

# KFV

## Multi-point locks, key operated

**BS 2200**

**BS 230X**

**BS 25XX**

with 130 mm high auxiliary boxes

Window systems

Door systems

Comfort systems



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## 1 Introduction

Please read these instructions carefully before you begin the assembly work. Observe the notes in Chapter 2 "Safety", in order to prevent personal injury or malfunctions.

These instructions are an integral part of the multi-point lock and must be accessible to the specialist personnel at all times.

### 1.1 Producer and service

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A company of the SIEGENIA GROUP  
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42551 Velbert

Tel.: +49 2051 278-0

Fax: +49 2051 278-167

E-mail: info@kfv.de

Please contact your contractual partner in case of complaints or service requirement.

### 1.2 Target group of this documentation

This documentation is intended for use by specialists only. All work described in this document is to be performed only by experienced professionals with training and practice in the assembly, as well as the commissioning and maintenance of multi-point locks.

### 1.3 Intended use

#### 1.3.1 Installation location

- The multi-point lock is suitable for installation in single-sash and double-sash doors in permanent buildings.
- The multi-point lock may only be installed in doors that have been fitted in a technically sound manner.
- The door design must permit use of the multi-point lock.

#### 1.3.2 Locking part and hardware

- Repair of the multi-point lock is not permissible. If the multi-point lock is damaged, it must be repaired by KFV or by a specialist company.
- Use only KFV frame parts.

### 1.4 Improper use

- The multi-point lock must not be used for escape doors.
- The multi-point lock is not designed to accommodate changes to its shape or seal which arise as a result of differences in temperature or changes to the building.
- 

- The multi-point lock must not be used in doors for wet rooms or rooms in which the air contains aggressive or corrosive components.
- Foreign objects and/or materials which impede or prevent proper use must not be placed within the opening range, the locking system or the striker plates.
- Do not interfere with and/or make any modifications to the multi-point lock.
- Locking elements must not be misused to hold the door open.
- Movable or adjustable locking elements (e.g. deadbolt, latch) must not be painted over.

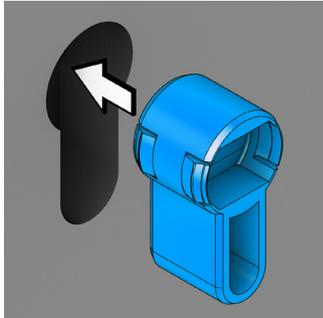
### 1.5 Installation conditions and requirements

Local building laws and regulations must be observed before and during door installation in addition to the following requirements and conditions:

- before installing the multi-point lock, check the dimensional accuracy of the door and the door frame. The multi-point lock must not be installed if the door and/or the frame is warped and/or damaged.
- Surface treatment of the door and door frame must take place before the multi-point lock is installed. Subsequent surface treatment can reduce the functional capacity of the multi-point lock.
- Observe the specified positions and sizes for all milling and drilling dimensions within the defined tolerances. Observe the horizontal and vertical adjustment accurately.
- Remove any splinters from routed pockets after milling.
- Do not overtighten the screws or insert them at an angle.
- Once the multi-point lock is installed, do not perform mechanical work on the door (such as drilling or milling).
- Do not drill into or through the main lock under any circumstances.
- Install hardware components and cylinder flush.
- Adhere to airgap (interval between faceplate and frame parts): the multi-point lock functions safely with an airgap between 3.5 mm +/- 1.5 mm. Beyond this, the fabricator must ensure that the airgap is large enough to guarantee the freedom from constraint of the door.
- Use only acid-free neutral-cure sealants to prevent corrosion of components and/or the door.

### 1.6 Transport

- Block set the door leaf in the frame with door gap restrictors.
- The transit support provided must remain in the main lock during the transport of a pre-assembled door without cylinder lock.



- In the installed and non-installed status of the multi-point lock, ensure that the locking elements are in the release position.
- Multi-point locks are sensitive components and must therefore be handled with care. For example, they must not be thrown, hit hard or bent.
- Do not carry the door by the lever handle or hardware when transporting it.

### 1.7 Dimensions

All measurements are given in mm.

### 1.8 Symbols used

The following icons are used in this document:

	useful information or advice
	Do not use mechanical force
	Wear safety goggles
	Wear safety footwear
	Wear safety gloves
	Continue reading the instructions at the corresponding point
	Milling cutter and drill diameter
	Groove length
	Groove depth from bottom edge of face plate
	Groove width
	Through hole
	Metal profiles
	Timber profiles
	PVC profiles

# KFV – assembly instructions

Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

## 1.9 Other types of presentations

Below is a list of symbols used in these instructions and their meanings:

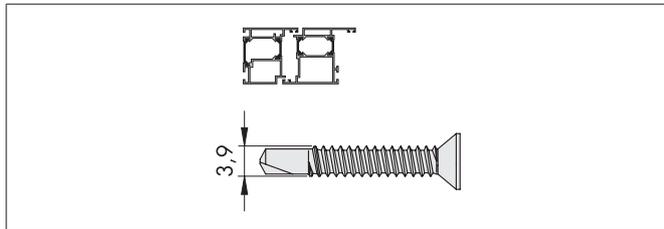
- Items of text following this marker are found in lists.
  - Items of text following this marker are found in subordinate lists.
- ▶ Items of text with this marking in front of them are instructions that must be followed in the specified order.

## Cross reference

“ ” A separate cross reference is enclosed by quotation marks.

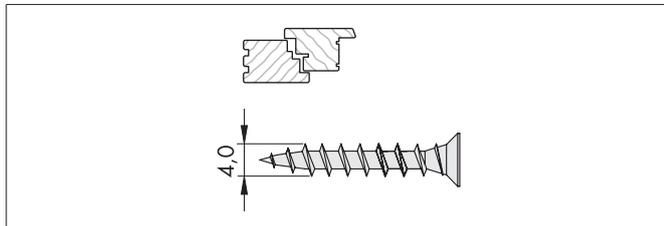
() A cross reference in the flow text is enclosed by brackets.

## 1.10 Screw recommendations



Aluminium: SKG\*\*  $\varnothing \geq 4.8$  mm

Aluminium profile min. 2 mm wall thickness

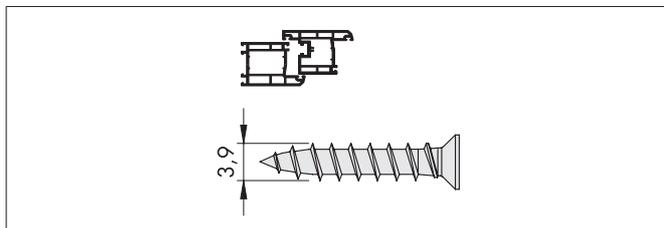


Timber:

SKG \*\*  $\varnothing 4.0$  mm x 40 mm

SKG \*\*\*  $\varnothing 4.5$  mm x 45 mm

SKH certified



PVC:

SKG\*\*  $\varnothing \geq 4.2$  mm

Steel reinforcement min. 1.5 mm wall thickness

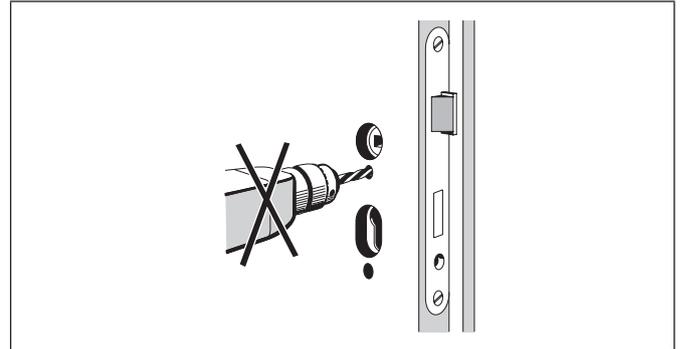
## 1.11 Applicable documents

For the installation of the multi-point lock, it is essential to observe all assembly and operating instructions that are enclosed with other (optional) components. The instructions of the door producer and for other accessories from other producers are also applicable.

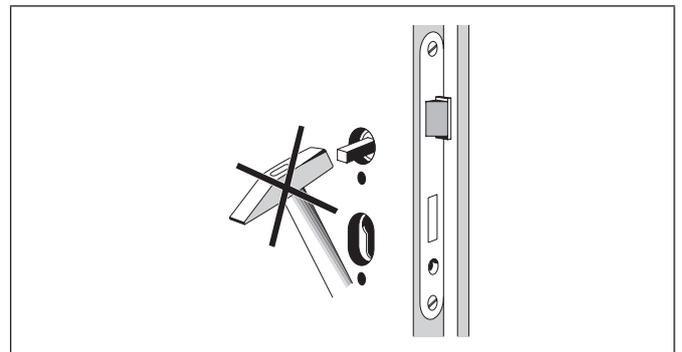
## 1.12 Appropriate disposal

- The multi-point lock and the optional accessories should not be disposed of with household waste. Comply with the current local and national regulations.
- The packaging consists of raw materials that can be recycled and can be taken to the local waste paper disposal site.

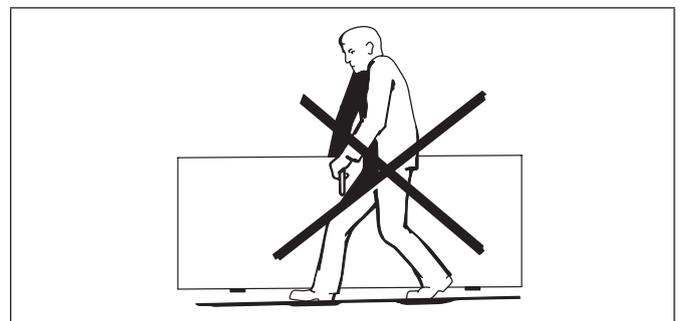
## 1.13 Causes of damage



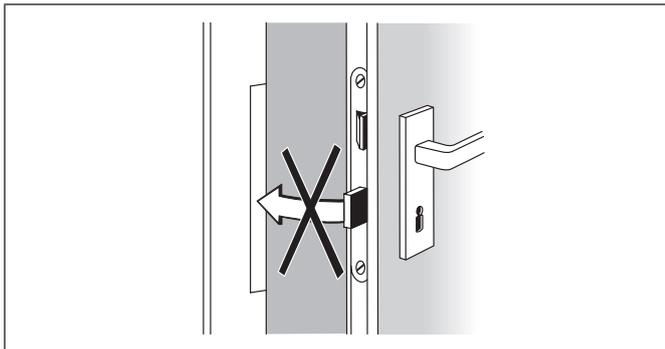
Do not drill through the door leaf in the area of the gear box when the lock or the multi-point lock is installed.



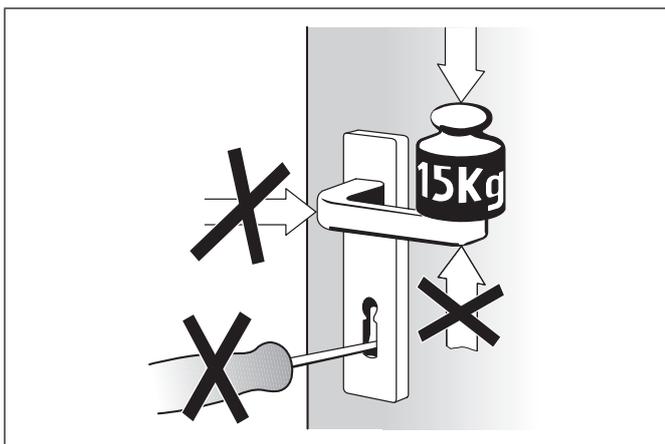
The spindle must not be hit through the lock nut with force.



The door leaf must not be carried using the lever handle as a grip.



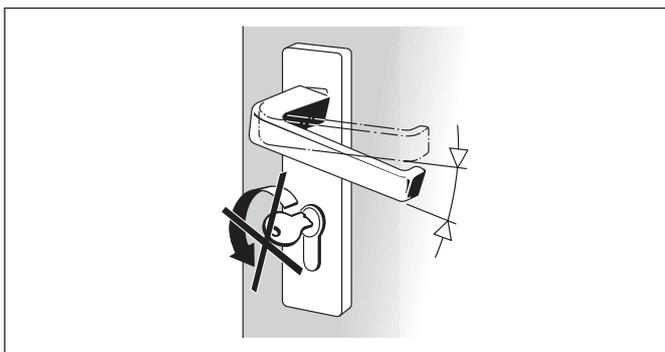
None of the locking elements may be excluded when the door is open.



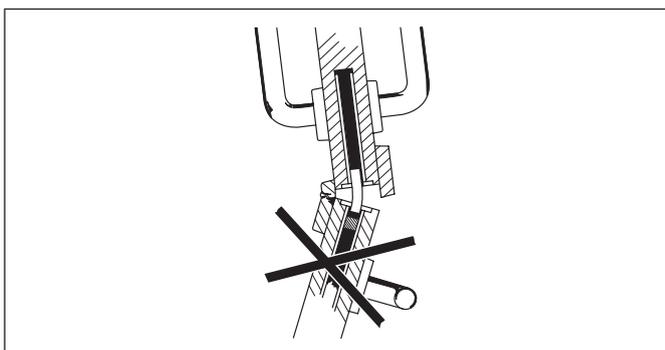
Force must be exerted on the lever handle only in the normal direction of rotation.

A maximum force of 150 N may be applied to the lever handle in the direction of actuation.

The lock or multi-point lock must be locked only with the associated key (and not with foreign objects).



The lever handle and key must not be operated at the same time.



Double-leaf doors must not be forced open using the inactive sash.

## 2 Safety

Before starting the assembly work, read the following safety instructions carefully. They are designed to keep you safe and prevent hazards, injuries and material damage. Observe all warning notes.



Information

This symbol indicates special features and designates facts that require increased attention.

### 2.1 Personal protective equipment

You will need the following protective equipment when assembling multi-point service locks:

- safety shoes
- protective gloves
- protective goggles

### 2.2 Heavy components

When working with multi-point locks, the door leaf will need to be lifted off in some cases.

This presents a danger of foot injuries.



Wear safety footwear

### 2.3 Sharp edges

Cropping metal components creates sharp edges.

This presents a danger of cutting injuries.



Wear safety gloves

### 2.4 Swarf flying around rapidly

During milling work, there will be swarf flying around rapidly.

This presents a risk of eye injuries.



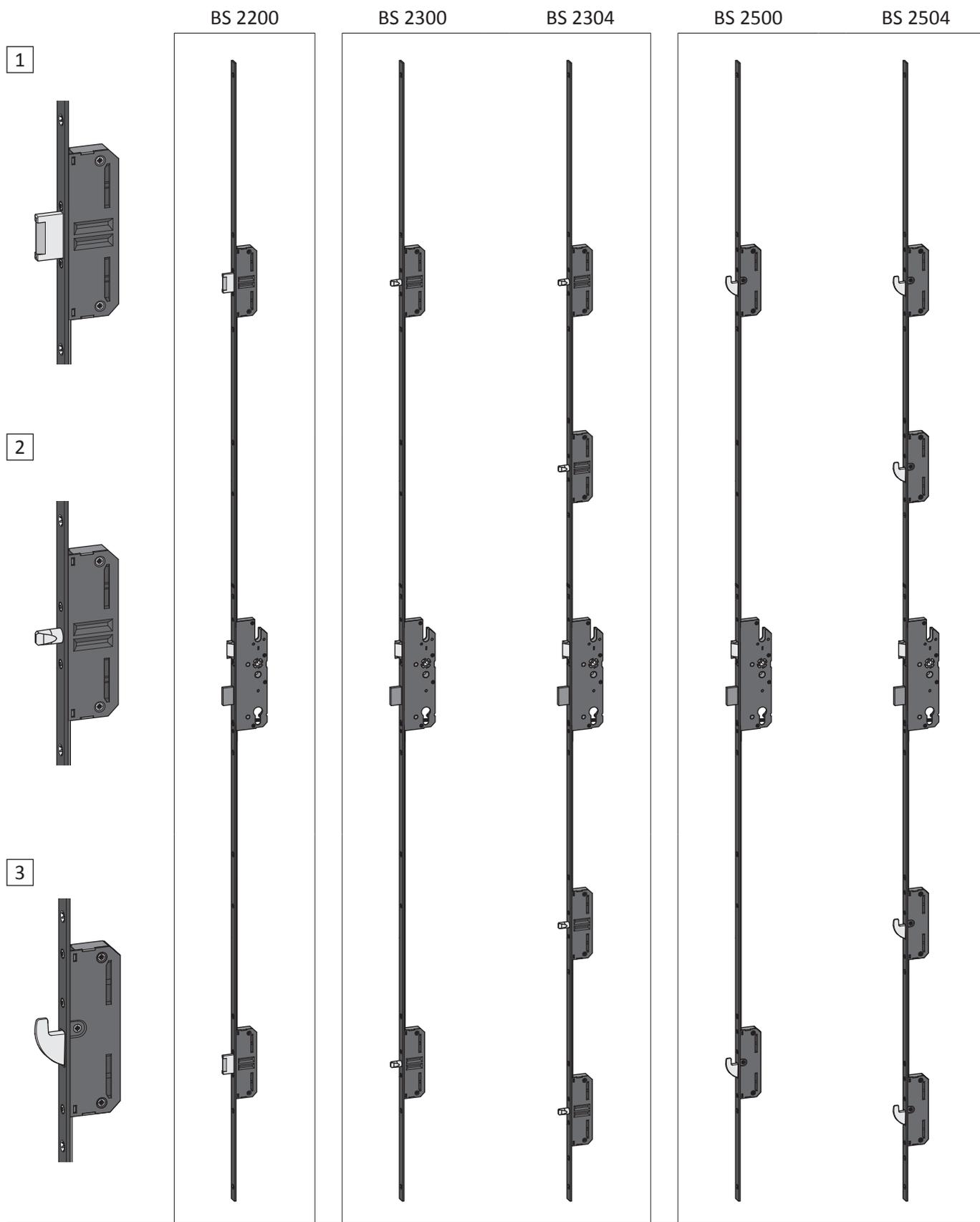
Wear safety goggles

### 3 Variants and components

The multi-point locks BS 2200, BS 2300 and BS 2500 are equipped with two auxiliary boxes each.

