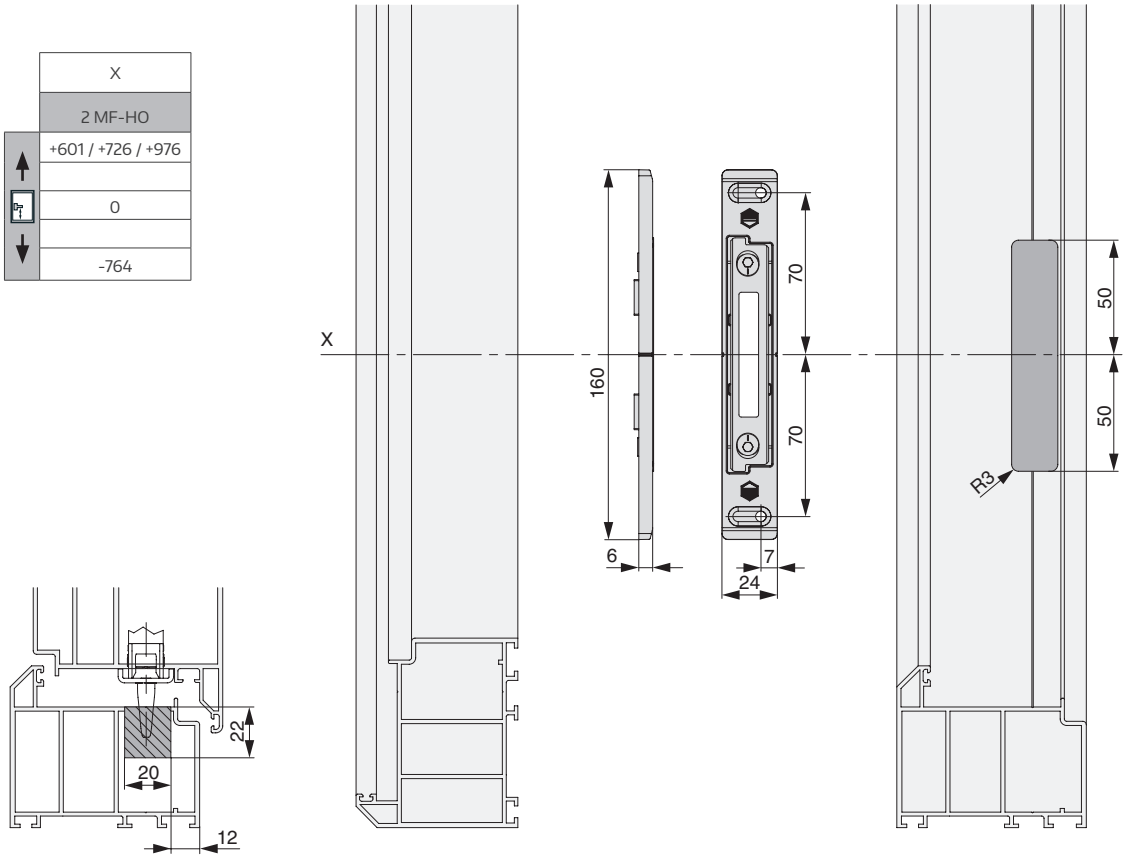
# Drilling and routing patterns

## 10.4 Multifunction hook striker plate 3 mm



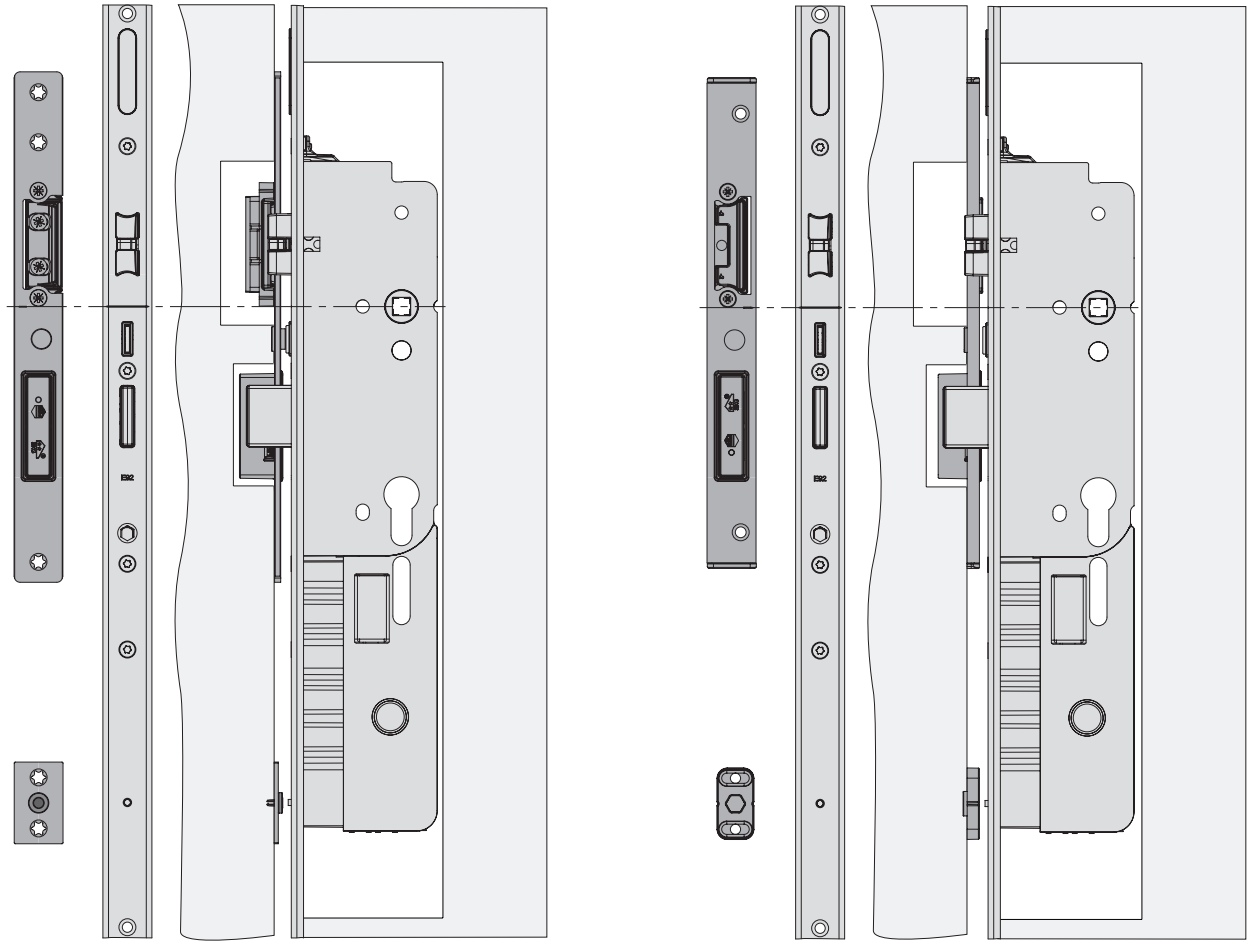
# Drilling and routing patterns

## 10.5 Multifunction hook striker plate 6 mm



# 11. Positioning of the striker plates

## 11.1 Latch and dead bolt striker plate



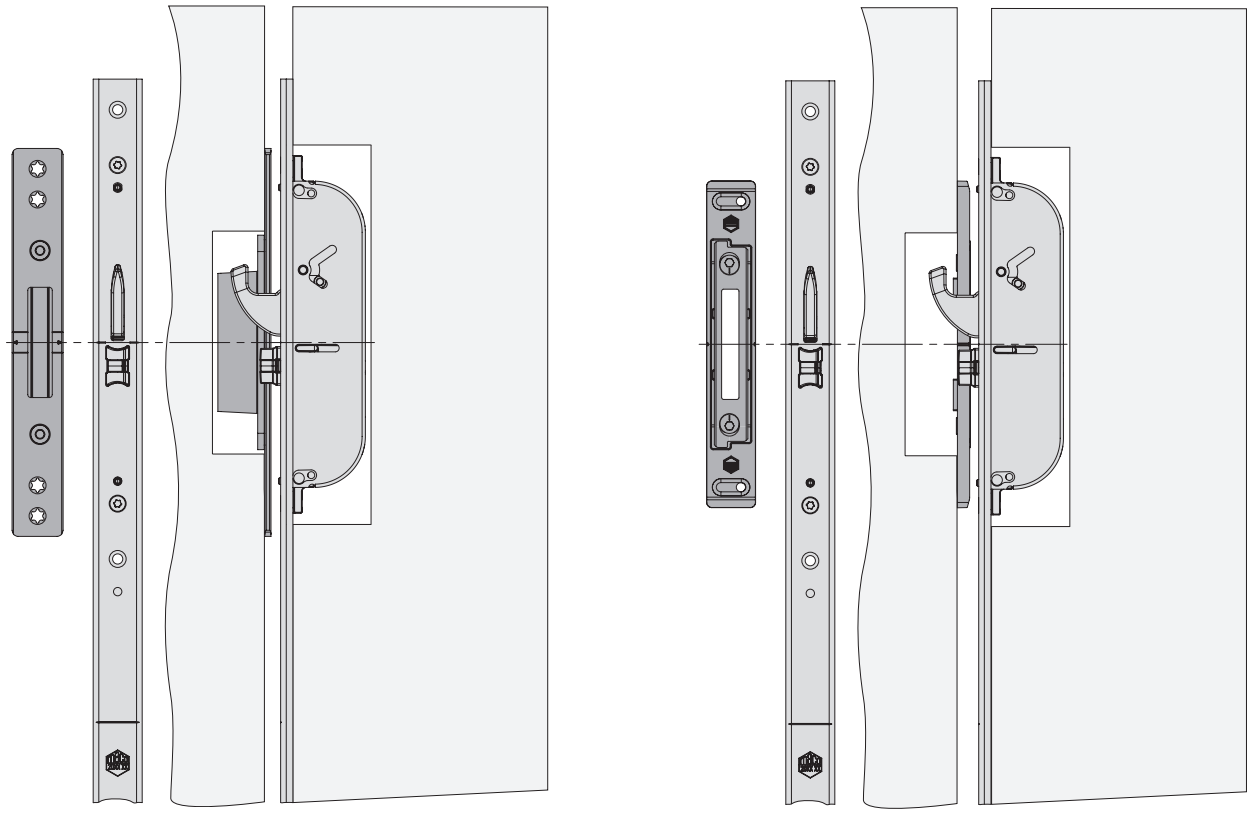
**Gasket compression adjustment:**
+/- 2 mm with latch and dead bolt striker plate