The multi-point locks BS 2304 and BS 2504 are equipped with four auxiliary boxes.

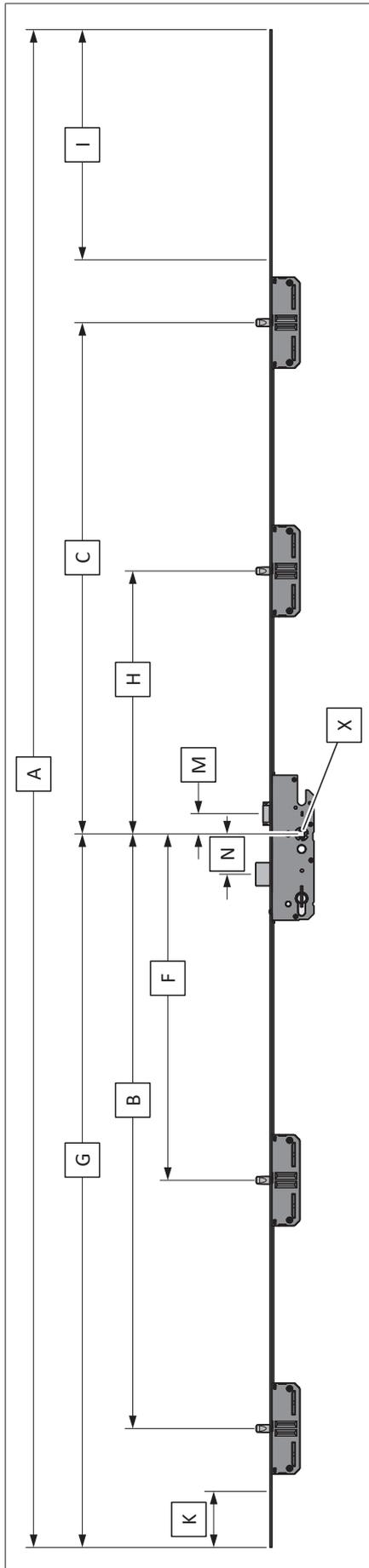
Three versions of auxiliary boxes are available:  
 timber deadbolt [1], round bolt [2], hook bolt [3].



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## 3.1 Size variants



Size variants	A	B	C	F	G	H	I	K
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PZ dimension 72								
BS 2200								
W171	1709	808	632		943			
W172	1584	808	507		943			
BS 2300								
W000	2170	850	730		1042		298	92
W003	1745	738	730		876.5			
W004	1785	760	730		952			
W006	1785	850	730		952			
BS 2500								
W000	2170	850	730		1042		298	92
W267	2400	740	750		1050		500	210
W268	1700	740	750		845			
W269	2400	740	1105		1050		145	210
W270	2055	740	1105		845			

PZ dimension 92								
BS 2200								
W000	2170	760	730		1020		320	160
BS 2300								
W000	2170	760	730		1020		320	160
W005	1694	760	730		862			
W287	1688	760	722		863			
BS 2304								
W000	2170	850	731	495	1020	376	319	70
BS2500								
W000	2170	760	730		1020		320	160
W204	2170	850	810		1020		70	240
BS 2504								
W000	2170	850	731	495	1020	376	319	70

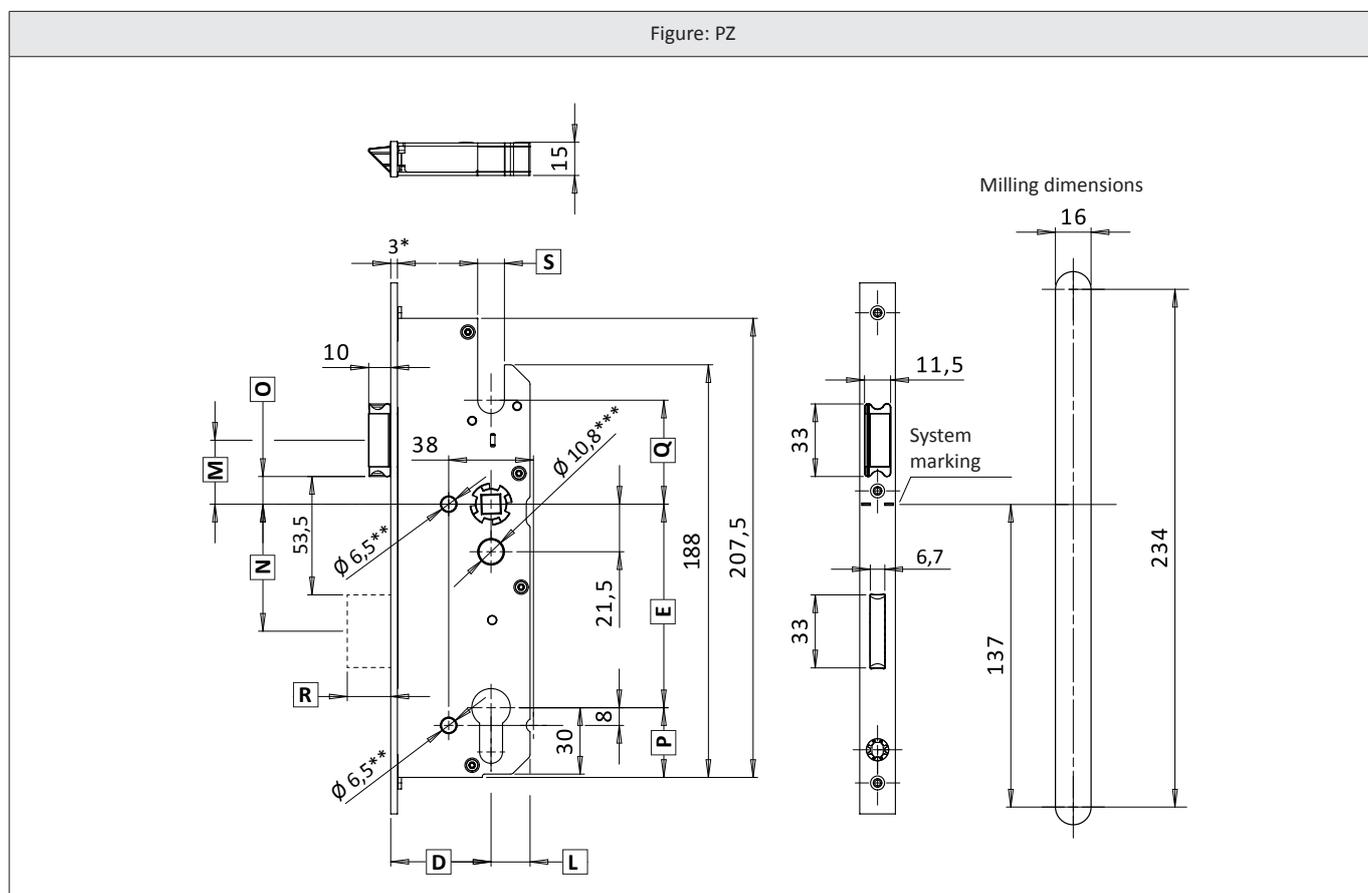
Dimensions I + K	= Can be shortened
X	= Centre of handle nut All dimensions from [X] to centre of auxiliary box
M	= 29.0
N	= 57.5

## 4 Component dimensions

### 4.1 Main lock types, key-operated

Main lock type	Cylinder lock PZ/RZ	Variable dimensions in mm									
		PZ dimension [E]	Backset [D]	Rear backset [L]	Deadbolt projection [R]	[M]	[N]	[O]	[P]	[Q]	[S]
V	PZ	72	55, 65, 70, 80	17.5	20	29	57.5	12.5	51.5	47	12
H	PZ	92	25	17.5	without deadbolt	29	57.5	12.5	31.5	45	8
H	PZ	92	30	17.5	10	29	57.5	12.5	31.5	45	8
H	PZ	92	35	17.5	16	29	57.5	12.5	31.5	47	12
H	PZ	92	40 - 80	17.5	20	29	57.5	12.5	31.5	47	12

Figure: PZ



\* This dimension refers to a flat face plate 3 mm, galvanized steel.  
This dimension and other dependent dimensions could change if other faceplates are used.

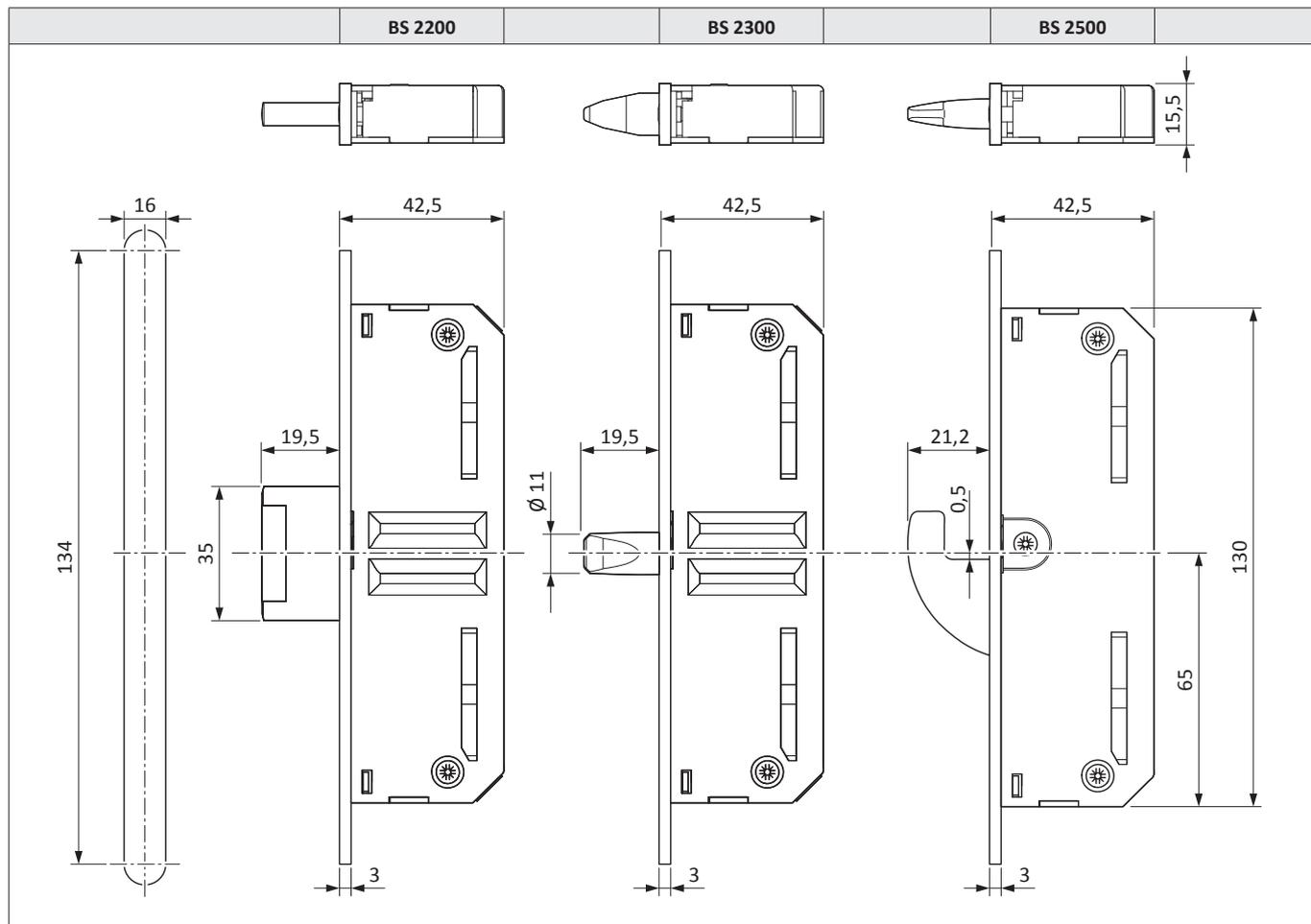
\*\* Drill holes only from [D] = 40 mm

\*\*\* With [E] = 72 mm the drill hole is  $\varnothing 6.5$  mm

# KFV – assembly instructions

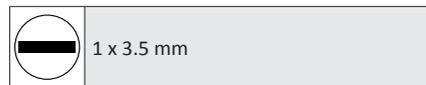
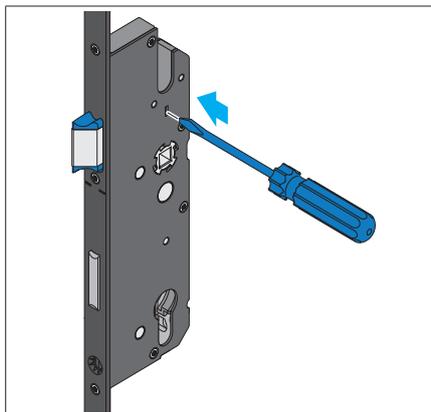
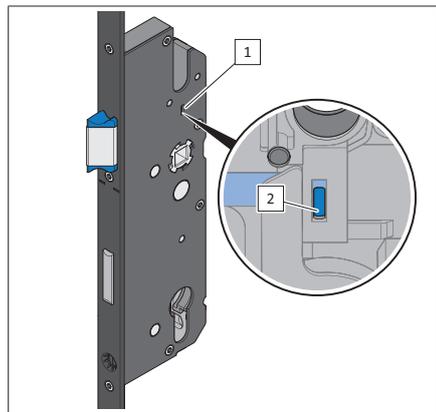
Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

## 4.2 Auxiliary boxes

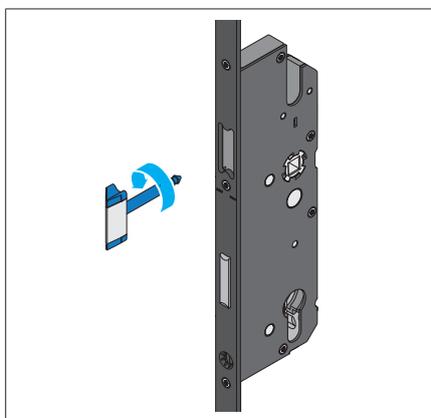
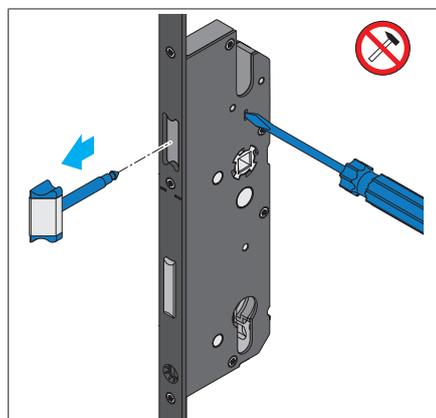


## 5 Installation

### 5.1 Change DIN orientation of the soft lock latch



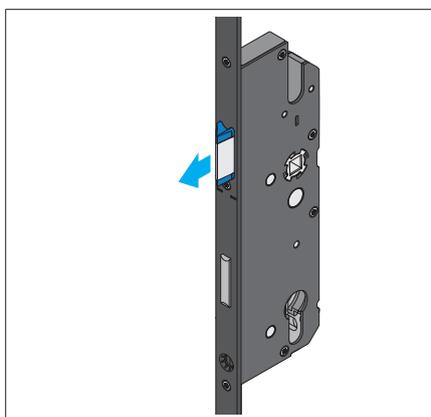
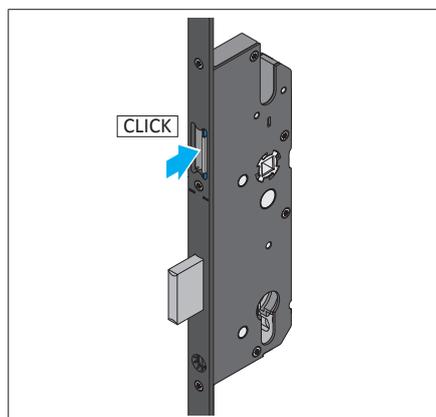
There is a slot [1] on the gear box side. The locking spring [2] of the latch shank can be opened through this slot using a slotted screwdriver.



► Carefully press on the locking spring of the latch shank through the opening using the slotted screwdriver.

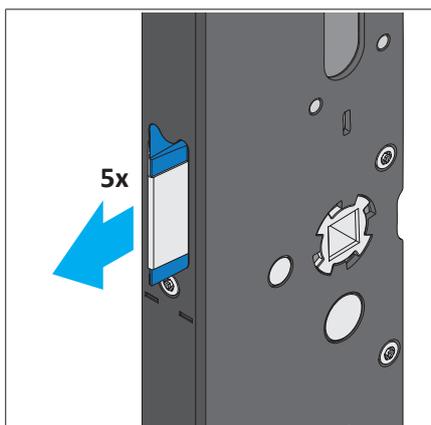
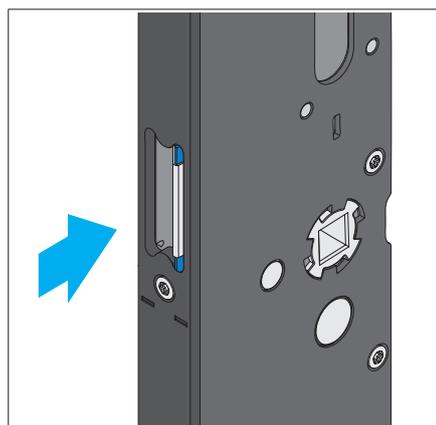
The latch shank will be released.

► Remove the latch and rotate it by 180°.



► Carefully press the latch into the gear box until the latch shank snaps into the locking spring and then release the latch.

The latch must be able to extend independently and be held securely by the locking spring.



► Check that the latch is properly seated and is smooth running. Press the latch several times (approx. 5x) into the gear box and release the latch again.

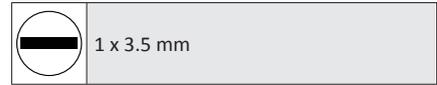
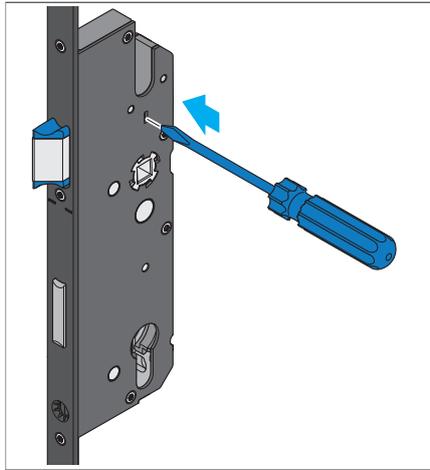
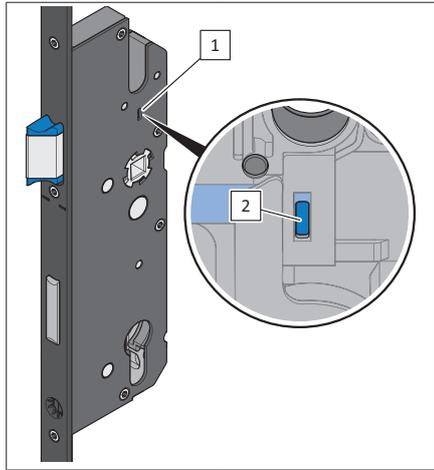
The latch must move with ease and extend again independently.

# KFV – assembly instructions

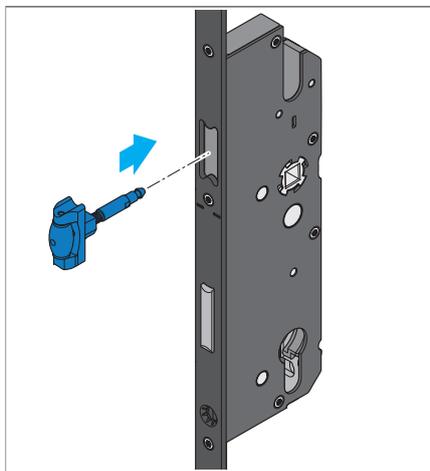
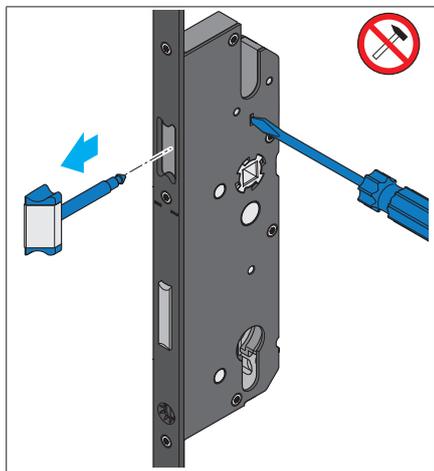
Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

## 5.2 Swing door roller latch

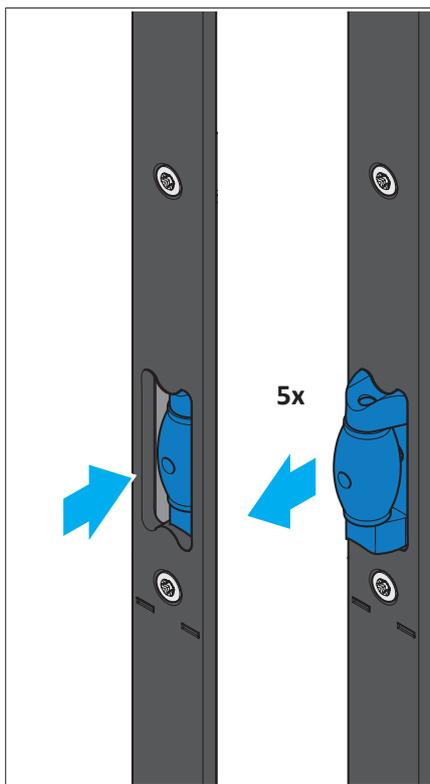
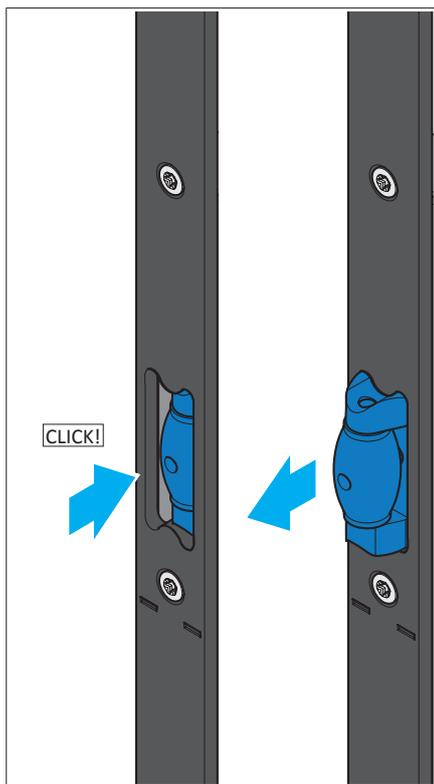
### 5.2.1 Replace soft lock latch with swing door roller latch



There is a slot [1] on the gear box side. The locking spring [2] of the latch shank can be opened through this slot using a slotted screwdriver.

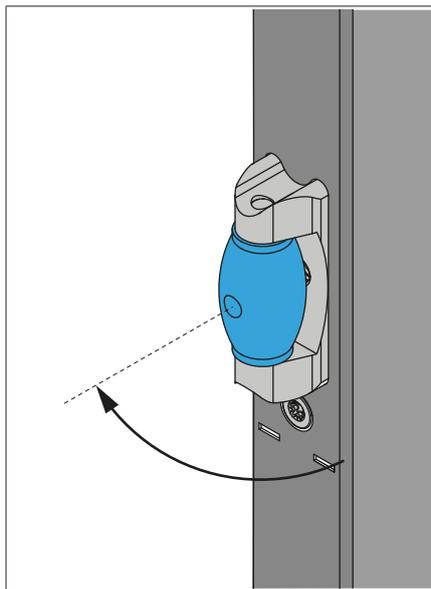
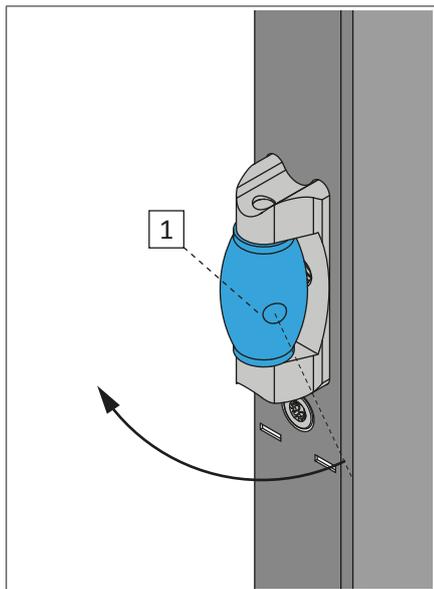


- ▶ Carefully press on the locking spring of the latch shank through the opening using the slotted screwdriver. The latch shank will be released.
- ▶ Remove the latch and replace it with the swing door roller latch.

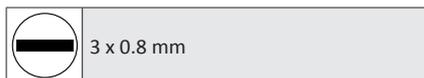
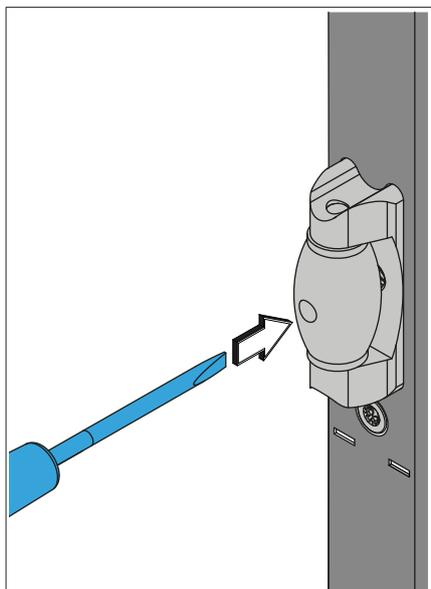
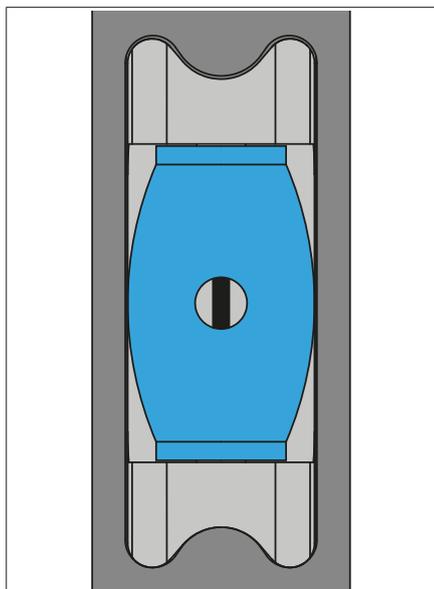


Carefully press the latch into the gear box until the latch shank snaps into the locking spring and then release the latch. The latch must be able to extend independently and be held securely by the locking spring. Check that the latch is properly seated and is smooth running. Press the latch several times (approx. 5x) into the gear box and release the latch again. The latch must move with ease and extend again independently.

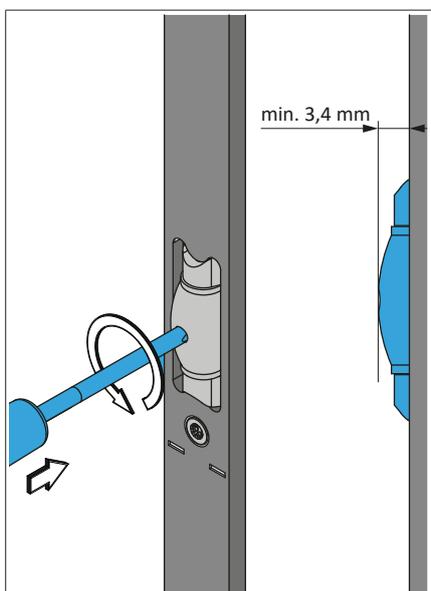
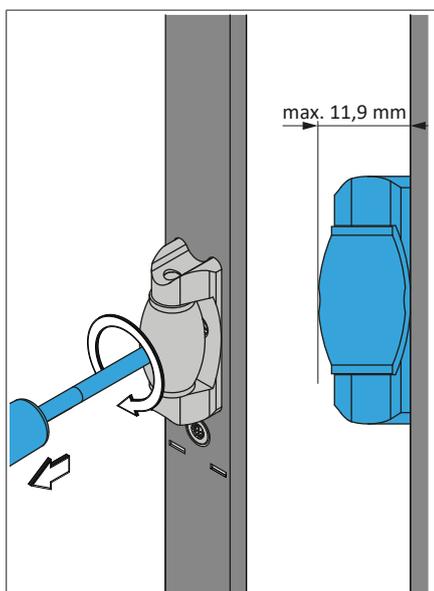
5.2.2 Adjustment of swing door roller latch



- ▶ Align the centre part in such a way that the hole [1] is facing forwards.



- ▶ Insert a 3 x 0.8 mm slot screwdriver into the latch shaft through the hole in the centre part.



**!** The swing door roller latch may only be unscrewed to the defined maximum value.

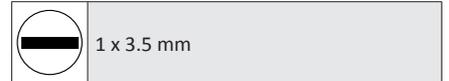
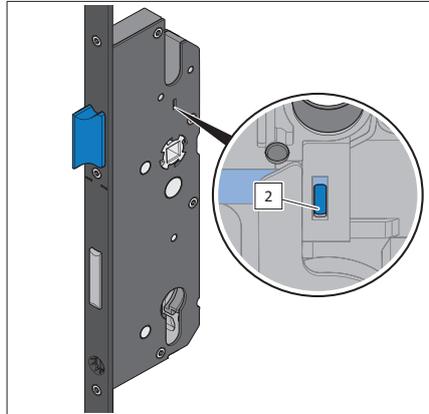
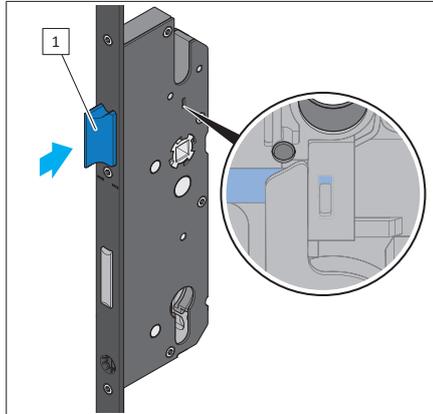
**!** The position of the swing door roller latch is based on the airgap of the door, see chapter 4.13 „Adjustment of airgap“.

- ▶ Turn the screwdriver anticlockwise.  
The swing door roller latch extends.
- ▶ Turn the screwdriver clockwise.  
The swing door roller latch retracts.

### 5.3 Change DIN orientation of the fire protection latch

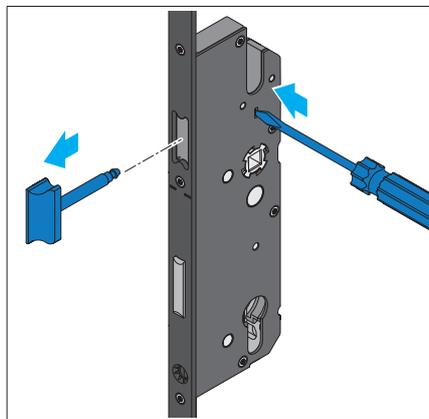
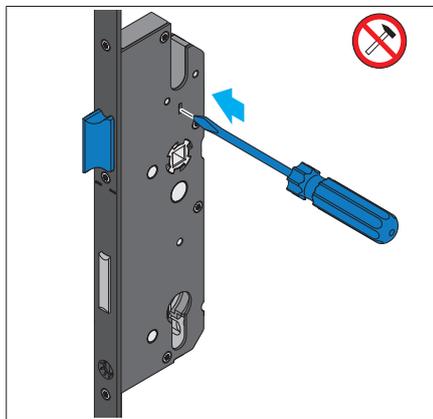


The fire protection latch is an integral components of a fire protection multi-point lock. With the exemption of changing the DIN orientation, all other modifications of fire protection multi-point locks are inadmissible.



▶ Press the latch [1] approx. 2 mm inwards.

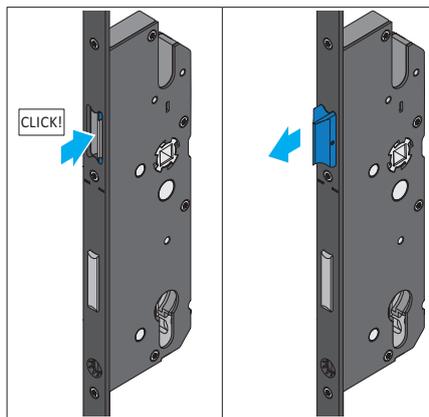
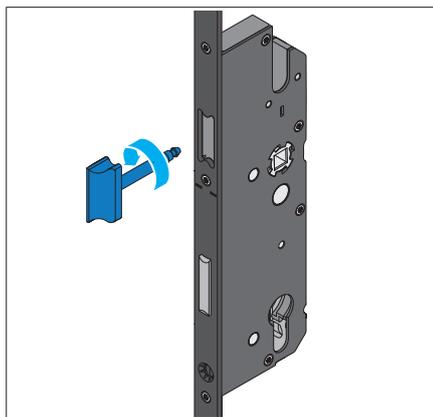
The locking spring [2] of the latch shank will be visible in the opening of the gear box.



▶ Press on the locking spring of the latch shank through the opening using a slotted screwdriver.

The latch shank will be released.

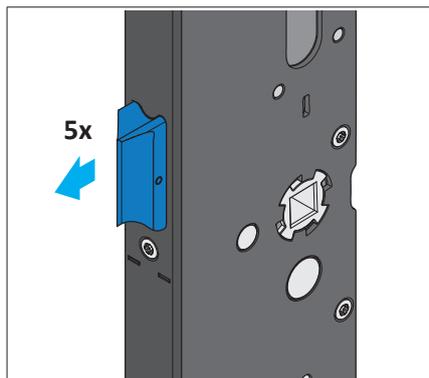
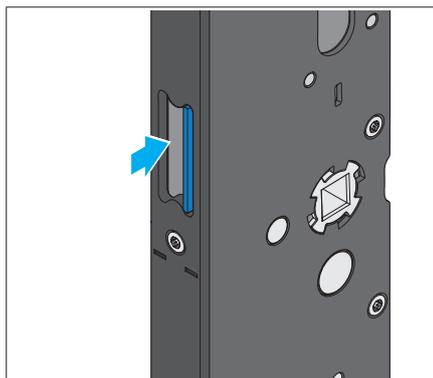
▶ Remove the latch.