Positioning of notch faceplate = notch strike plate

**A rebate gap of 2 - 6 mm must be kept in the installed state!**

# Positioning of the striker plates

## 11.2 Multifunction hook striker plate



**Gasket compression adjustment:**
+/- 1.5 mm with MF-HO striker plate

Positioning of notch faceplate = notch strike plate

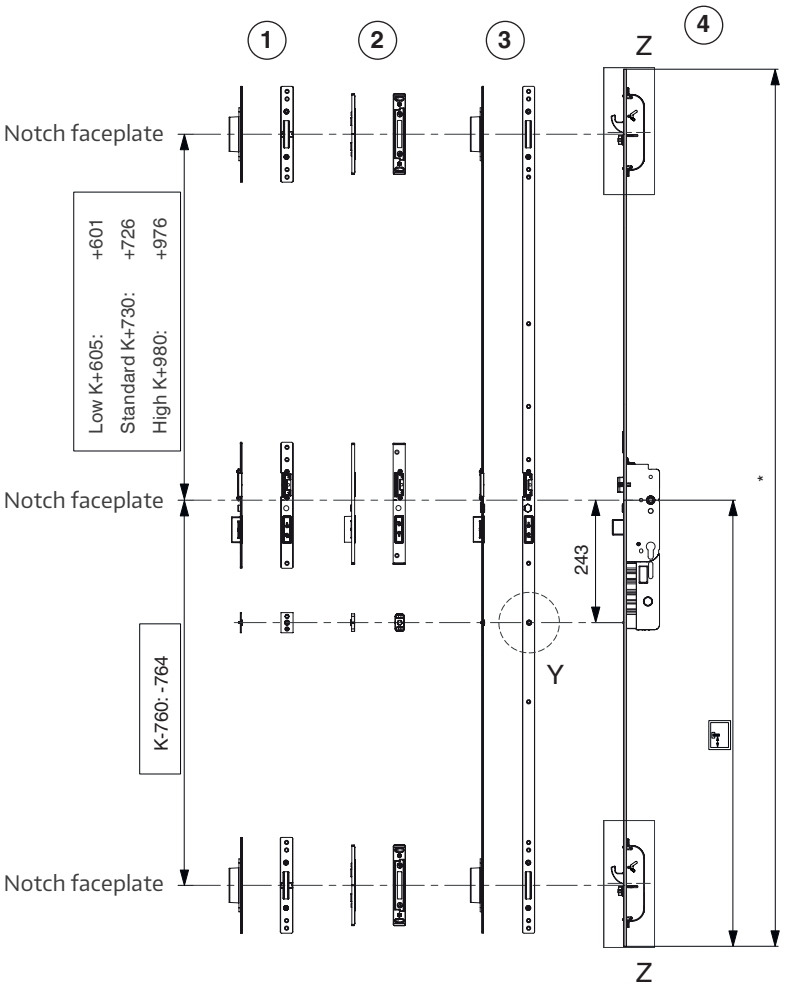
**A rebate gap of 2 - 6 mm must be kept in the installed state!**

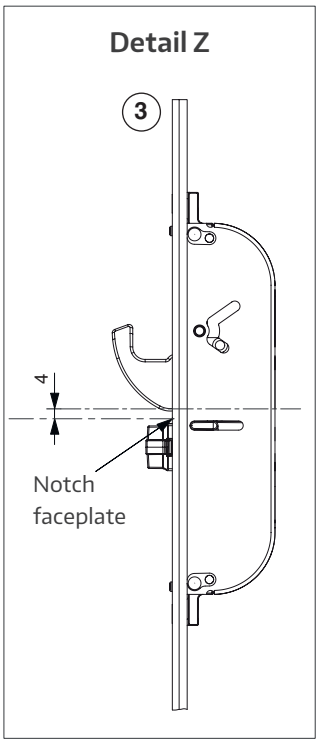
# Positioning of the striker plates

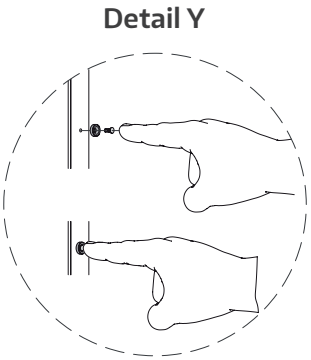
## 11.3 2 multifunction latch with hooks, single sash

① **Single striker plate 3 mm**
② **Single striker plate 6 mm**
③ **Single piece door striker**
④ **Lock**

**Symbolic representation only!**




When using the M-TS motorised lock with the MF-HO striker plate, a 2 mm ring magnet (position 243 mm below the handle height) must be mounted.
Ring magnet incl. PVC pre-cut rivets available as accessories (Art. No. 106144).

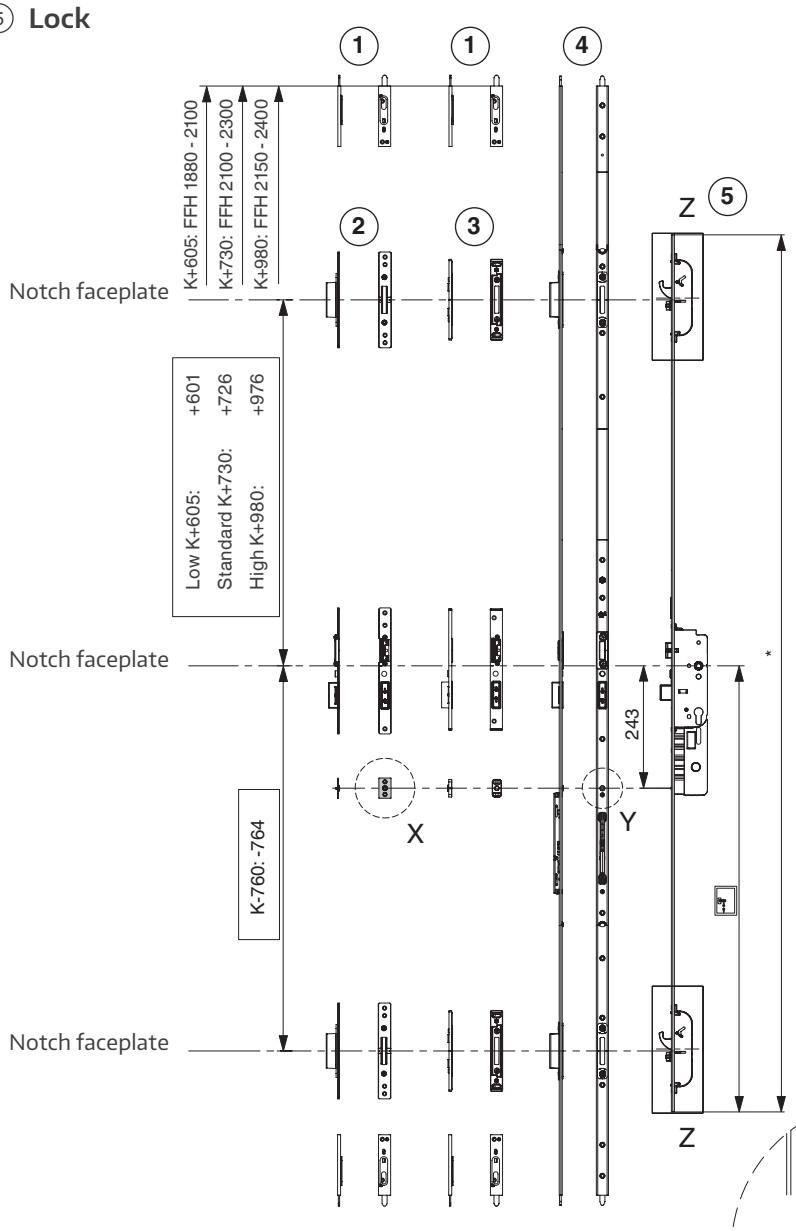
* Use faceplate strip cover for higher FFH!

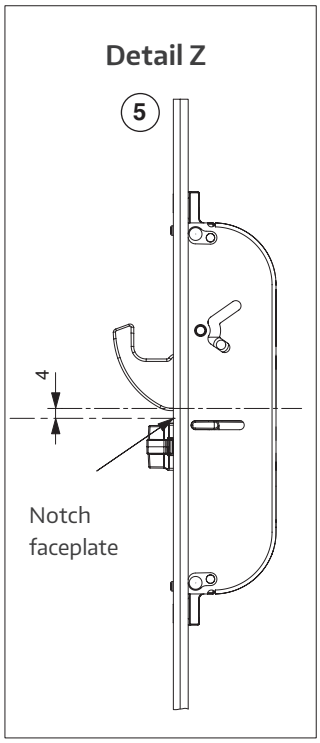
# Positioning of the striker plates

## 11.4 2 multifunction latch with hooks, double sash

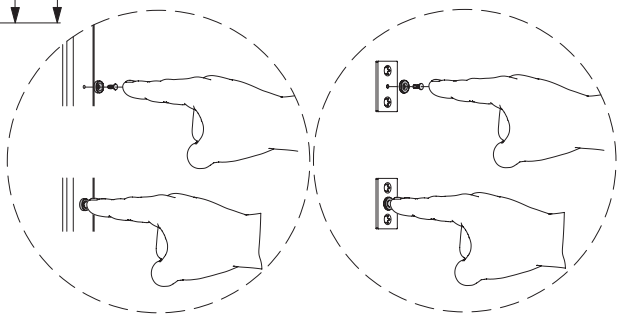
① **Finger operated door shootbolt**
② **Single striker plate 3 mm**
③ **Single striker plate 6 mm**
④ **French casement drive gear (see installation instructions 760309)**
⑤ **Lock**

**Symbolic representation only!**




When using the M-TS motorised lock with the modular face plate sash mechanism, a 2 mm ring magnet (position 243 mm below the handle height) must be mounted.
Ring magnet incl. PVC pre-cut rivets available as accessories (Art. No. 106144).




* Use faceplate strip cover for higher FFH!

# 12. Access solutions & interfaces

## 12.1 Overview

① **M-TS motorised lock with 3-latch technology**
Optimum gasket compression thanks to 3 latches and motorised locking of the steel hooks and the locking bolt.

② **Tamper-proof**
Control unit protected from unauthorised access.