▶ Rotate the latch by 180°.

▶ Carefully press the latch into the gear box until the latch shank snaps into the locking spring and then release the latch.

The latch must be able to extend independently and be held securely by the locking spring.



▶ Check that the latch is correctly seated and moves with ease by pressing the latch several times (approx. 5x) into the gear box and releasing the latch again.

The latch must move with ease and extend completely.

## 5.4 Milling the door leaf

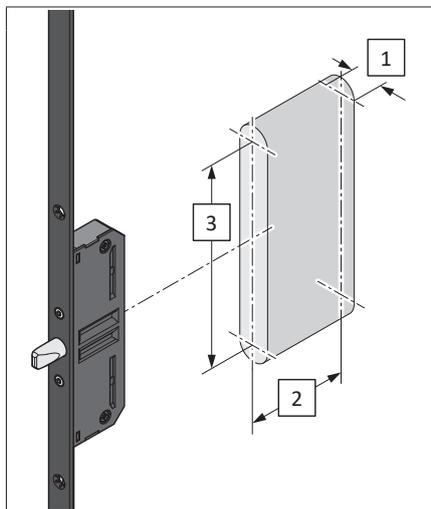
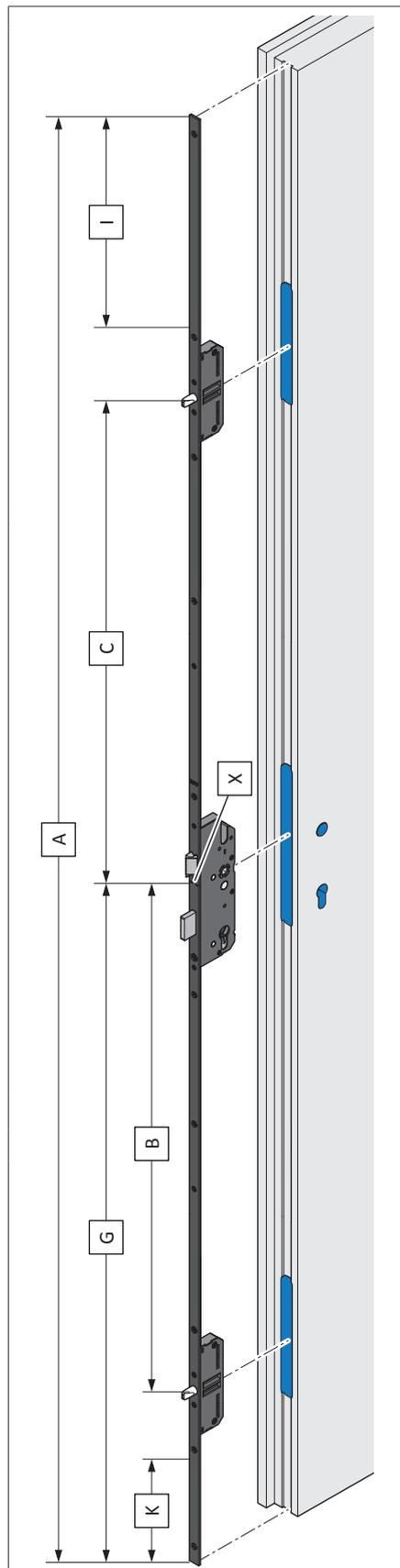
### 5.4.1 BS 2200, BS 2300, BS 2500



See chapter 3.1 "Size variants".

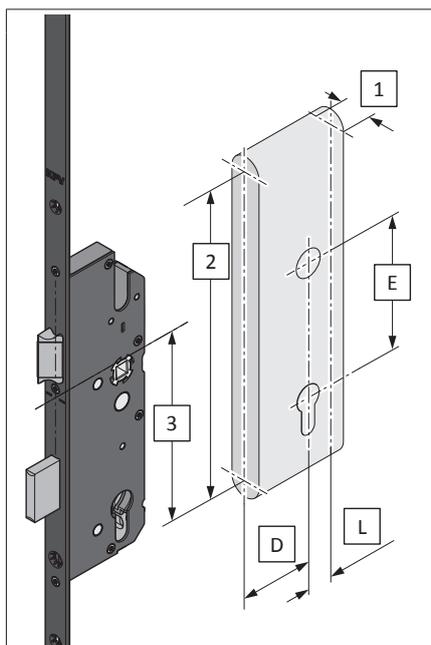


Wear safety goggles



#### Auxiliary box

- [1] 16.0 mm
- [2] 42.5 mm + 1 mm
- [3] 134.0 mm

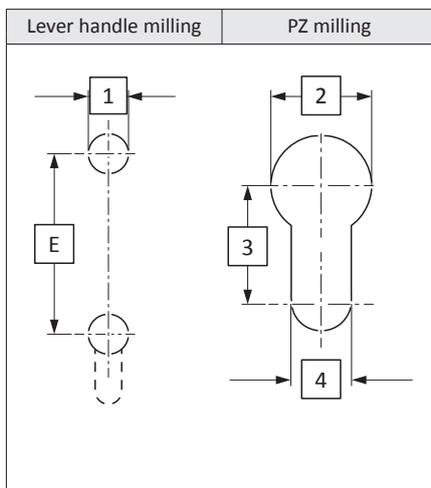


#### Main lock

- [1] 16.0 mm
- [2] 234.0 mm
- [3] 137.0 mm (system marking)
- [L] Rear backset dimensions + 1 mm
- [D] Backset
- [E] PZ dimension



For all dimensions of the main lock, see chapter 4.1 "Main lock types, key-operated".



#### Lever handle and cylinder

- [1]  $\varnothing$  18.0 mm
- [2]  $\varnothing$  18.0 mm
- [3] 21.0 mm
- [4] 12.0 mm
- [E] PZ dimension

# KFV – assembly instructions

Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

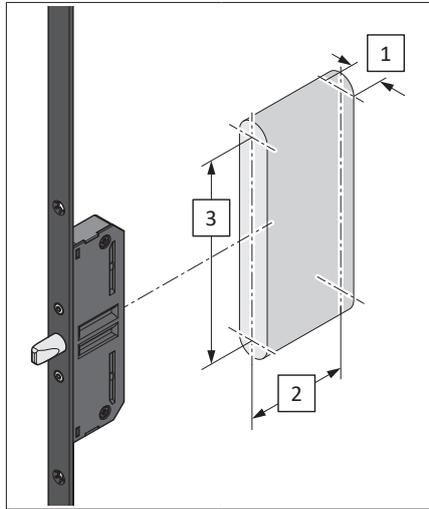
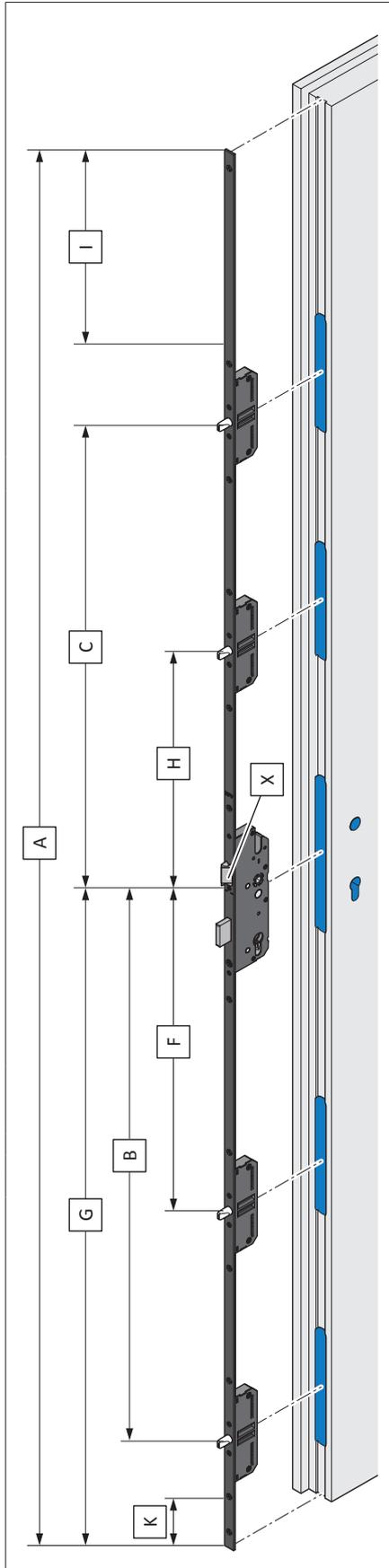
## 5.4.2 BS 2304 and BS 2504



See chapter 3.1 "Size variants".

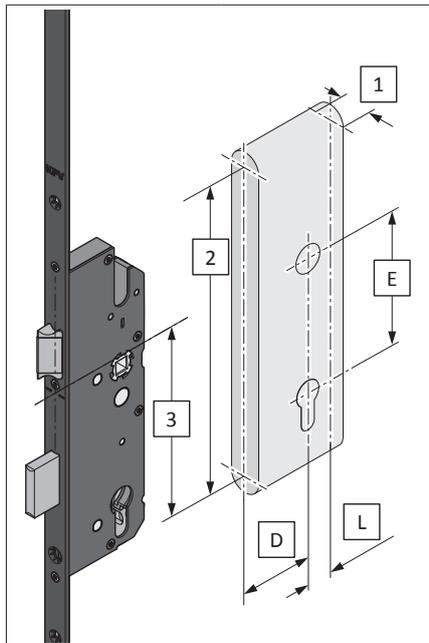


Wear safety goggles



### Auxiliary box

- [1] 16.0 mm
- [2] 42.5 mm + 1 mm
- [3] 134.0 mm

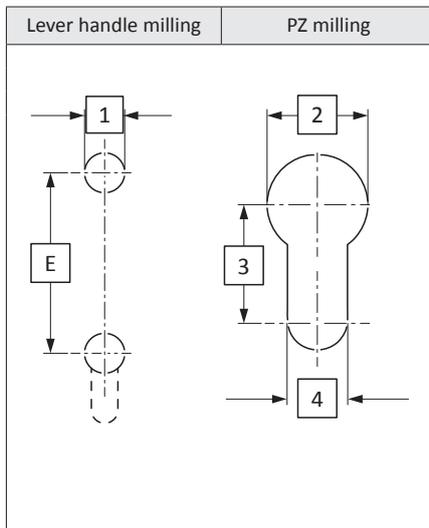


### Main lock

- [1] 16.0 mm
- [2] 234.0 mm
- [3] 137.0 mm (system marking)
- [L] Rear backset dimensions + 1 mm
- [D] Backset
- [E] PZ dimension



For all dimensions of the main lock, see chapter 4.1 "Main lock types, key-operated".



### Lever handle and cylinder

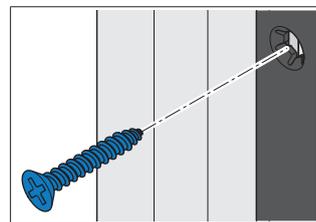
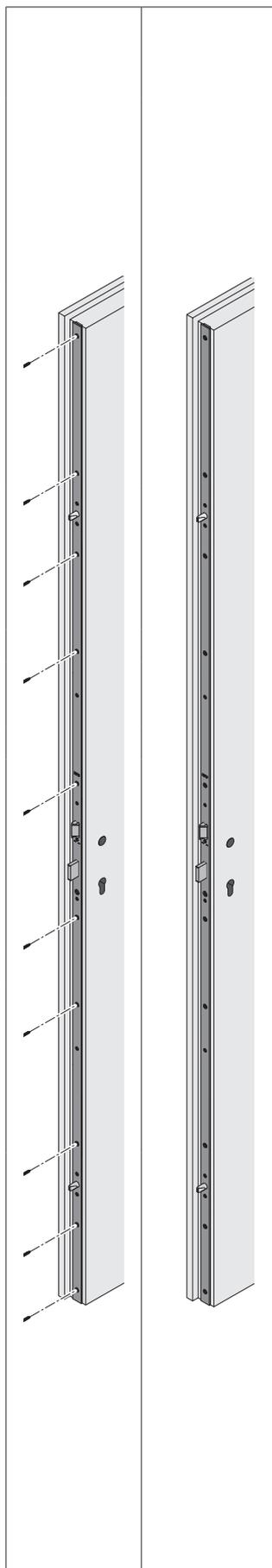
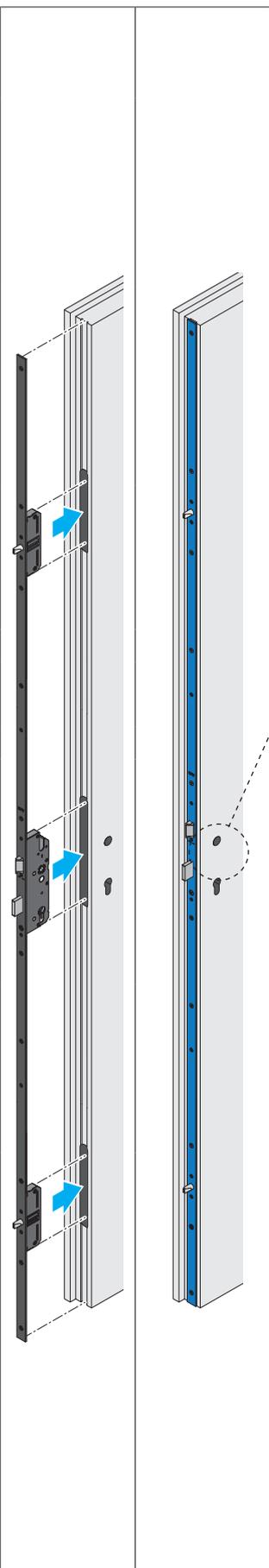
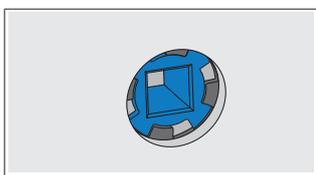
- [1] Ø 18.0 mm
- [2] Ø 18.0 mm
- [3] 21.0 mm
- [4] 12.0 mm
- [E] PZ dimension

5.5 Installing the multi-point lock

► Insert the multi-point lock in the milled door leaf.

► Screw the multi-point lock to the door leaf.

! Adjust the position to the handle nut.



# KFV – assembly instructions

Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

## 5.6 Mounting the handle set



Prior to the installation of the handle set, observe the enclosed assembly instructions of the manufacturer.



Compare the drilling template for the handle set with the positions of the fixing holes for the main lock before drilling, see chapter 4.1 "Main lock types, key-operated".

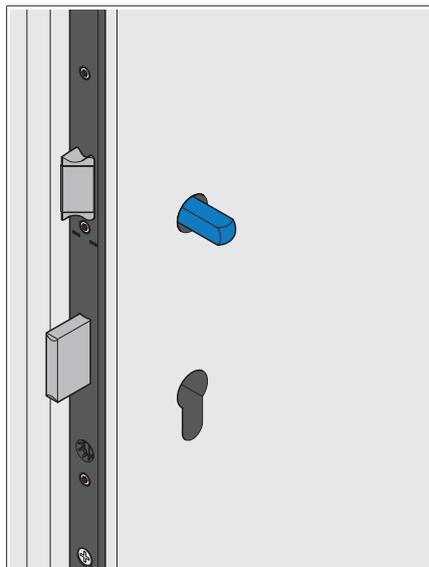
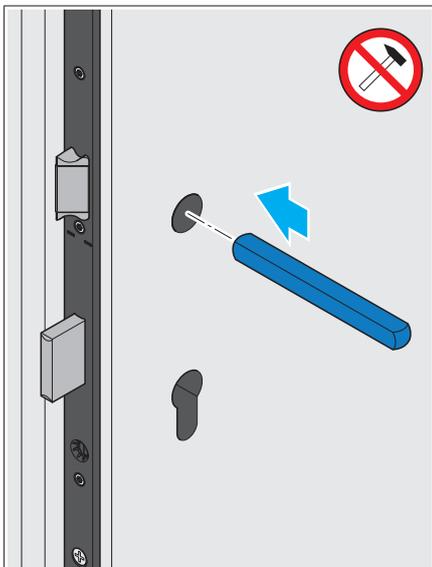


Dismount the multi-point lock before drilling.

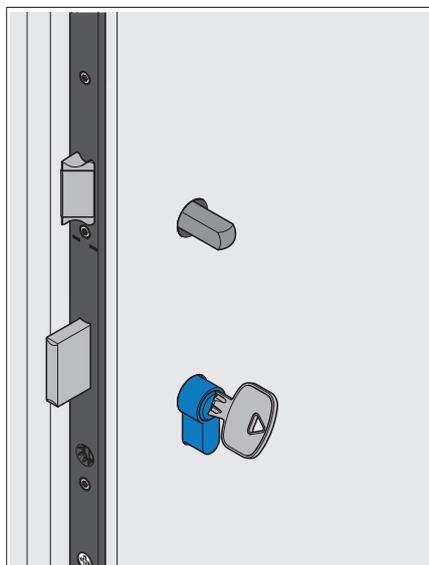
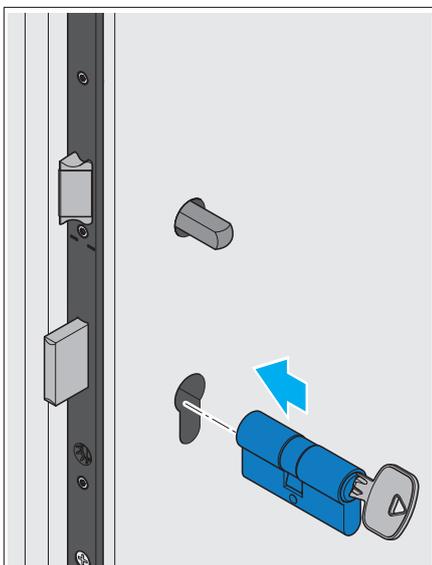
### 5.6.1 Marking and drilling the holes

- ▶ With the multi-point lock installed, adjust the drilling template, enclosed with the hardware, on the square spindle and mark the positions of the holes.
- ▶ Dismount the multi-point lock and drill the holes.
- ▶ Install the multi-point lock again.