③ Maximum comfort and safety thanks to **motorised locking and unlocking.**

④ **Plug & Play**
Simple, non-mistakable plug-in connection.

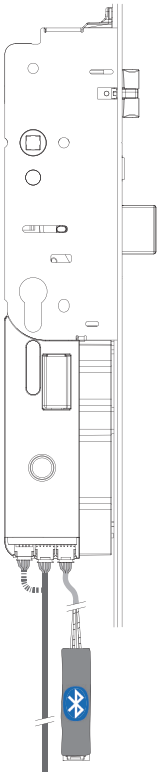
⑤ **EASY mounting and de-mounting** of the door thanks to plug-in cable transition.

⑥ **openDoor Touchkey dLine**

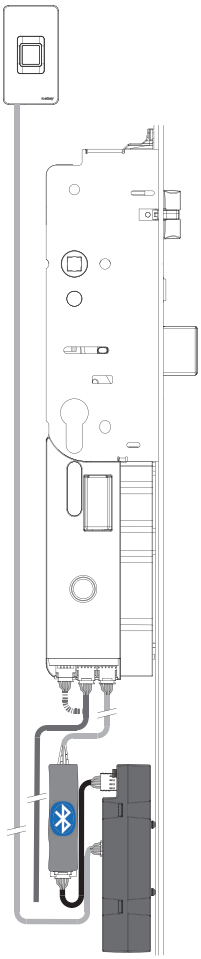


## 12.2 Connection options BLE module for control via MACO SMARTPHONE APP

**Option 1:**
Connection to a free slot on the motor



**Option 2:**
Connection between access control and motor









The INSTINCT App is available free of charge for iOS and Android.
It is easy to install, activate with the admin card QR code and off you go.
No complicated web-based programming is required.

Download on the App Store

GET IT ON Google Play

## 12.3 Keypad

### Cable installation - cable transition

**Plug & Play connection motor to:**

Ⓐ **Cable transition**

Ⓑ **Access Solution**

Ⓒ **Power supply****

Ⓓ **Loop for tension release**

**Plug & Play connector / cable installation**

① Brown: motor operating voltage minus -

② White: motor operating voltage plus +

③ Green: control voltage* minus -

④ Yellow: control voltage* plus +
(③ + ④ Potential-free input)

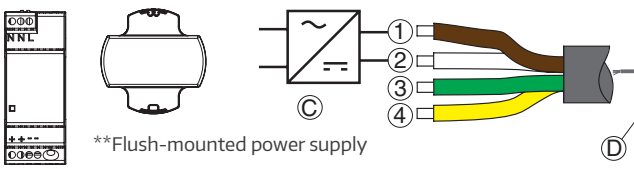
*The control voltage is required for switch (switch impulse) and toggle switch (Day Release activation/deactivation)!
See page 42/43.

In order to avoid damage to the cables, drilling/milling must be deburred!

**WARNING**

**Danger to life due to electrical voltage!**

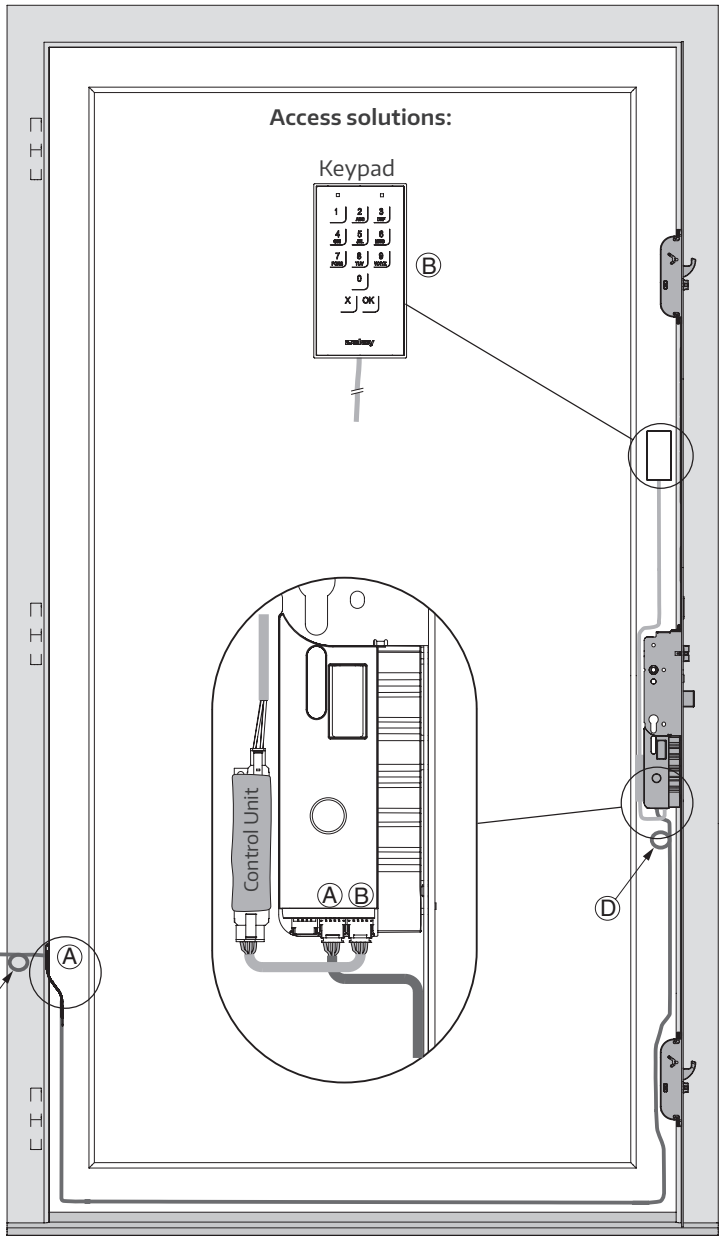
**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**




**Flush-mounted power supply

**DIN rail power supply

**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.



## 12.4 Keypad (locking monitoring)

### Cable installation - cable transition for locking monitoring

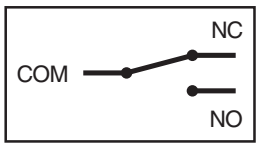
**Plug & Play connection motor to:**

- Ⓐ **Cable transition**
- Ⓑ **Access solution**
- Ⓔ **Locking monitoring**
- Ⓒ **Power supply****
- Ⓓ **Loop for tension release**

**Plug & Play connector / cable installation:**

1. Brown: motor operating voltage minus -
2. White: motor operating voltage plus +
3. Green: control voltage* minus -
4. Yellow: control voltage* plus + (③ + ④ Potential-free input)
5. Blue COM
6. Red NO

} Output e.g. for alarm systems



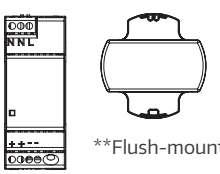

(NC not implemented/ not occupied)

*The control voltage is required for switch (switch impulse) and toggle switch (Day Release activation/deactivation)!
See pages 42/43.

**WARNING**

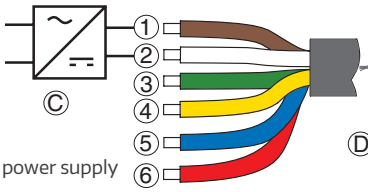
**Danger to life due to electrical voltage!**

**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**



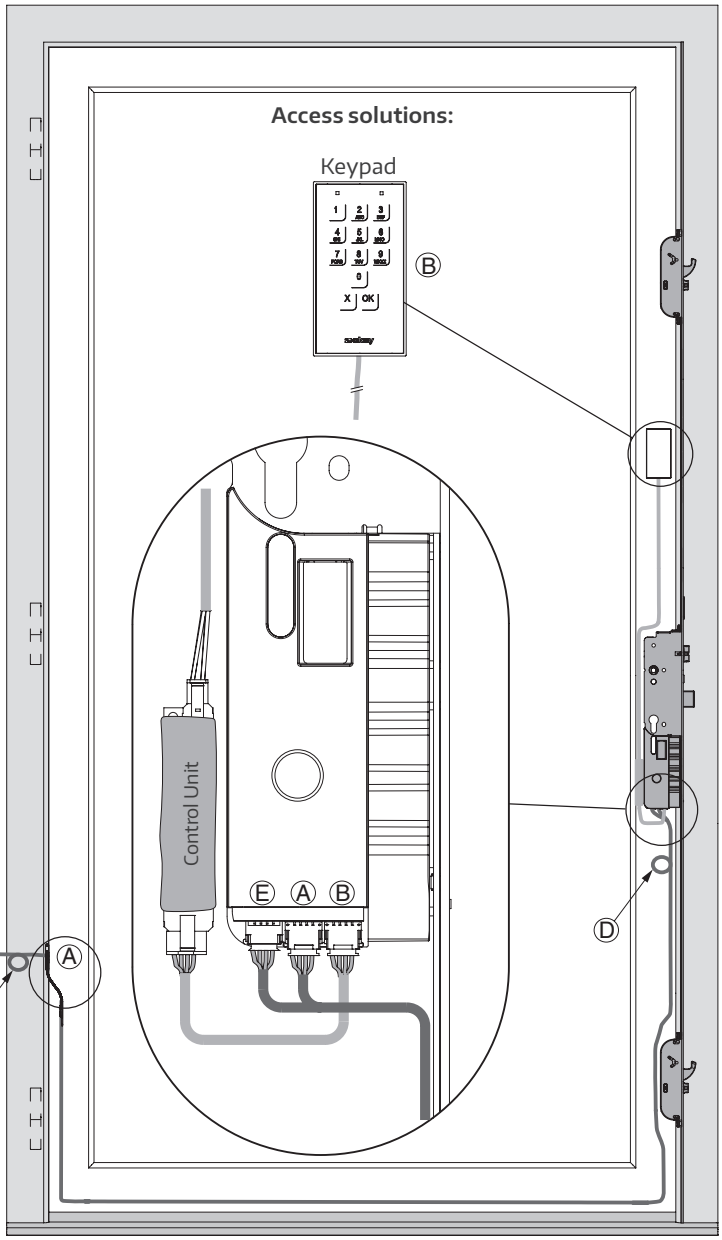


**Flush-mounted power supply




**DIN rail power supply

**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.



# Access solutions & interfaces

## 12.5 Touchkey dLine

### Cable installation - cable transition

**Plug & Play connection motor to:**

Ⓐ **Cable transition**

Ⓑ **Access solution**

Ⓒ **Power supply****

Ⓓ **Loop for tension release**

**Plug & Play connector / cable installation:**

① Brown: motor operating voltage minus -

② White: motor operating voltage plus +

③ Green: control voltage* minus -

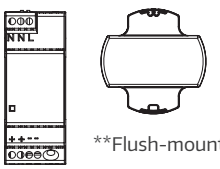
④ Yellow: control voltage* plus +
(③ + ④ Potential-free input)

*The control voltage is required for switch (switch impulse) and toggle switch (Day Release activation/deactivation)!
See pages 42/43.

**WARNING**

**Danger to life due to electrical voltage!**

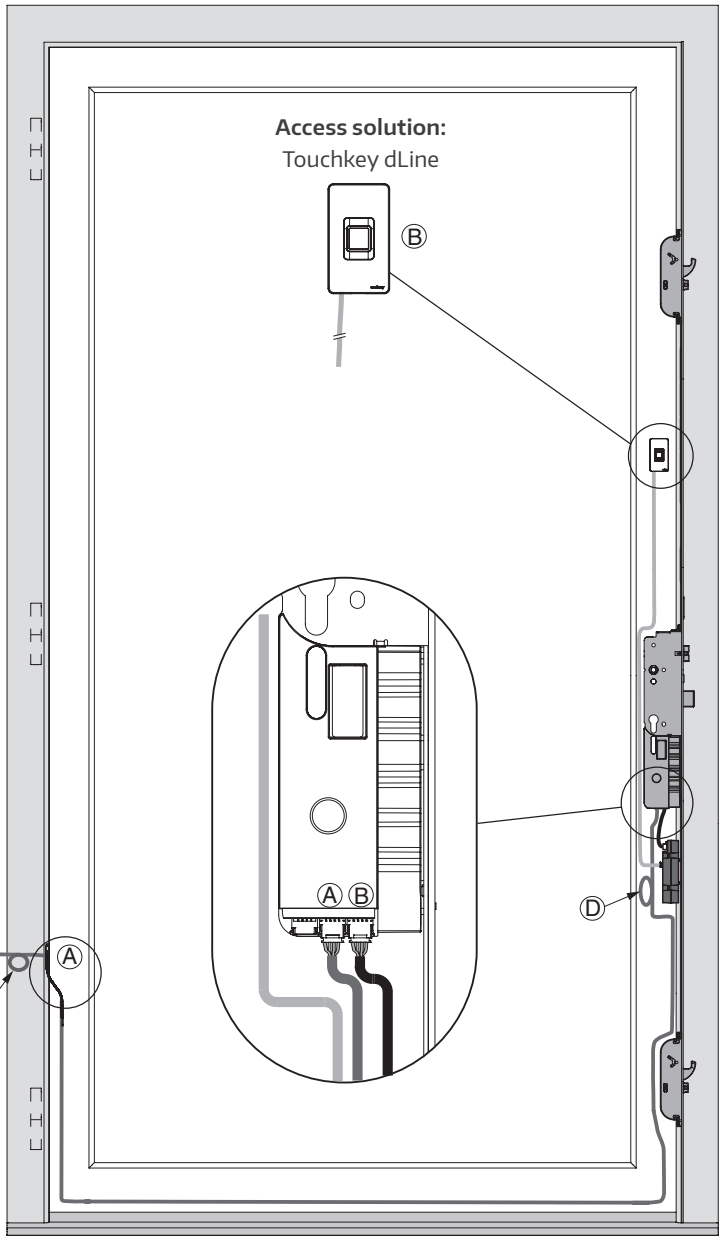
**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**



**Flush-mounted power supply

**DIN rail power supply

**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.



## 12.6 Touchkey dLine (Hinge side)

### Cable installation - cable transition

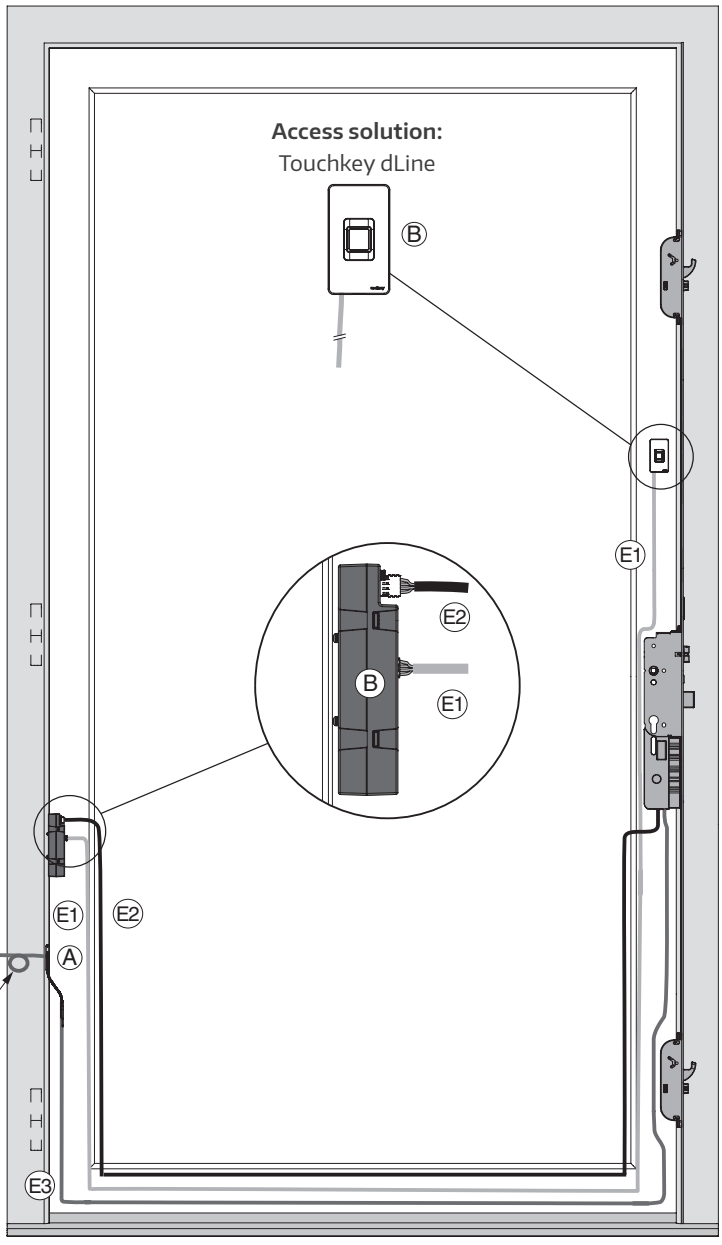
**Plug & Play connection motor to:**

- Ⓐ **Cable transition**
- Ⓑ **Access solution**
- Ⓒ **Power supply****
- Ⓓ **Loop for tension release**
- Ⓔ1 **Cable controller - Fingerscan**
- Ⓔ2 **Cable controller - Motor**
- Ⓔ3 **Cable transition - Motor**

**Plug & Play connector / cable installation:**

1. Brown: motor operating voltage minus -
2. White: motor operating voltage plus +
3. Green: control voltage* minus -
4. Yellow: control voltage* plus +
   (③ + ④ Potential-free input)

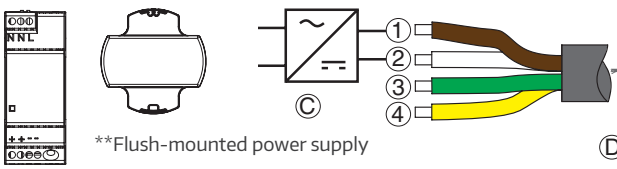
*The control voltage is required for switch (switch impulse) and toggle switch (Day Release activation/deactivation)!
See pages 42/43.




**WARNING**

**Danger to life due to electrical voltage!**

**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**




**Flush-mounted power supply

**DIN rail power supply

**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.

## 12.7 Touchkey dLine (locking monitoring)

### Cable installation - cable transition for locking monitoring

**Plug & Play connection motor to:**

Ⓐ **Cable transition**

Ⓑ **Access solution**

Ⓔ **Locking monitoring**

Ⓒ **Power supply****

Ⓓ **Loop for tension release**

**Plug & Play connector / cable installation:**

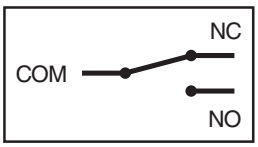
① Brown: motor operating voltage minus -

② White: motor operating voltage plus +

③ Green: control voltage* minus -

④ Yellow: control voltage* plus +
(③ + ④ Potential-free input)

⑤ Blue COM
⑥ Red NO } Output e.g. for alarm systems



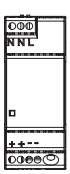

(NC not implemented/ not occupied)

*The control voltage is required for switch (switch impulse) and toggle switch (Day Release activation/deactivation)!
See pages 42/43.

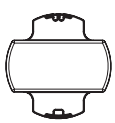
**WARNING**

**Danger to life due to electrical voltage!**

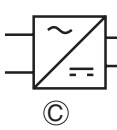
**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**