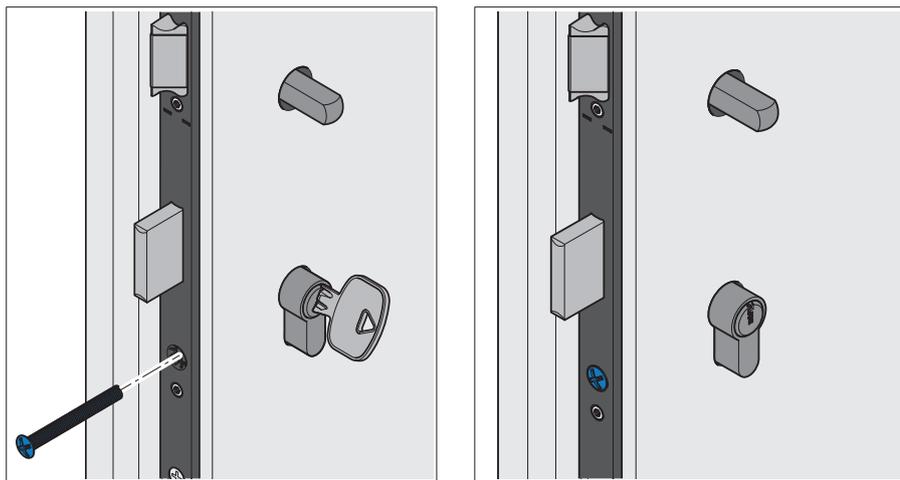
### 5.6.2 Installation of components



- ▶ Insert the handle square spindle.

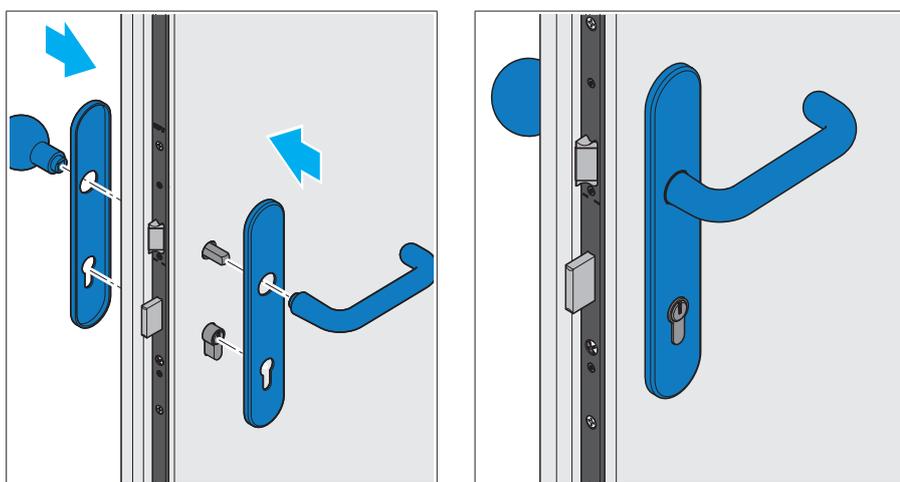


- ▶ Insert the cylinder lock into the main lock.



- Fix the cylinder lock with the cylinder lock screw.

 When fastening the cylinder lock screw, observe the manufacturer's torque specifications.



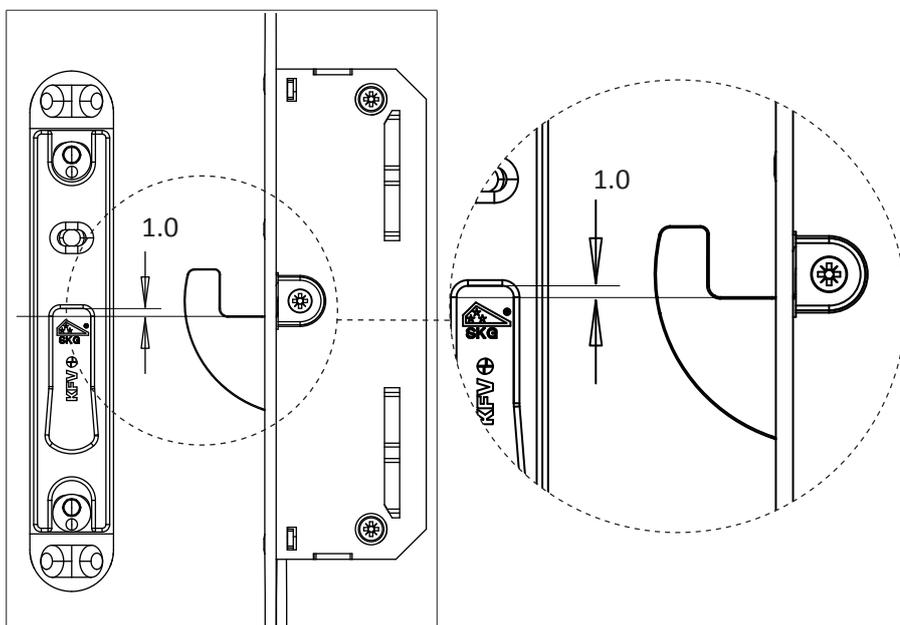
- Install the handle set according to the enclosed assembly instructions of the manufacturer.

## 5.7 Milling the frame

### 5.7.1 Assembly specifications for SKG certified frame parts



The dimensions for the vertical position must be exactly adhered to for the assembly of the frame parts. Consequently, it is ensured that the hook bolt can move fully into the locking position and achieve the specified minimum dimension for the grip into the frame part.



- The hook bolt must not have an interval to the frame part exceeding 1 mm.

The hook bolt must move smoothly and completely into the locking position and the release position.

Position the required millings and mount the frame parts with the specified screws, see chapter 1.10 "Screw recommendations".

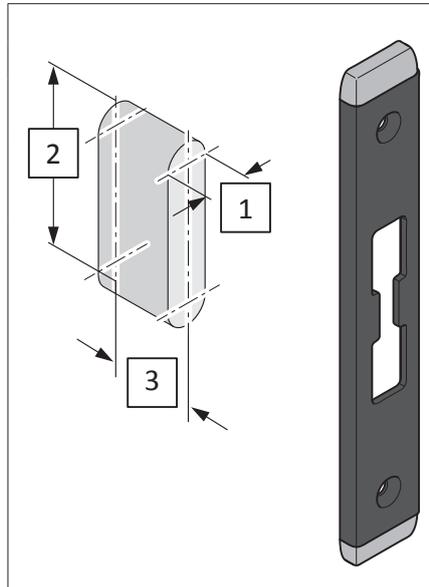
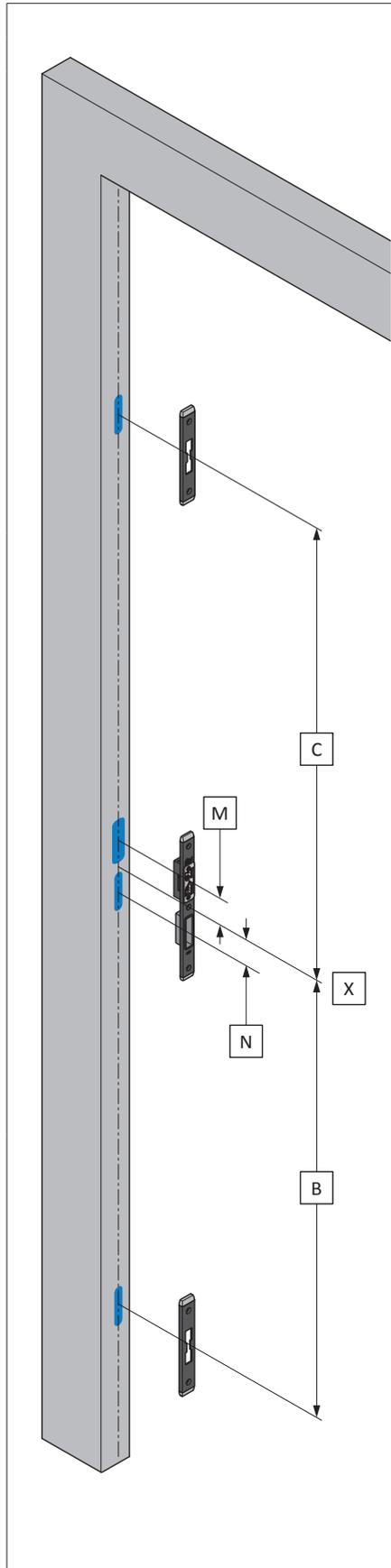
### 5.7.2 Frame milling for BS 2200



See chapter 3.1 "Size variants".



Always use safety goggles for milling work.



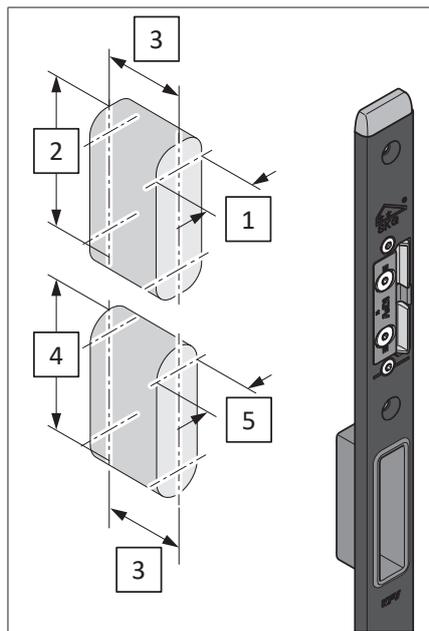
**The defined milling dimensions given refer to:**

E8H striker plate:	main lock
striker plate timber deadbolt	auxiliary box

**Contact the KFV customer service to find out the milling dimensions for other frame parts or locking rails.**

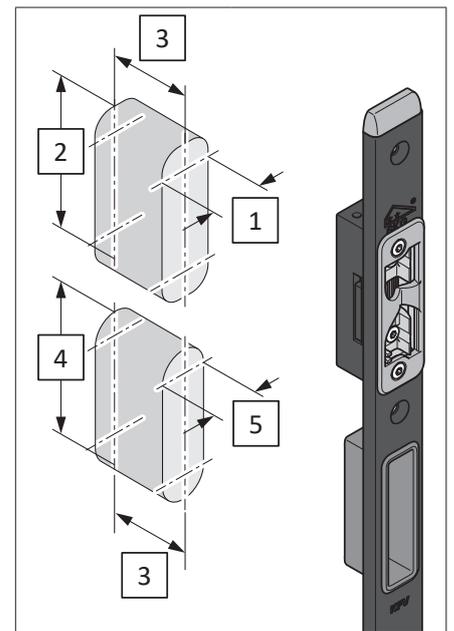
#### Timber deadbolt

- [1] 16.0 mm
- [2] 62.0 mm
- [3] min. 17 mm



#### AT piece and deadbolt lining

- [1] 23.0 mm
- [2] 72.0 mm
- [3] Component height plus 1 mm
- [4] 62.0 mm
- [5] 16.0 mm



#### Day latch and deadbolt lining

- [1] 23.5 mm
- [2] 78.0 mm
- [3] Component height plus 1 mm
- [4] 62.0 mm
- [5] 16.0 mm



Milling is omitted for U-profiles from a leg length of 6 mm and with use of the AT piece series 118/119.

5.7.3 Frame milling for BS 2300, BS 2500



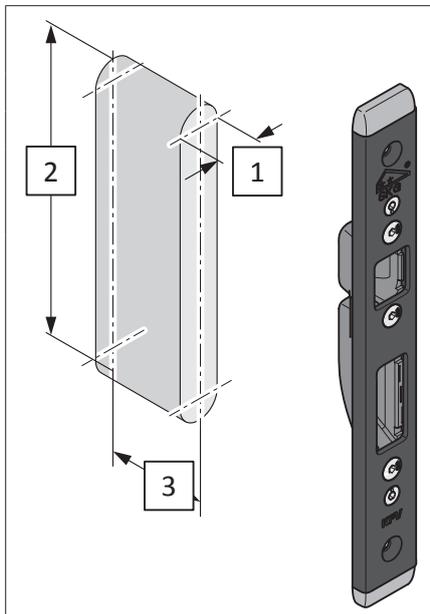
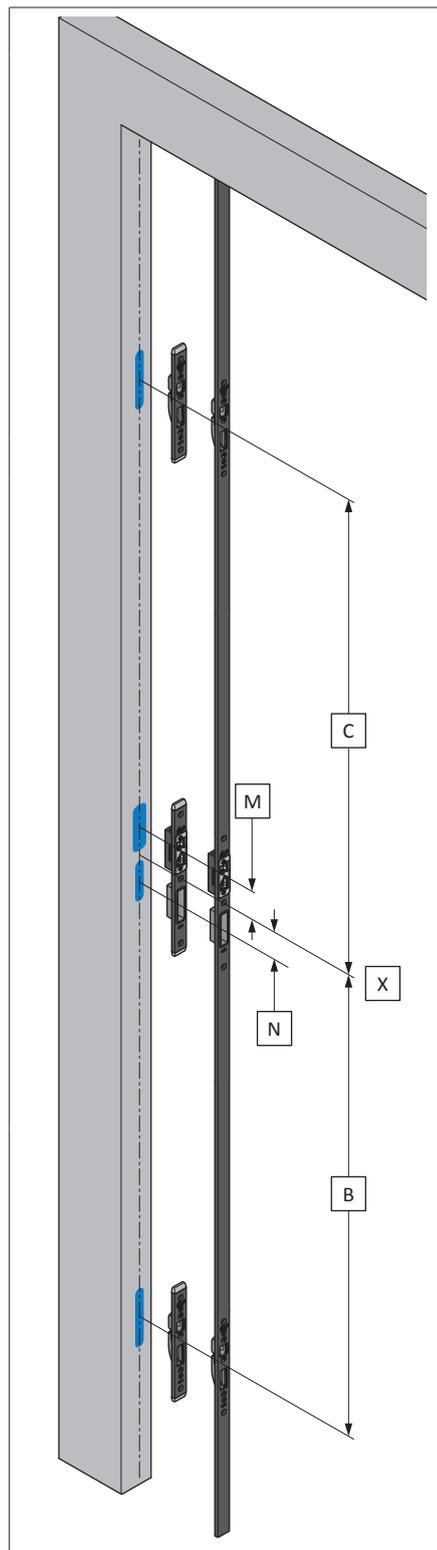
See chapter 3.1 "Size variants".



Always use safety goggles for milling work.



Starting position  
Centre striker plate = centre auxiliary box  
The striker plate must be moved:  
for BS 2300 **30 mm downwards**  
for BS 2500 **6 mm upwards**



The defined milling dimensions given refer to:

E8H striker plate: Main lock

Q striker plate: Auxiliary box

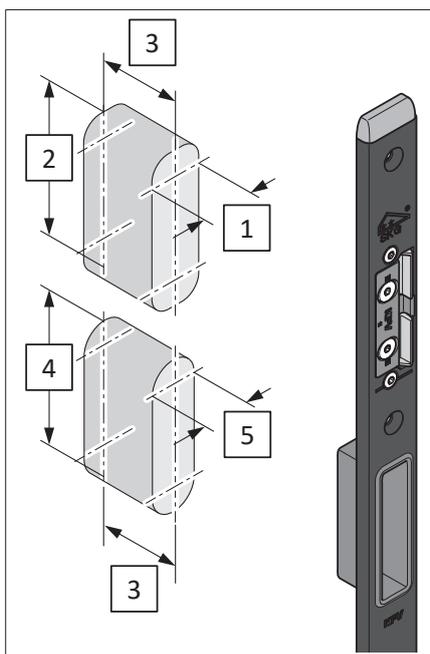
Contact the KFV customer service to find out the milling dimensions for other frame parts or locking rails.