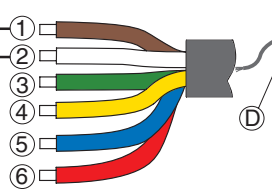


**DIN rail power supply

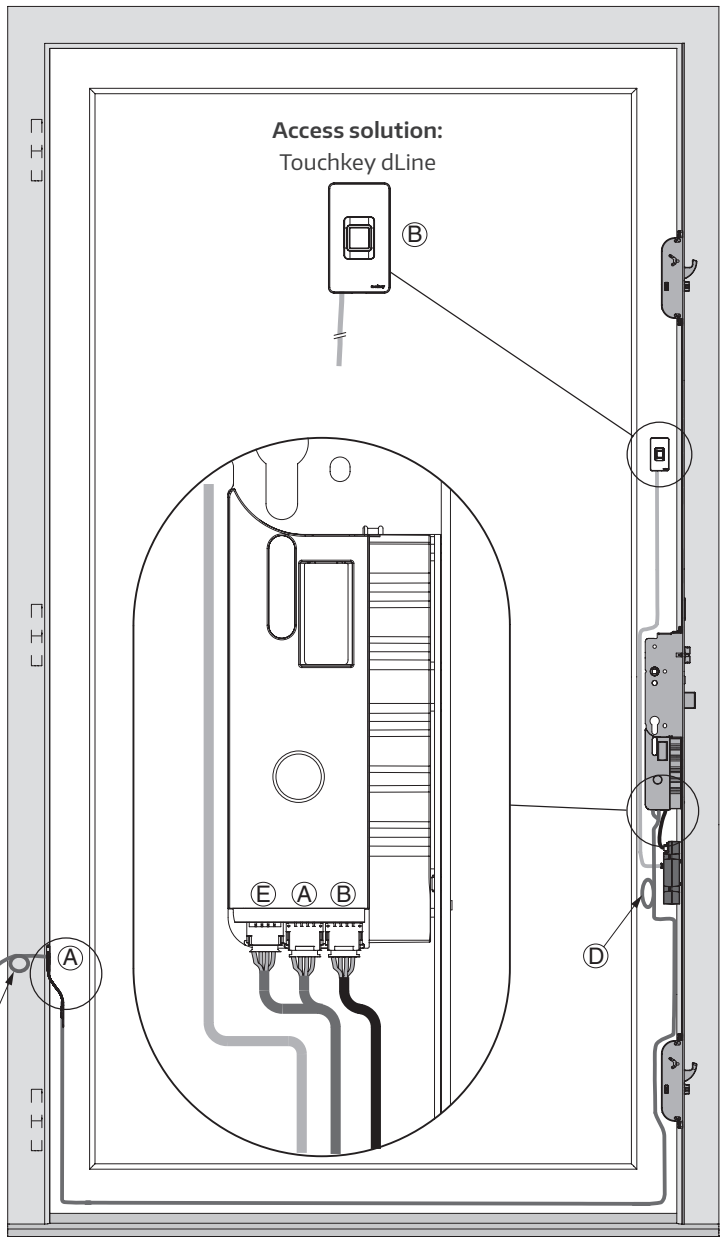


**Flush-mounted power supply




**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.



## 12.8 Plunger contact secureConnect Touchkey dLine

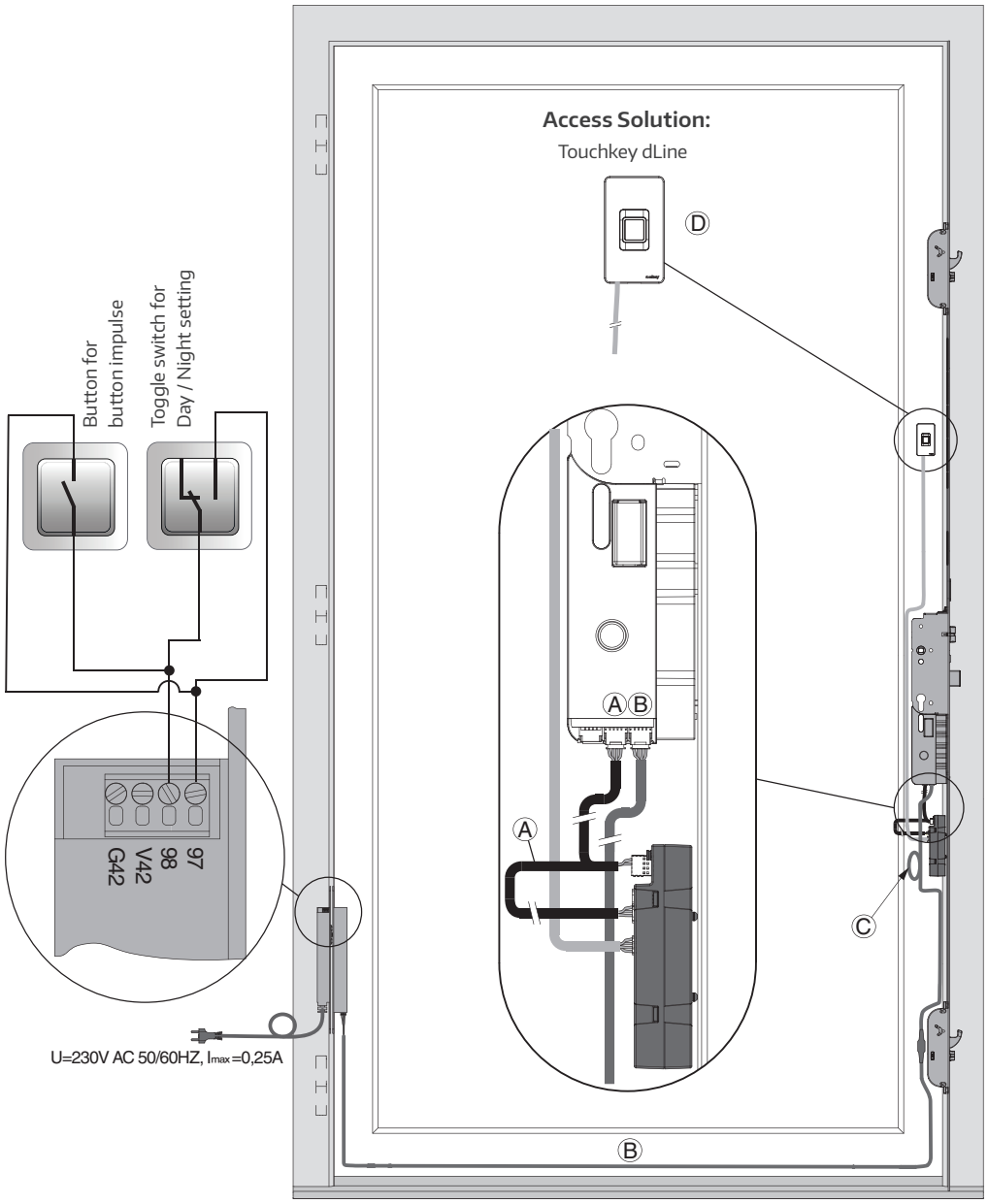
**Plug & Play connection motor to:**

Ⓐ **Adapter cable for motor to dLine control unit (item no. 482148)**

Ⓑ **Adapter cable for plunger contact to motor (item no. 478821)**

Ⓒ **Loop for tension release**

Ⓓ **dLine access control**



## 12.9 Somfy Smart lock controller

### Cable installation - cable transition for lock monitoring

**Plug & Play connection motor to:**

- Ⓐ **Adaptor for plunger contact**
- Ⓑ **Locking monitoring**
- Ⓒ **Power supply****
- Ⓓ **Loop for tension release**

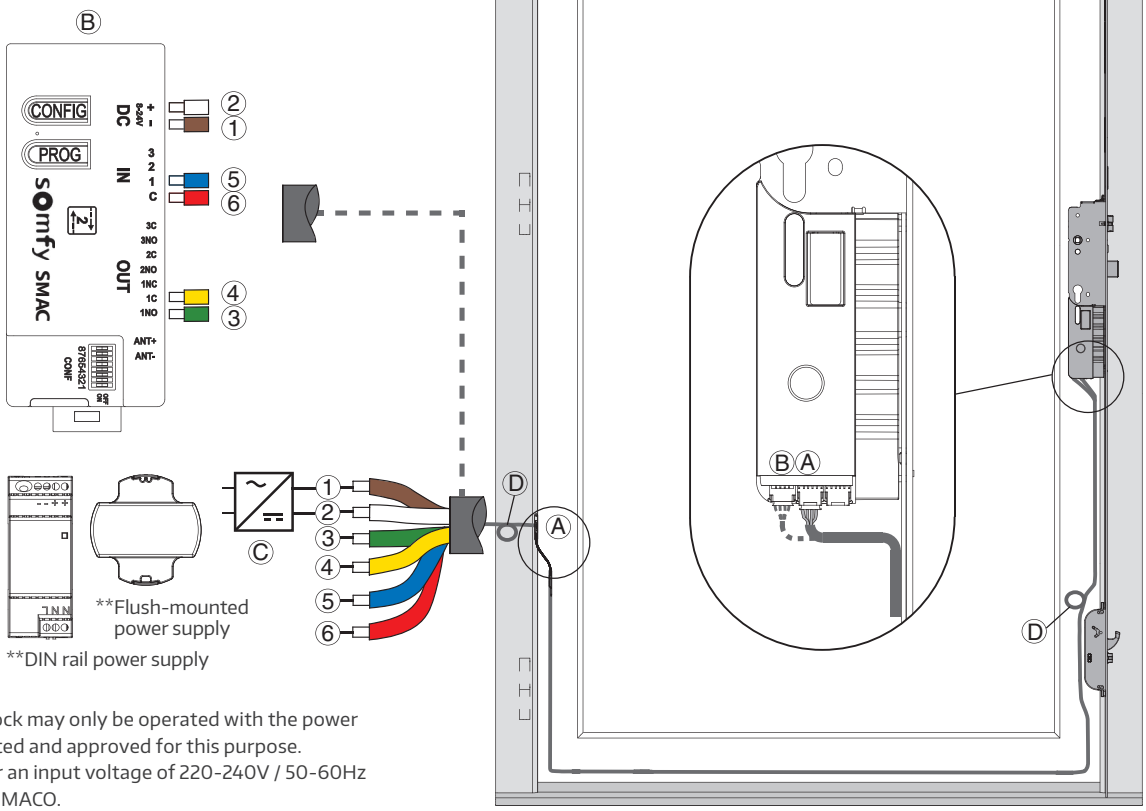
**WARNING**

**Danger to life due to electrical voltage!**

**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**

M-TS without lock monitoring DIP no. 3 = ON,

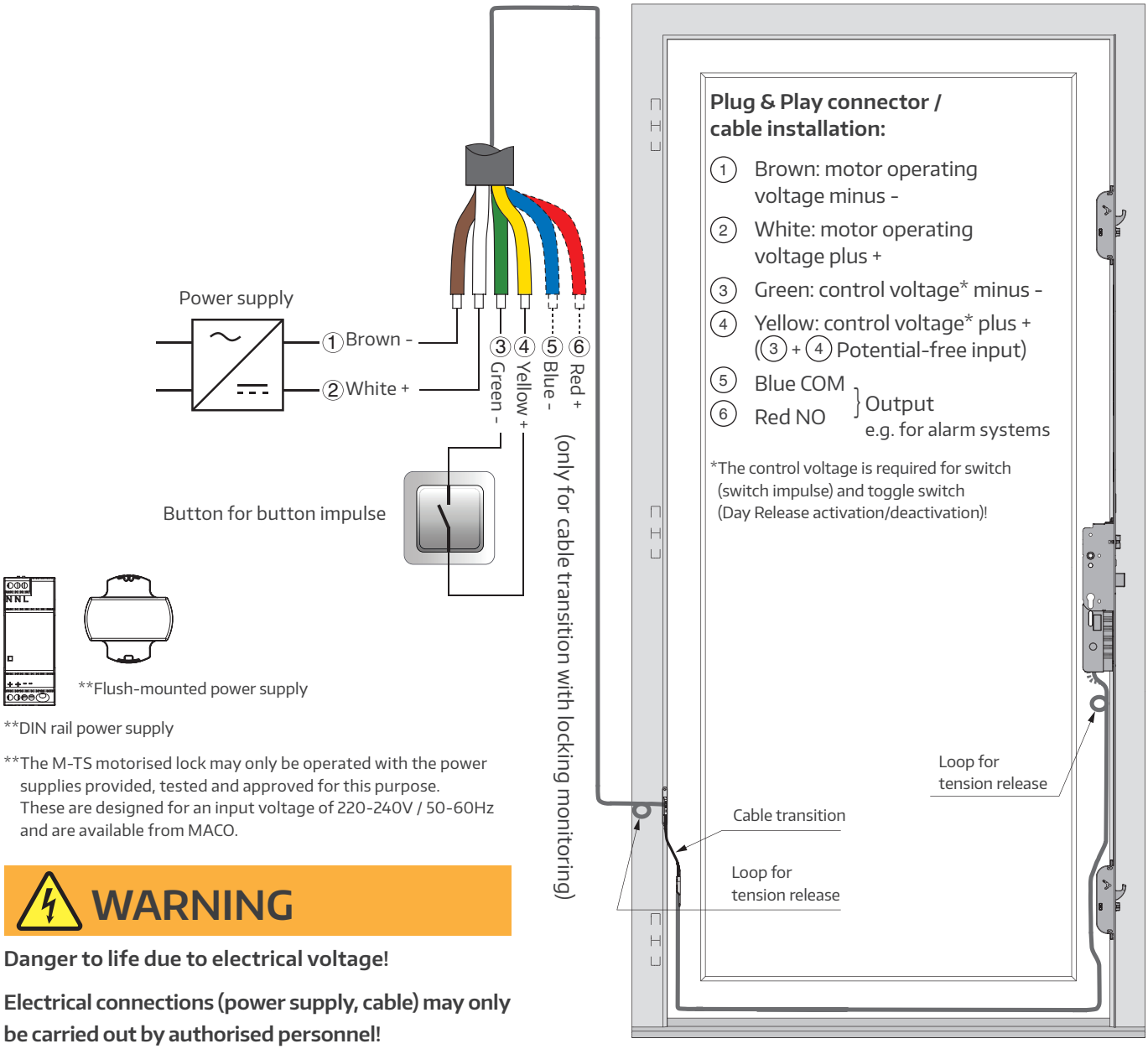
M-TS with lock monitoring DIP no. 3 + 7 = ON




**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.

## 12.10 Circuit diagram button impulse

**Cable transition with locking monitoring or**
**Cable transition**




**Flush-mounted power supply

**DIN rail power supply

**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.

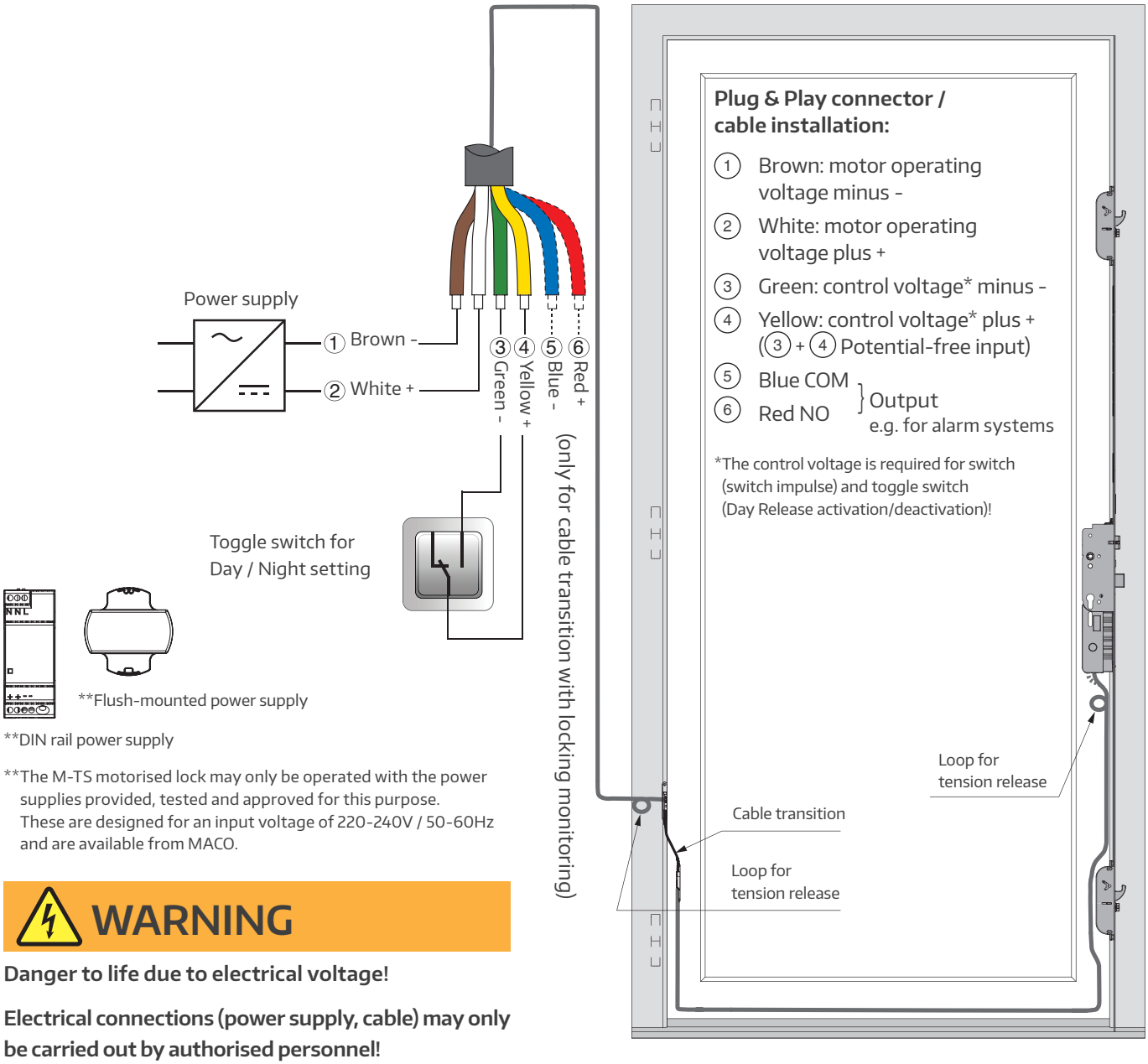
**WARNING**

**Danger to life due to electrical voltage!**

**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**

## 12.11 Circuit diagram toggle switch (motorised day release)

**Cable transition with locking monitoring or cable transition**




**DIN rail power supply

**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240V / 50-60Hz and are available from MACO.

**WARNING**

**Danger to life due to electrical voltage!**

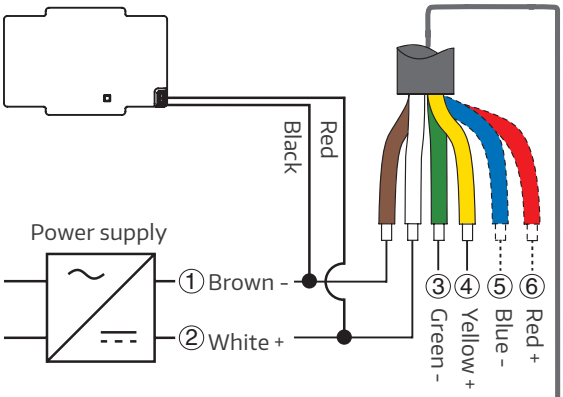
**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**

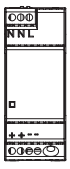
## 12.12 Connection plan UPS (uninterruptible power supply)

The use of the MACO UPS (Art. No. 480987) is recommended by MACO and bridges common, short-term power outages without functional restrictions. The bridging time depends on the actual system configuration. Should the unlikely event occur that a power failure occurs during a motorised opening or closing process, the mechanics may block. With the UPS, the lock moves to the desired position. Without a UPS, the M-TS can be operated manually by means of a key or handle (from the inside) in the event of a power failure in the closed or open state.

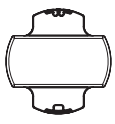
**CAUTION**

For use in buildings where there is a potential danger to life and limb in the event of a power failure, this is mandatory (e.g. multi-party houses, public buildings and the like)!
IMPORTANT! For UPS operation, at least one additional user (BLE module, access control,...) must be connected. Otherwise, the UPS will fall into standby mode and will NOT be active in the event of a power failure.



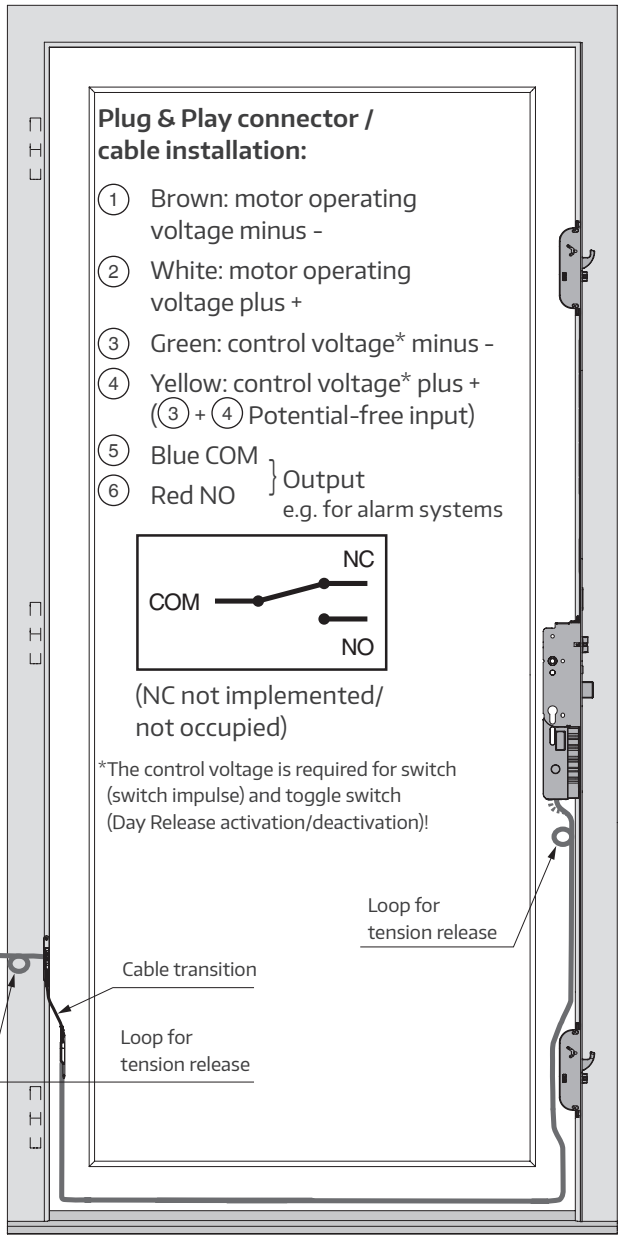



**DIN rail power supply



**Flush-mounted power supply

**The M-TS motorised lock may only be operated with the power supplies provided, tested and approved for this purpose. These are designed for an input voltage of 220-240 V / 50-60 Hz and are available from MACO.