Q adjustment of the auxiliary boxes

[1] 21.0 mm

[2] 135.0 mm

[3] Component height plus 1 mm



AT piece and deadbolt lining

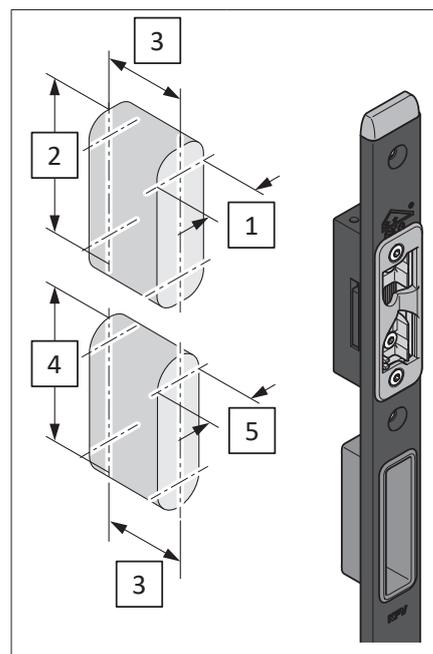
[1] 23.0 mm

[2] 72.0 mm

[3] Component height plus 1 mm

[4] 62.0 mm

[5] 16.0 mm



Day latch and deadbolt lining

[1] 23.5 mm

[2] 78.0 mm

[3] Component height plus 1 mm

[4] 62.0 mm

[5] 16.0 mm

# KFV – assembly instructions

Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

## 5.7.4 Frame milling for BS 2304, BS 2504



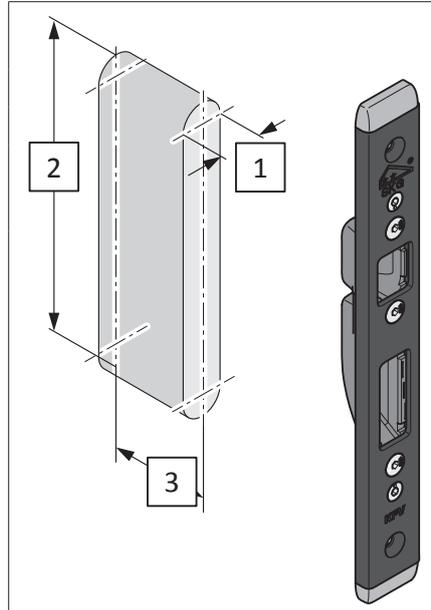
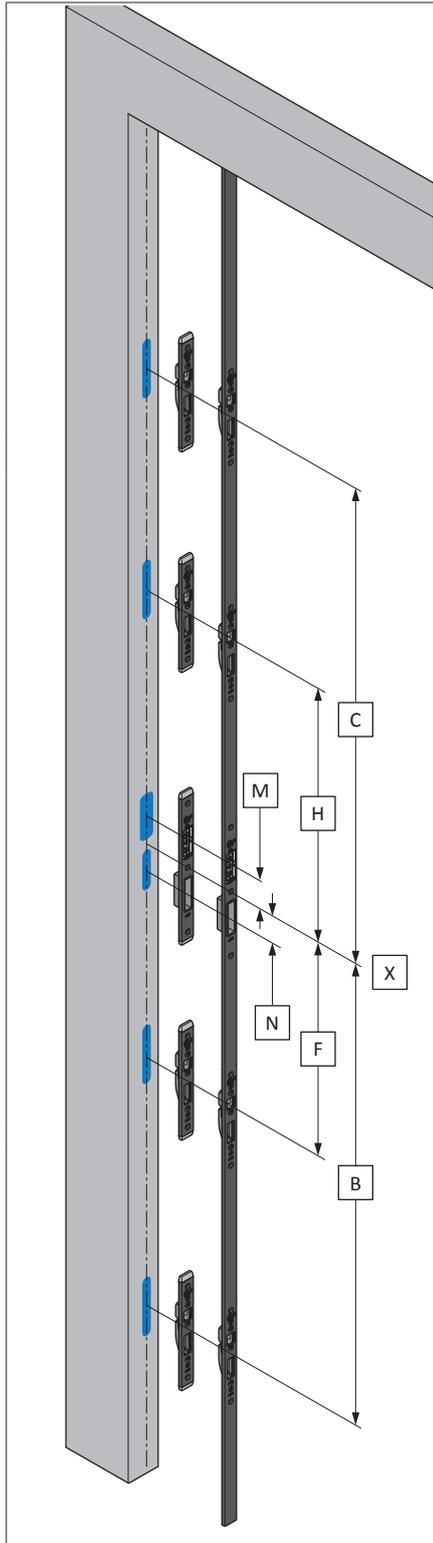
See chapter 3.1 "Size variants".



Always use safety goggles for milling work.



Starting position  
Centre striker plate = centre auxiliary box  
The striker plate must be moved:  
for BS 2300 **30 mm downwards**  
for BS 2500 **6 mm upwards**



The defined milling dimensions given refer to:

E8H striker plate: main lock

Q striker plate: auxiliary box

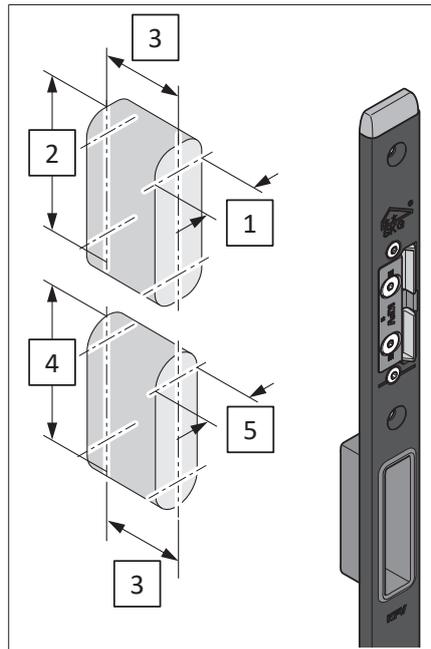
Contact the KFV customer service to find out the milling dimensions for other frame parts or locking rails.

Q adjustment of the auxiliary boxes

[1] 21.0 mm

[2] 135.0 mm

[3] Component height plus 1 mm



AT piece and deadbolt lining

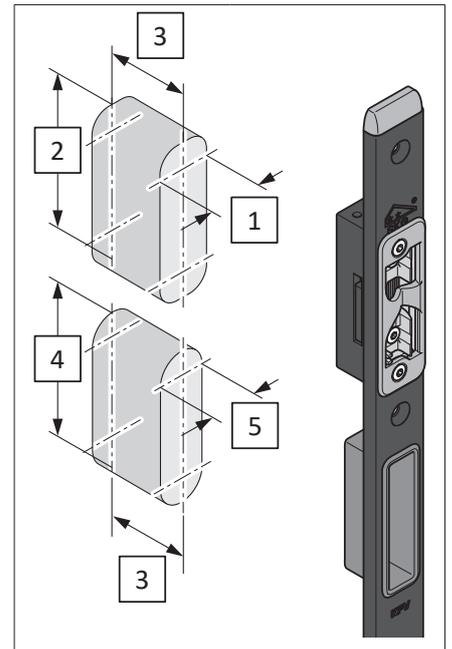
[1] 23.0 mm

[2] 72.0 mm

[3] Component height plus 1 mm

[4] 62.0 mm

[5] 16.0 mm



Day latch and deadbolt lining

[1] 23.5 mm

[2] 78.0 mm

[3] Component height plus 1 mm

[4] 62.0 mm

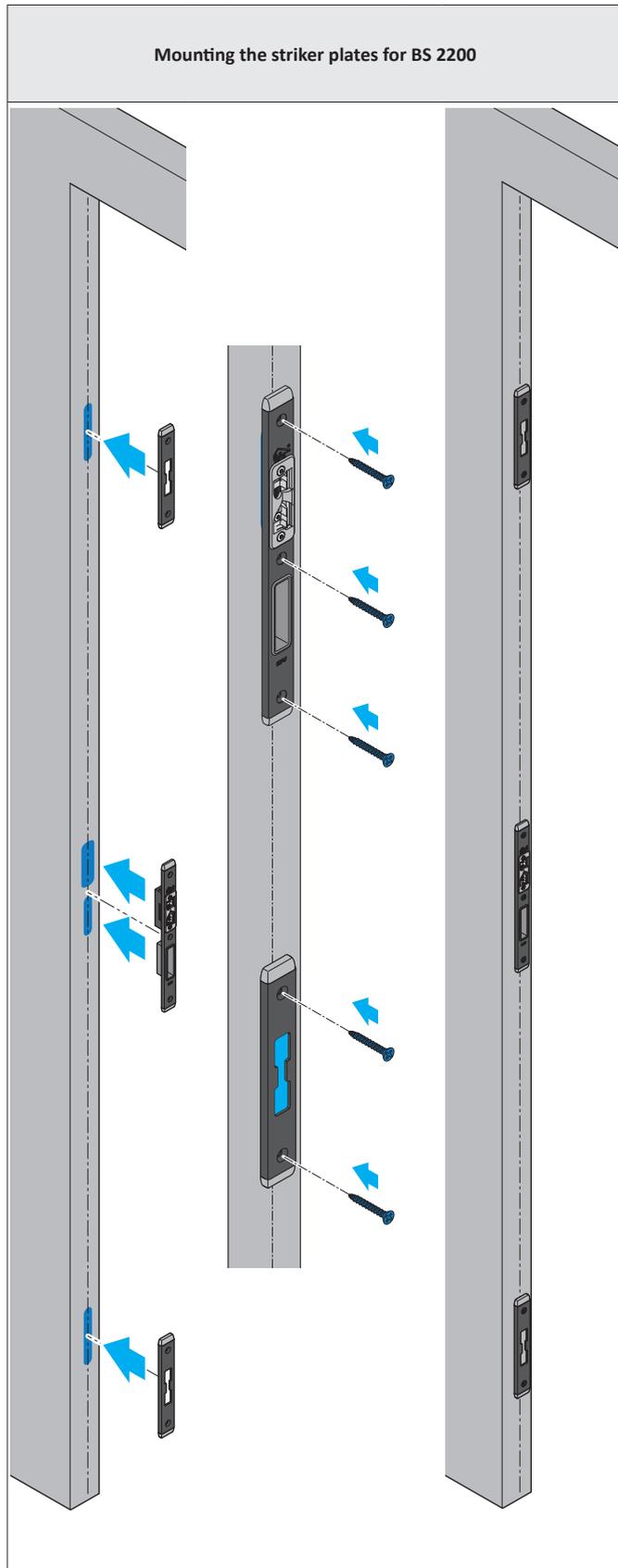
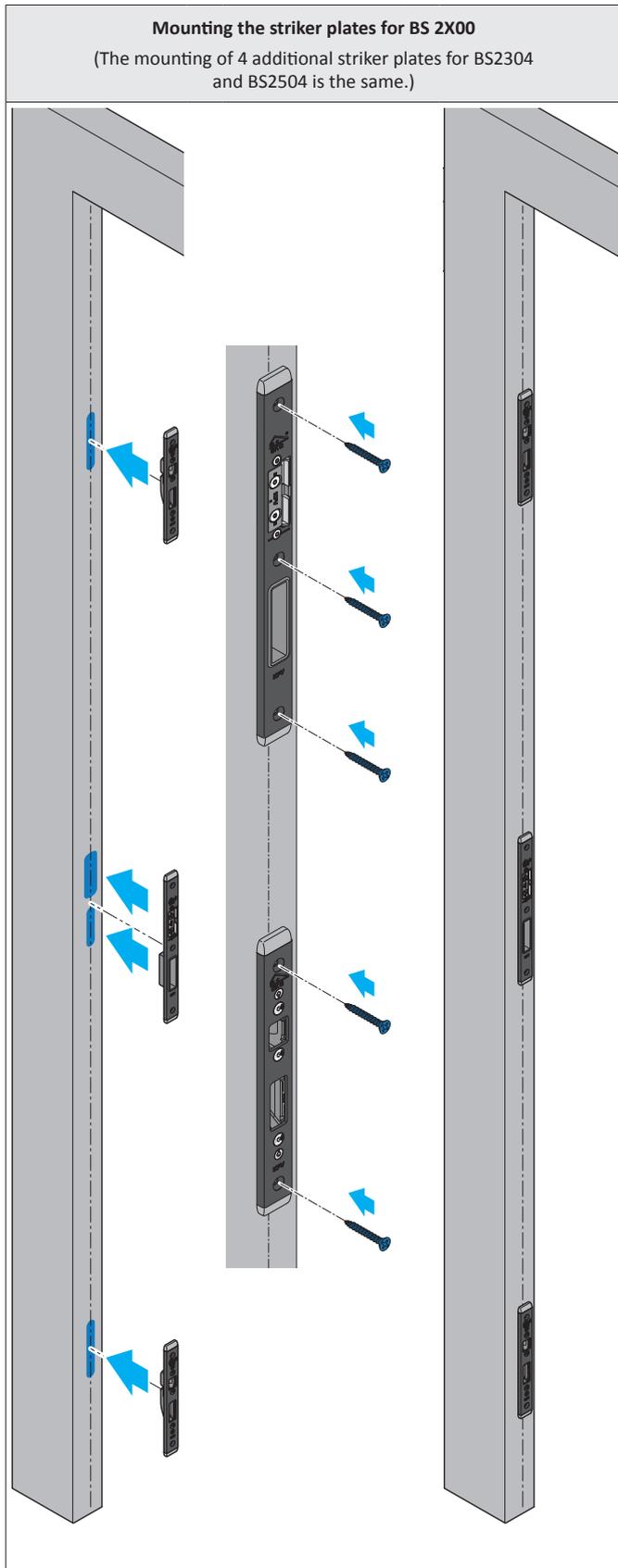
[5] 16.0 mm

### 5.8 Assembling the frame parts



Horizontal adjustment of the frame parts is performed in accordance with the system axis

- ▶ Insert the striker plates into the routed pockets of the frame and screw the striker plates into place.

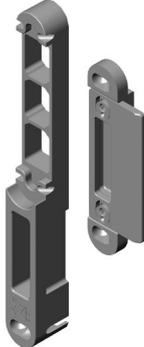


# KFV – assembly instructions

Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

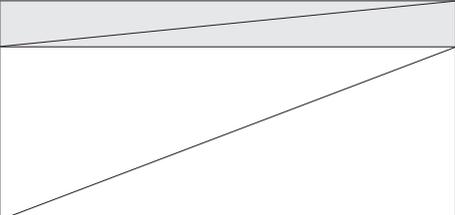
## 5.8.1 Screwing specifications for SKG certified frame parts

### Timber frames

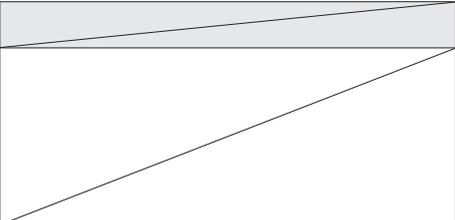
Frame part for main lock 881-083 + 402-00031 C/D	RC2	RC3
	<b>3 piece 4.0x40 mm</b>	<b>3 piece 4.5x45 mm</b> (SKH certified)

Frame part for auxiliary box with hook bolt 2500-267-2W	RC2	RC3
	<b>2 piece 4.0x40 mm</b>	<b>2 piece 4.5x45 mm</b> (SKH certified)

### Aluminium frames

Frame parts with SKG stamp	RC2	
	$\varnothing \geq 4.8 \text{ mm}$	

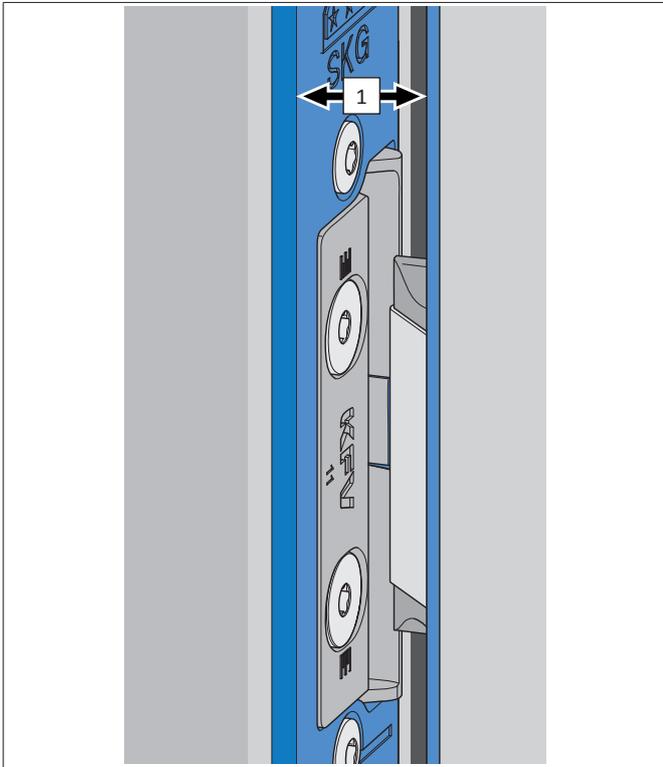
### PVC frames

Frame parts with SKG stamp	RC2	
	$\varnothing \geq 4.2 \text{ mm}$	

## 5.9 Adjustment of the airgap



Observe the assembly and operating instructions for the door hinges.



- ▶ In accordance with the enclosed assembly instructions of the door hinge manufacturer, adjust the airgap [1] between the faceplate and frame part.



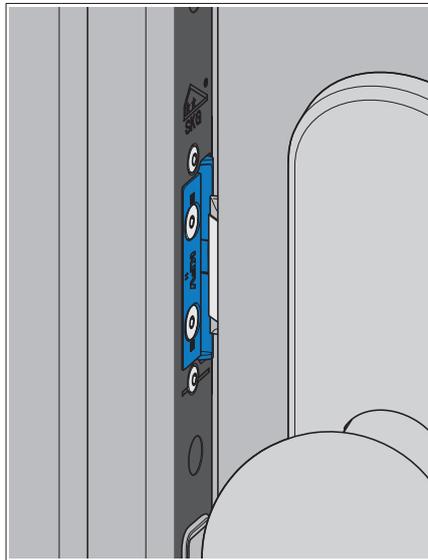
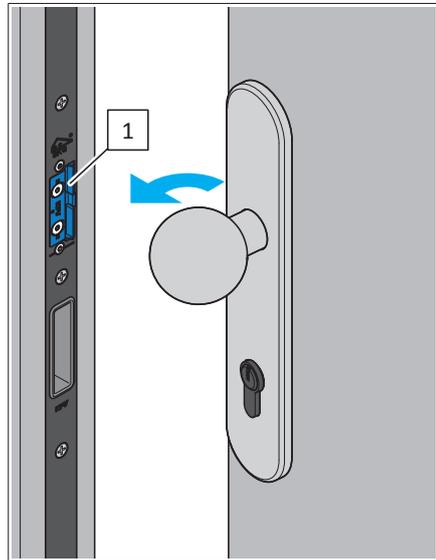
An airgap of  $3.5 \text{ mm} \pm 1.5 \text{ mm}$  must be adhered to in order to permit the KFV multi-point locks to function properly.