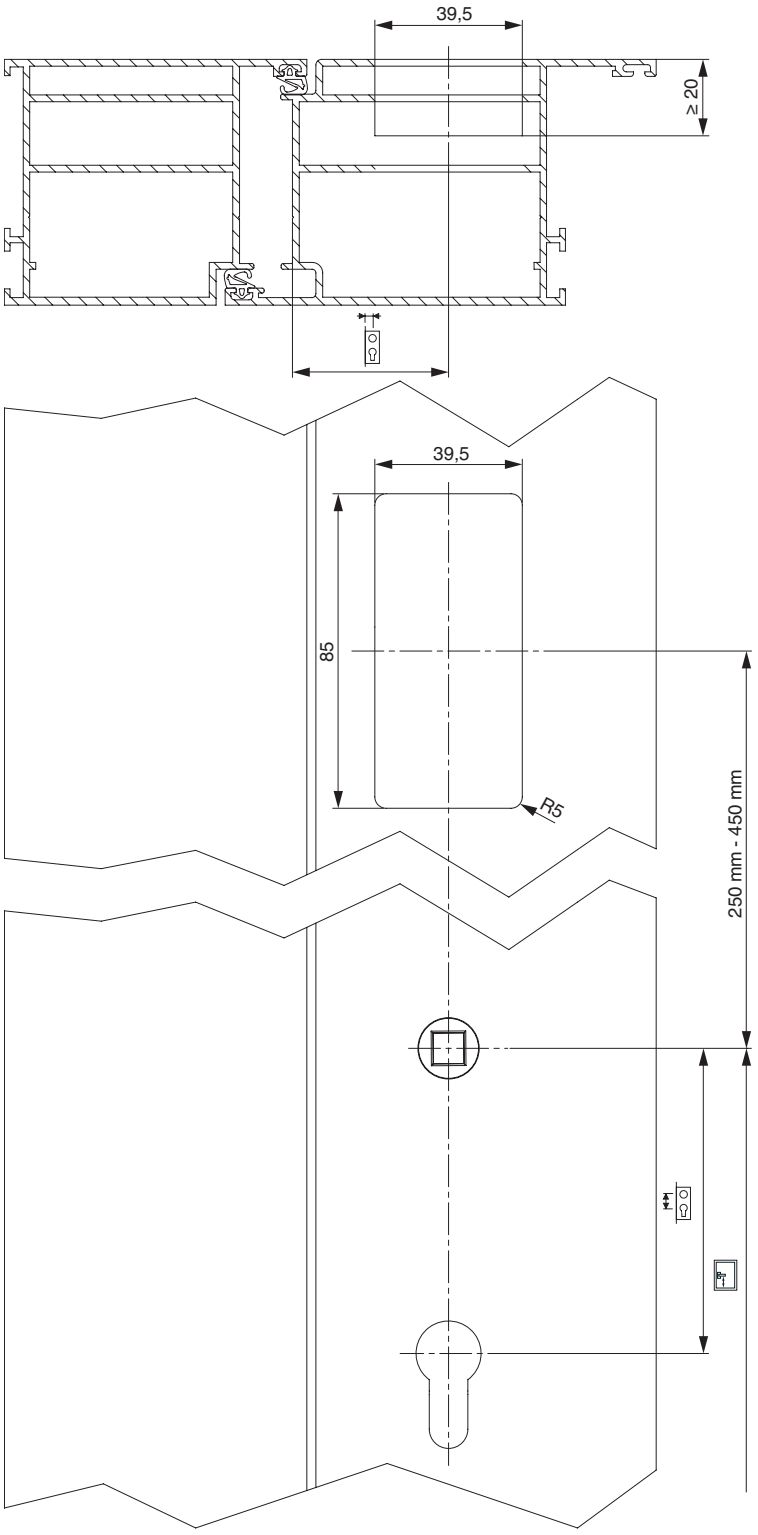



**WARNING**

**Danger to life due to electrical voltage!**

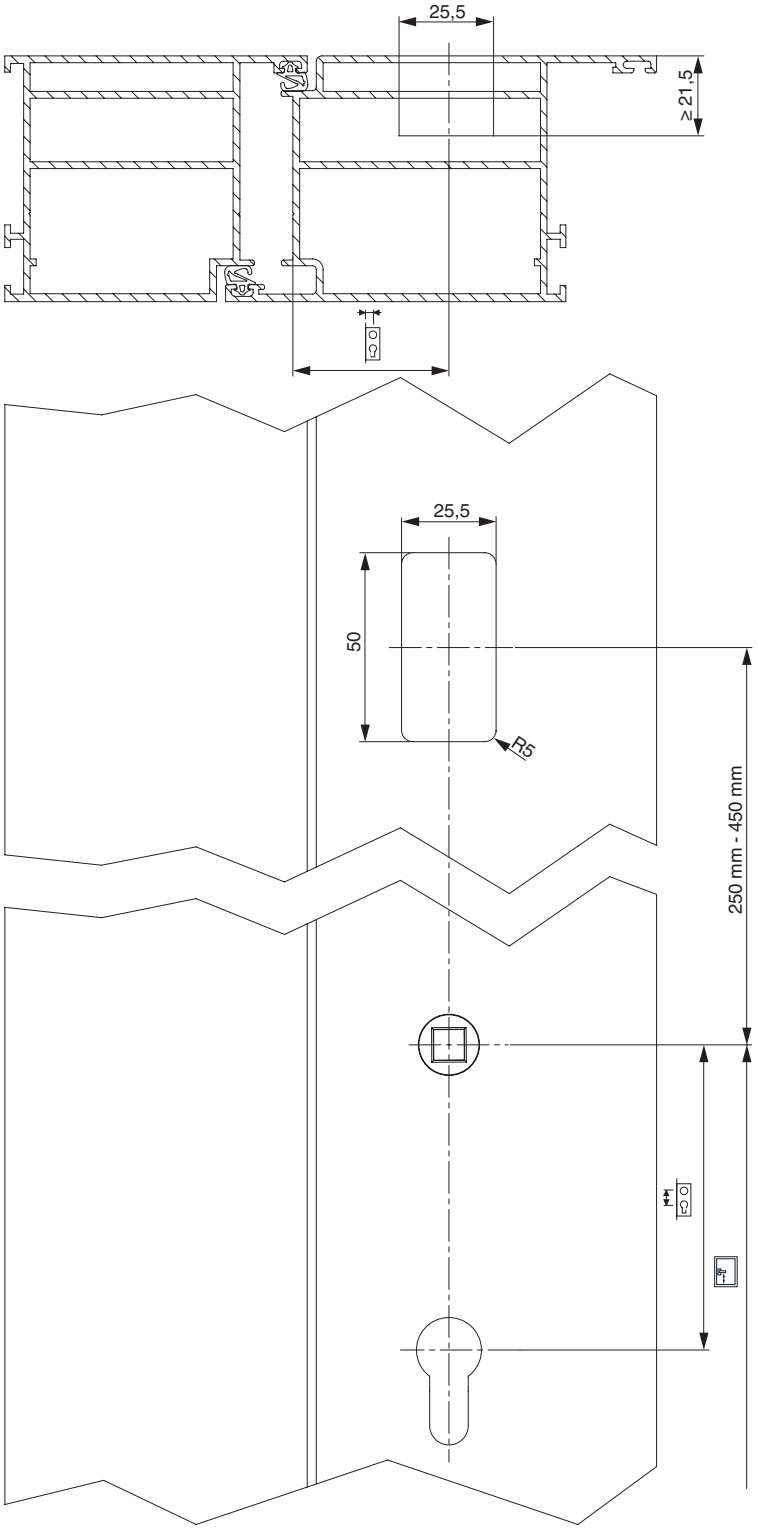
**Electrical connections (power supply, cable) may only be carried out by authorised personnel!**

## 12.13 Routing patterns Keypad

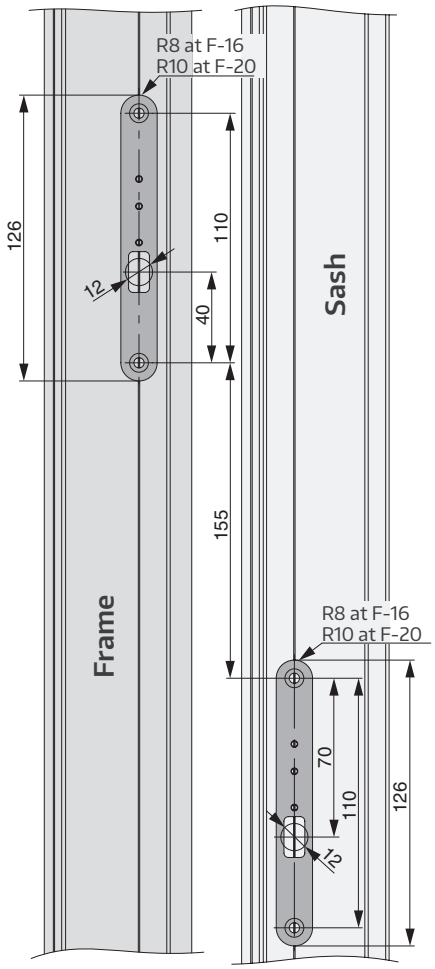


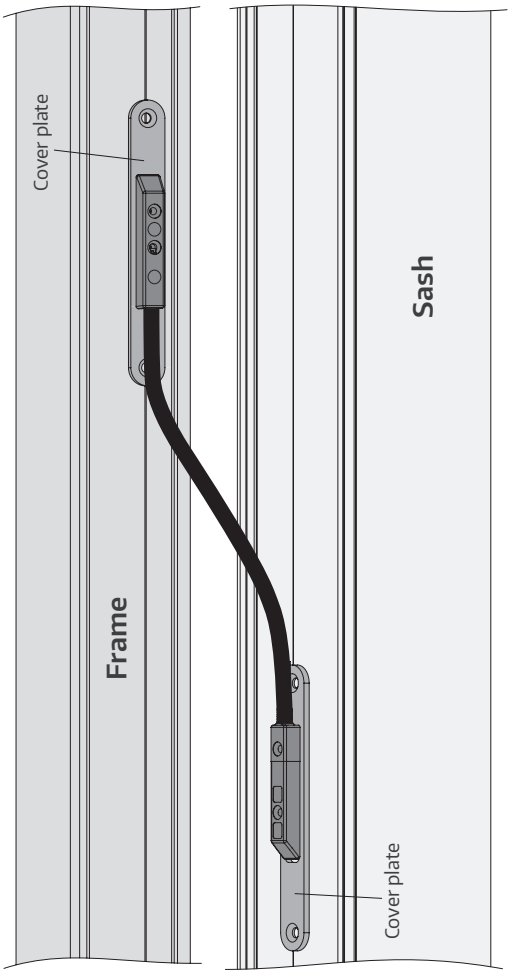
# Access solutions & interfaces

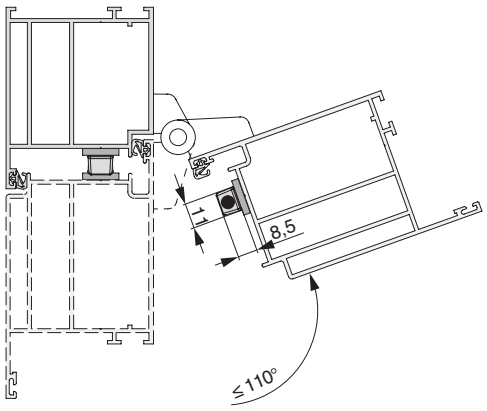
## 12.14 Routing patterns Touchkey dLine



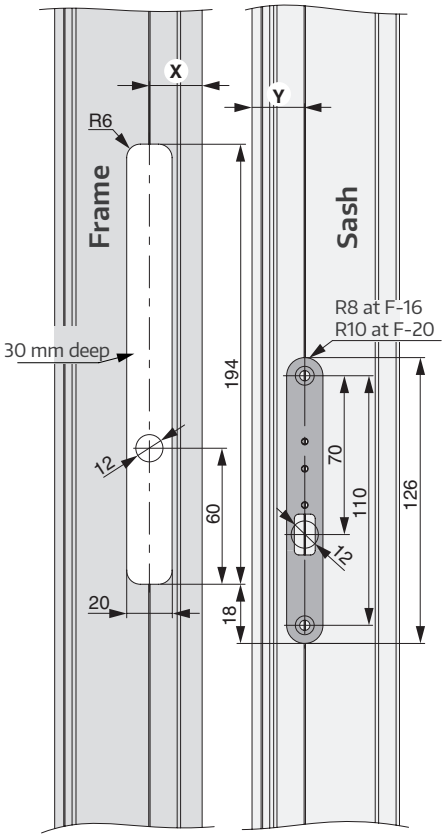
## 12.15 Cable transition for opening angle ≤110°, 12 gap

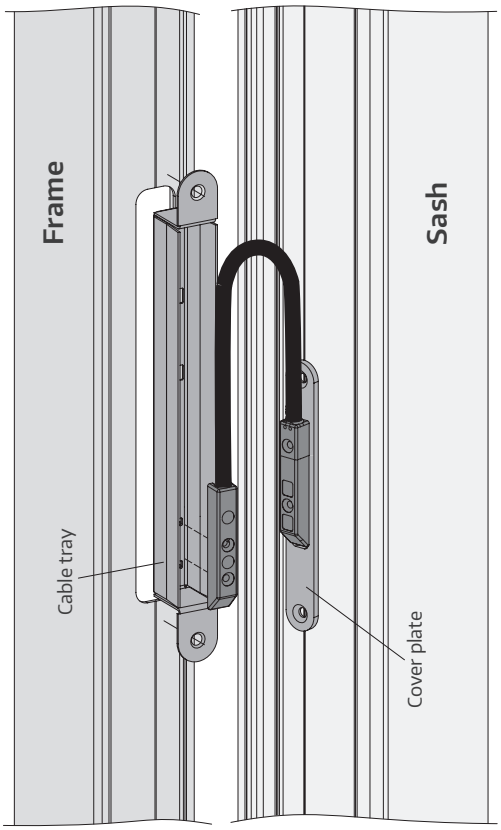


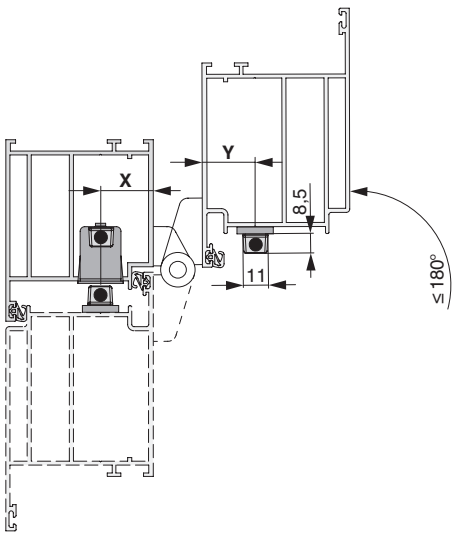



## 12.16 Cable transition for opening angle ≤180°, 4 gap, 12 gap



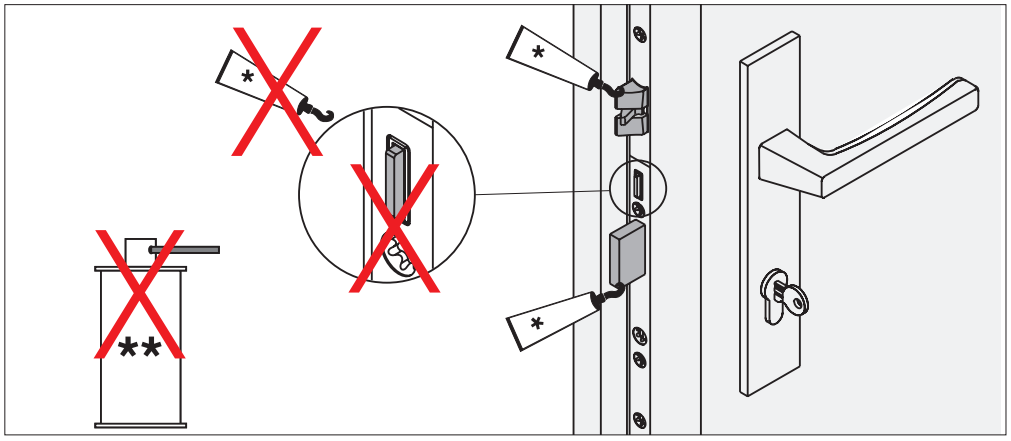

**Due to the various hinge options and the resulting turning axes, the position of the cable tray (dimension X) and the cover plate (dimension Y) must be determined independently!**



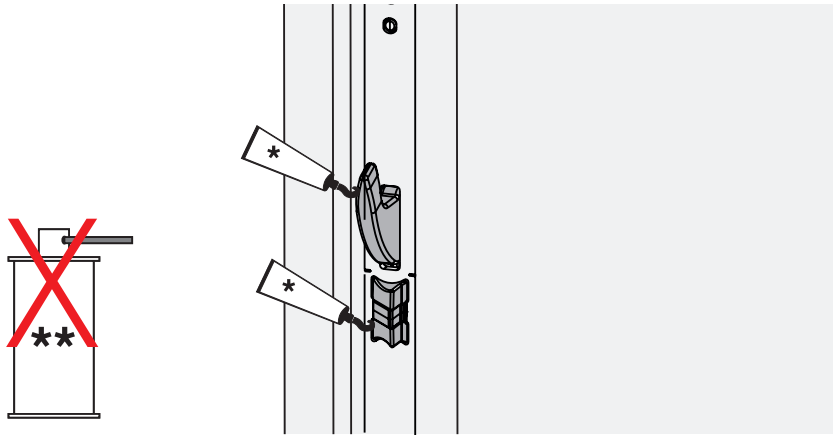
# 13. Maintenance

| CAUTION | Do not use any lubricating oils, rust remover, silicone sprays etc!<br>Lubricate only with grease or technical petroleum jelly! |
|---|---|

* Spray grease (455341), ** Rust remover




**The door lock (lock case)** is delivered with an intensive lubrication of high performance greases and must **NOT be re-lubricated! Lubricate the latch and locking bolt 1x annually!**




Lubricate the MF-HO locking element 1x annually!

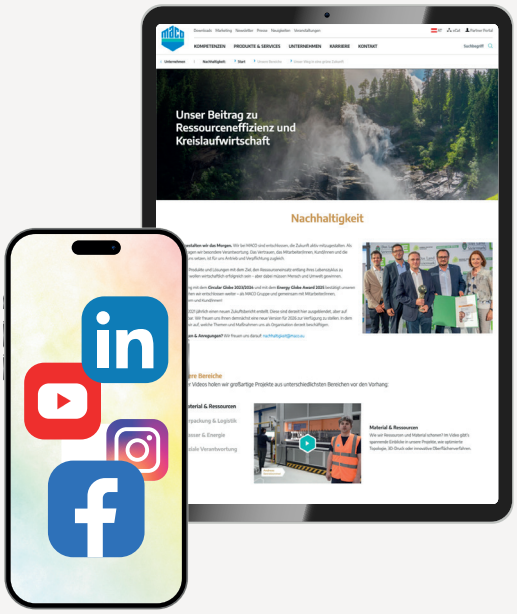
# 14. Disposal of the fitting

The fitting must be disposed of in accordance with local regulations and laws.
Disposal of the fitting may **NOT BE IN DOMESTIC WASTE**!

# Notes

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TECHNOLOGY IN MOTION

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