# KFV – assembly instructions

Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

## 5.9.1 Adjustment of the AT piece

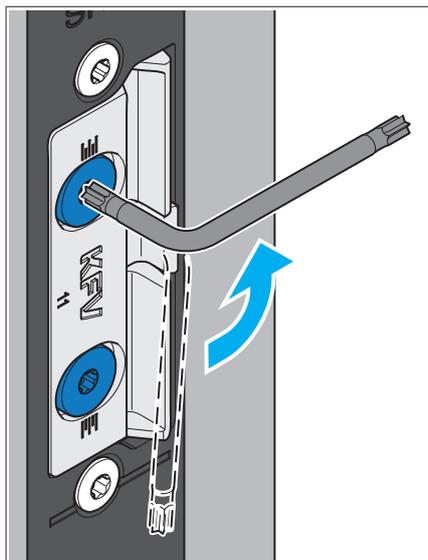
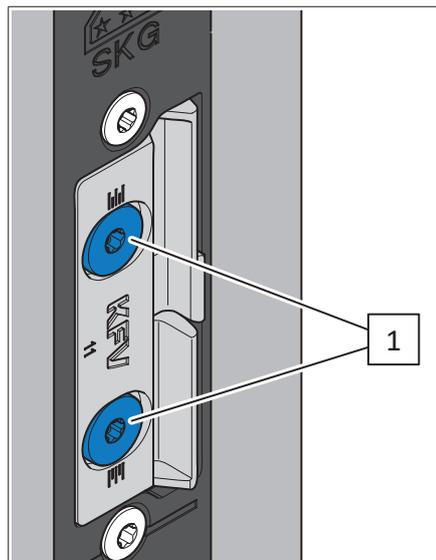
When the door is closed, the latch must engage in the AT piece with as little play as possible. The AT piece is horizontally adjustable for this purpose.



► Close the door.

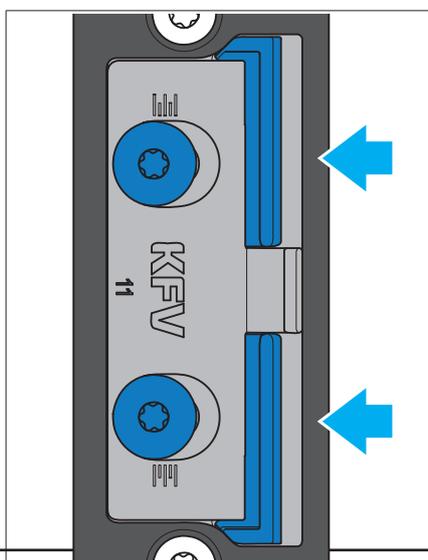
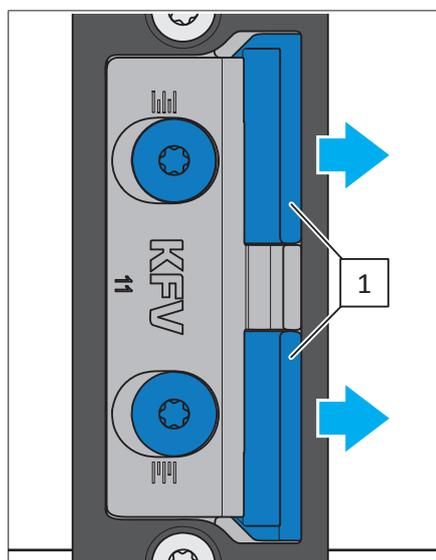
The latch must engage in the AT piece [1] and the door must remain locked.

- If the latch does not engage, or if the pressure on the door seal is too high, the AT-piece must be adjusted in the direction of the door leaf.
- The AT piece must be adjusted in the direction of the frame if the latch has too much play.



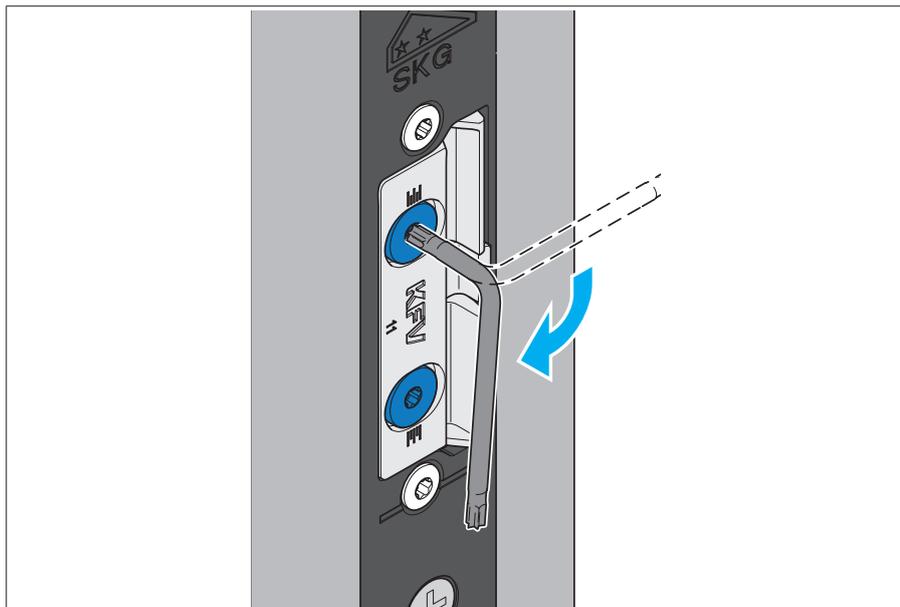
T 10

► Loosen the two adjustment screws [1].



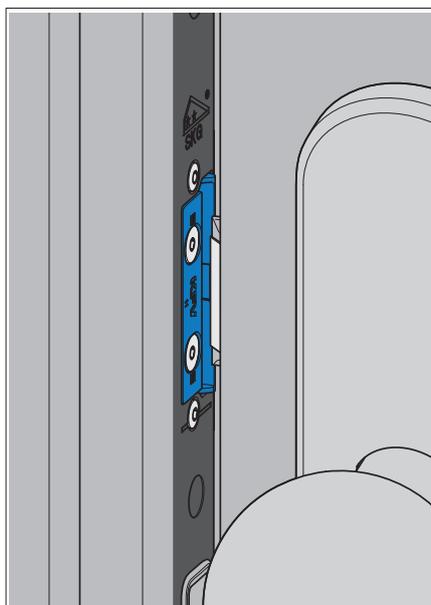
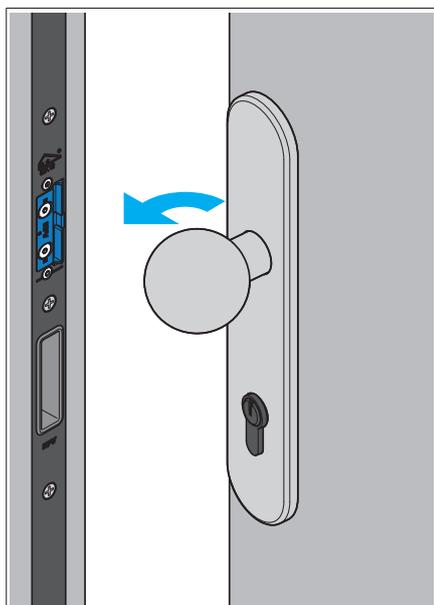
► Slide the fitting part [1]

- The pressure will decrease in the direction of the door leaf.
- The pressure will increase in the direction of the frame.



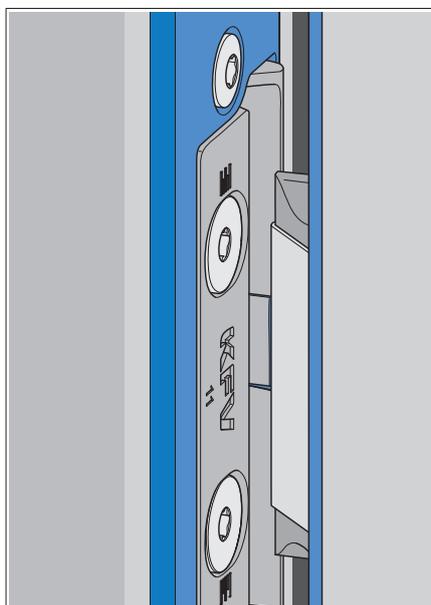
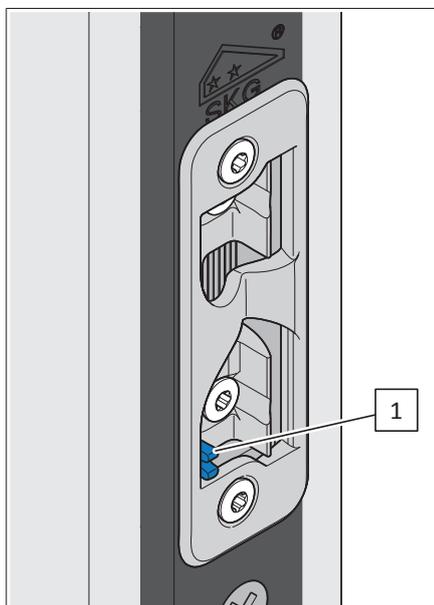
	T 10
	2.5 Nm

► Tighten the two adjustment screws.



► Close the door and check whether the latch engages properly.

Repeat the adjustments if necessary.



The day latch differs from the AT piece by means of a sliding handle [1], releasable fitting part.

- The door can be opened from the outside without a key when the fitting part is released .

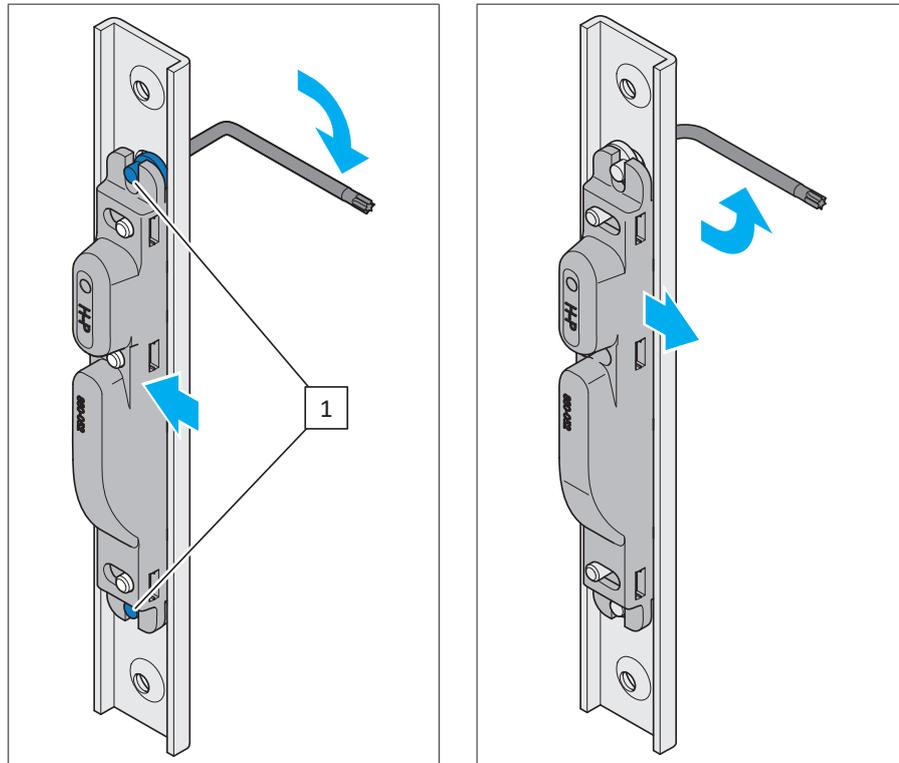
The horizontal adjustment of the fitting part is the same as with the AT piece.

# KFV – assembly instructions

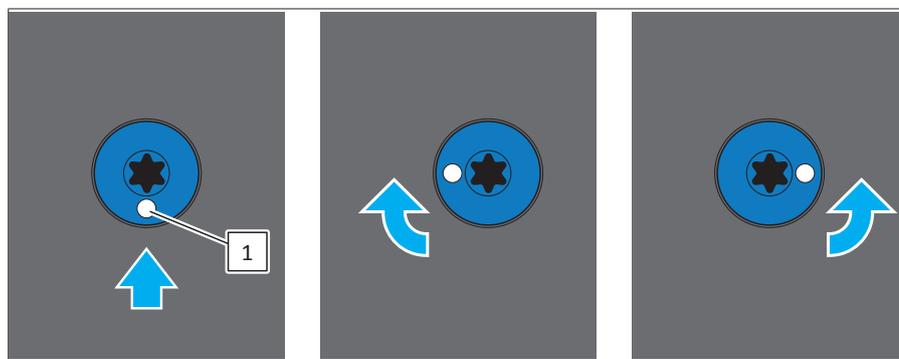
Multi-point locks, key operated, BS 2200, BS 230X, BS 250X

## 5.9.2 Correct the Q adjustment

The Q adjustment is moved laterally by  $\pm 2.5$  mm via two eccentric screws [1]; this lateral adjustment changes the contact pressure of the door on the frame seal.



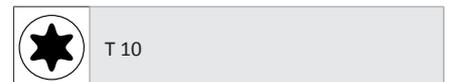
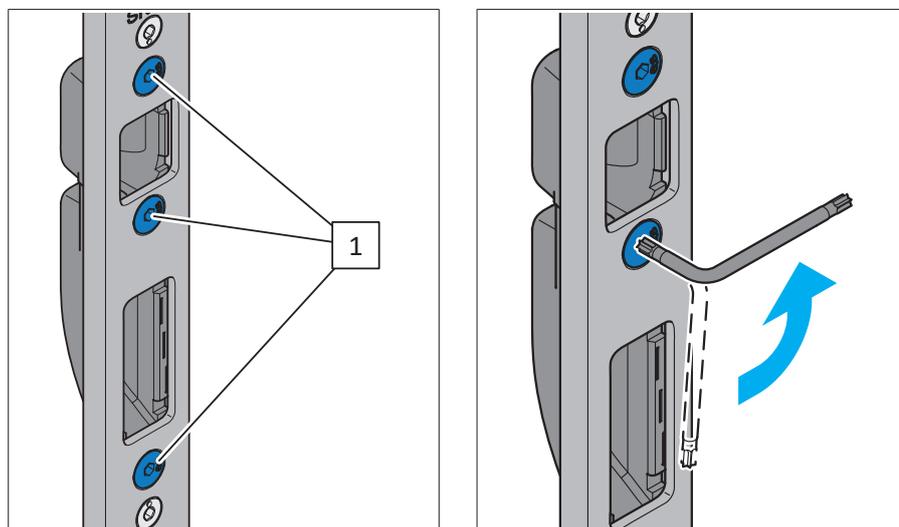
- If the contact pressure of the door on the frame seal is too low, the Q adjustment must be moved in the direction of the frame seal.
- If the contact pressure of the door on the frame seal is too high, the Q adjustment must be moved in the direction of the door leaf.



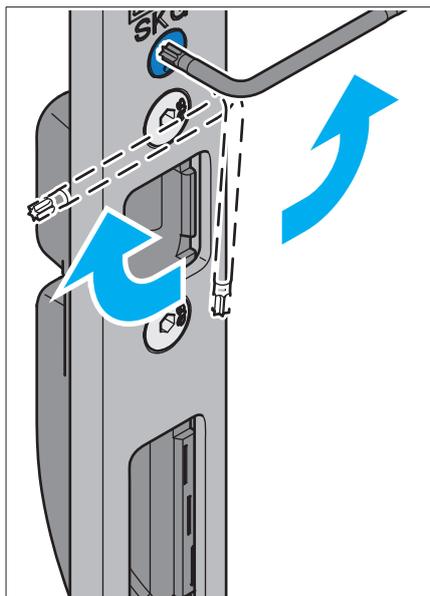
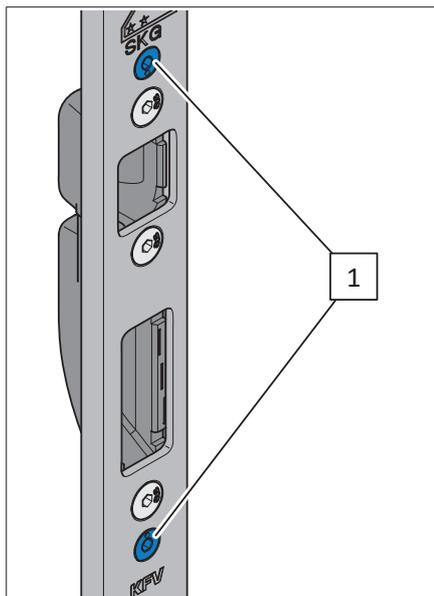
There is a marking [1] on the eccentric screw

The default setting of the Q adjustment is in neutral position. The marking points downwards.

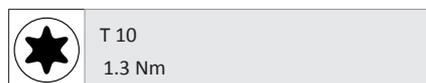
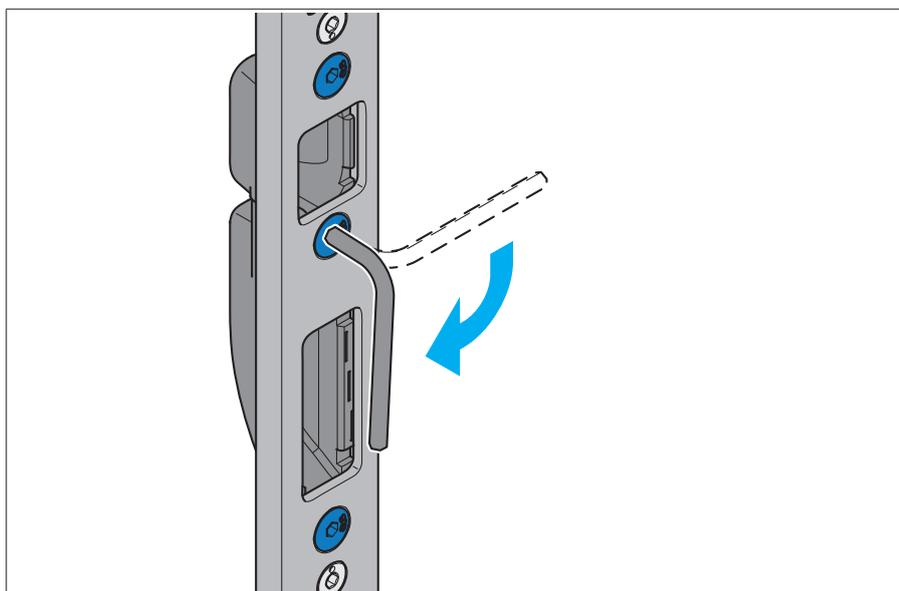
The max. travel range of the Q adjustment is reached when the marking is in a 90° position.



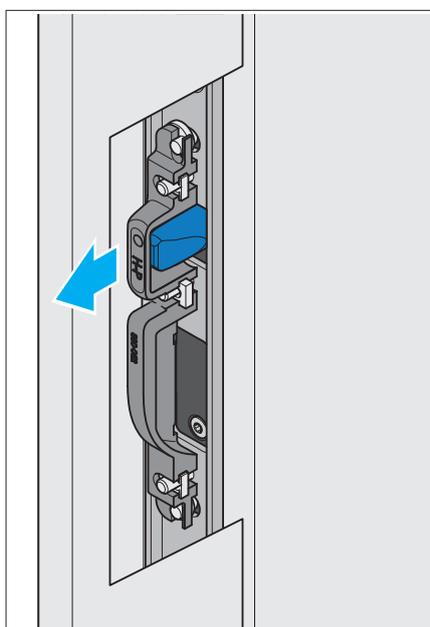
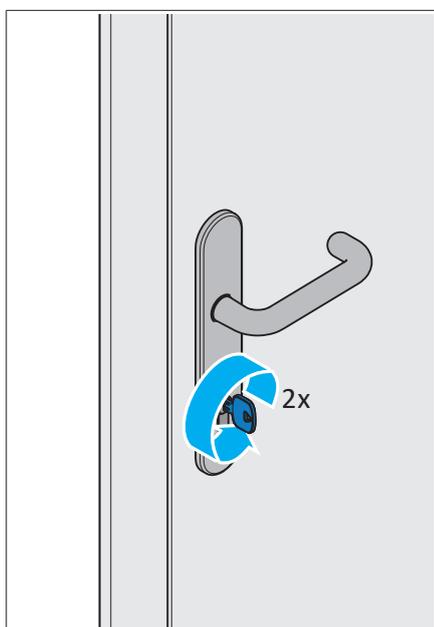
- ▶ Loosen the three fixing screws [1] of the Q adjustment.



- ▶ Turn the two eccentric screws [1] to the left or right up to 90°.



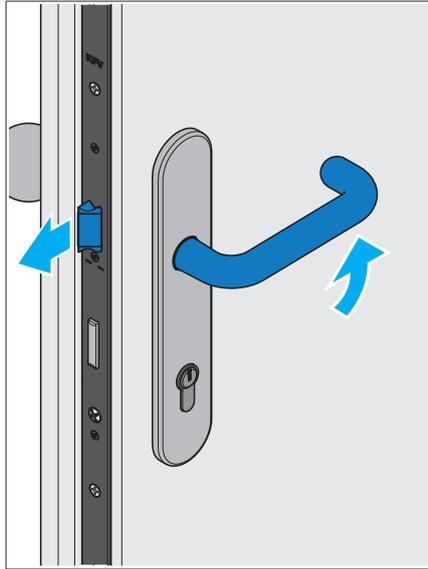
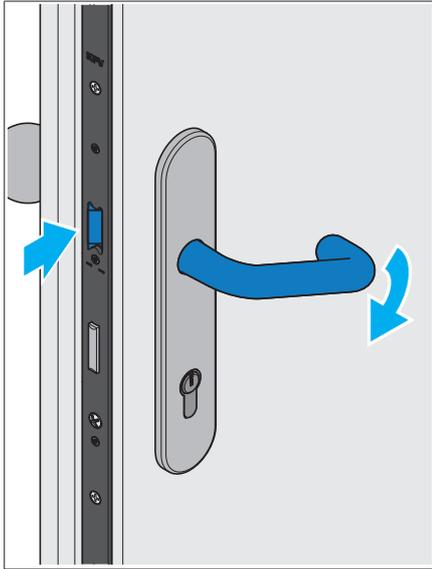
- ▶ Tighten the three fixing screws of the Q adjustment firmly.



- ▶ Close the door and lock with a double turn.
- Run the conical locking elements into the Q adjustment and laterally press the door against the seal.

## 6 Functional test

### 6.1 Check when the door is open



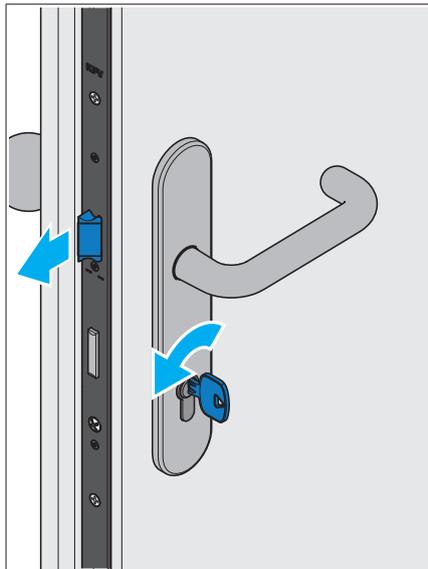
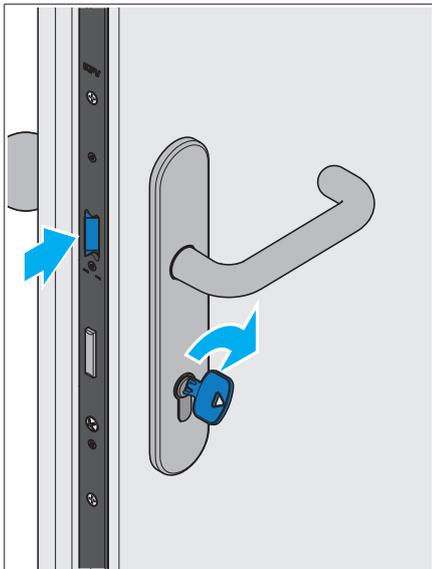
#### Check the functioning of the lever handle and the latch

- ▶ Press the lever handle down fully.

Check the function of the lever handle and the latch.

- ▶ Let go of the lever handle.

The lever handle must return to its original position by itself and the latch must project completely.



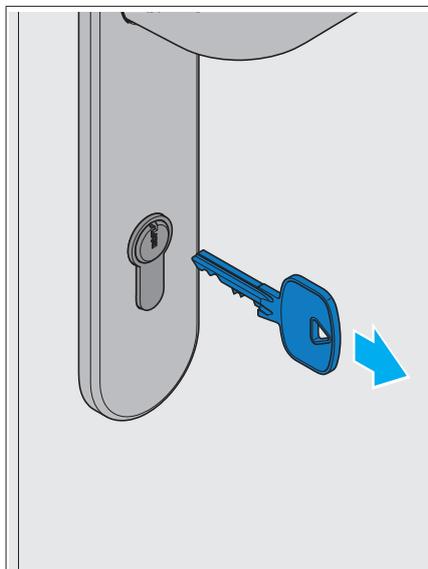
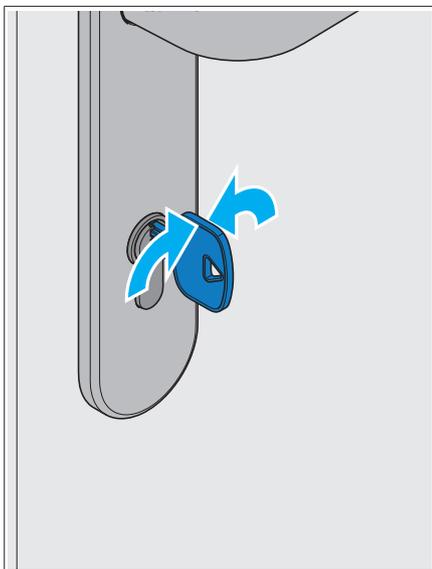
#### Check the functioning of the latch with the key (cylinder operated lock)

- ▶ Turn and hold the key in the release position.

The latch must retract completely.

- ▶ Let go of the key.

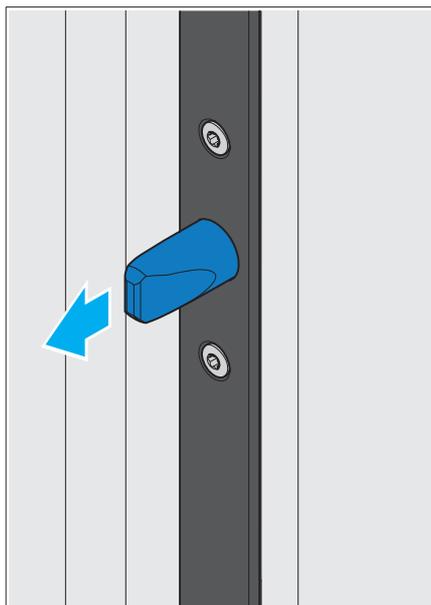
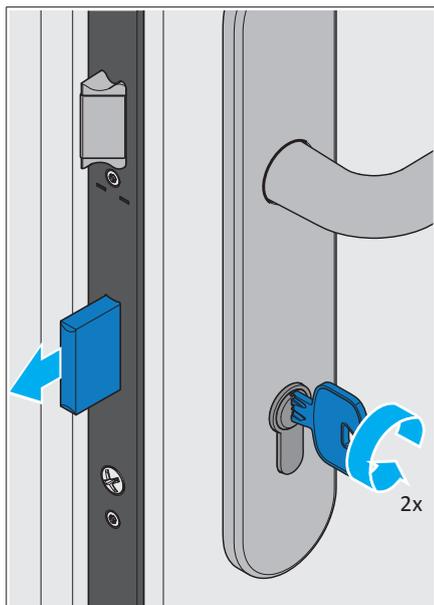
The latch must project completely.



#### Withdrawing the key

- ▶ Turn the key to the withdrawal position and withdraw the key.

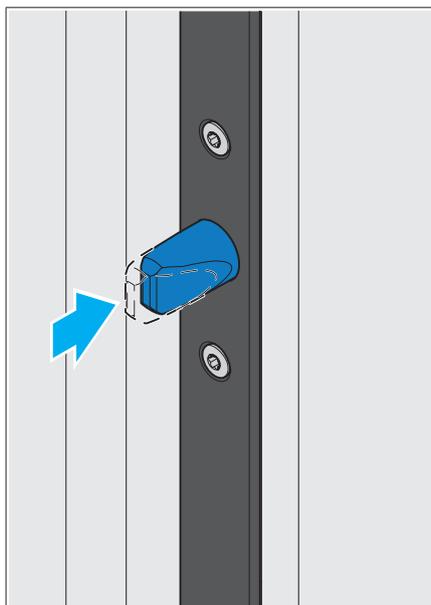
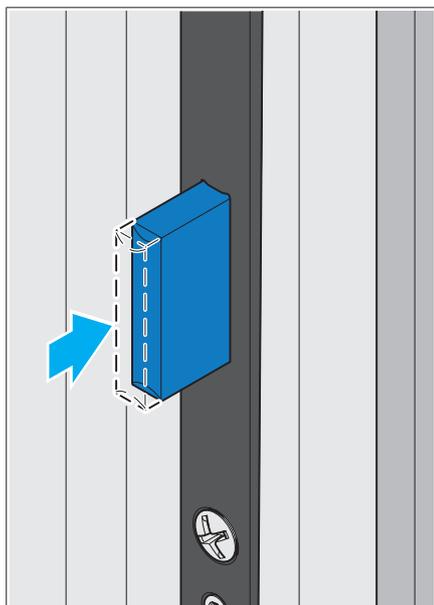
The key must be able to be withdrawn with ease from the profile cylinder.



**Projecting the locking elements**

- ▶ Turn the key in the locking direction with a double turn.

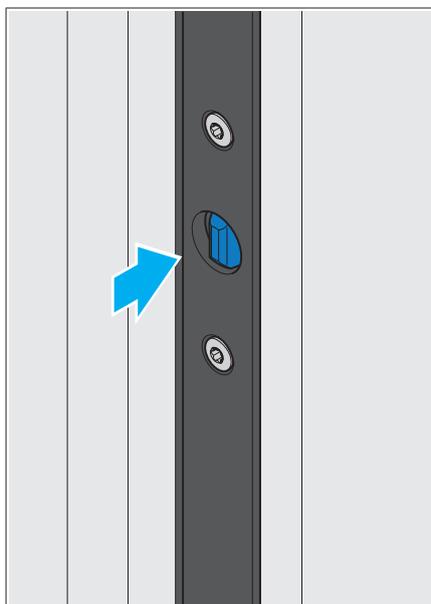
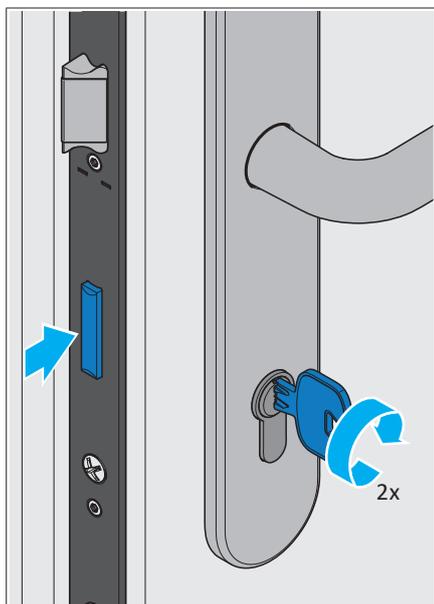
The main lock bolt and the locking elements of the auxiliary boxes must extend completely and with ease.



**Checking the counter-pressure retention**

- ▶ Try to press back the locking elements manually.

The locking elements must not move back in case of counter-pressure.

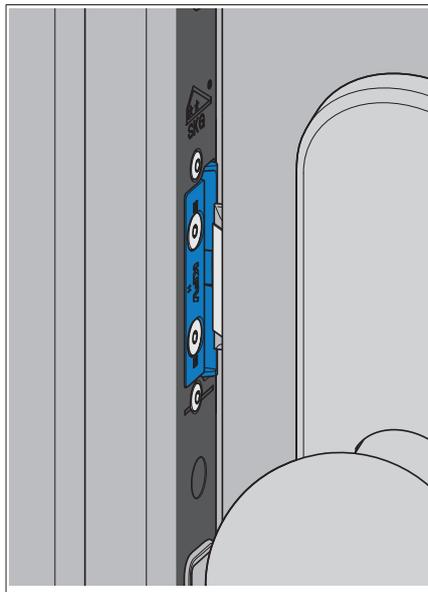
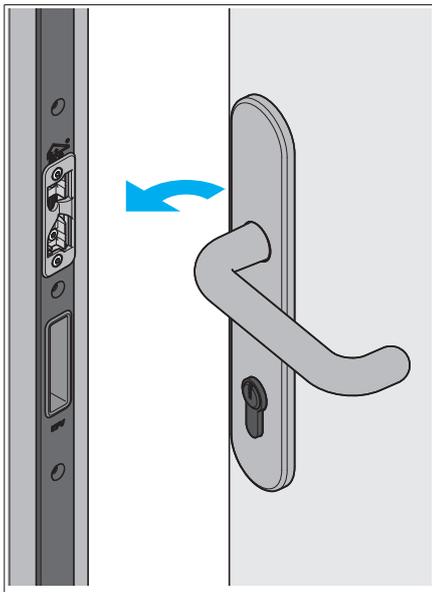


**Retracting the locking elements**

- ▶ Turn the key in the unlocking direction with a double turn.

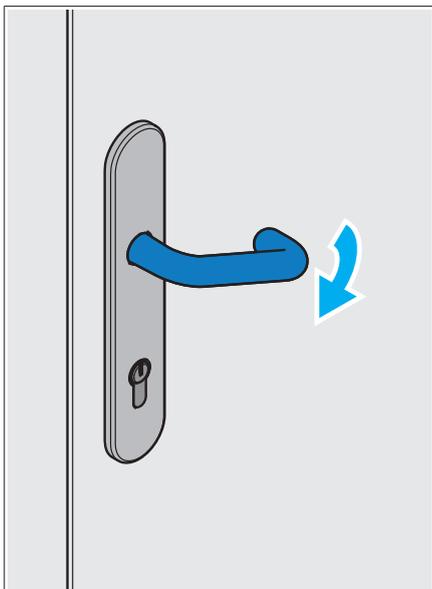
The main lock bolt and the locking elements of the auxiliary boxes must retract completely and with ease.

## 6.2 Check when the door is closed



### Checking the engaging of the latch

- ▶ Close the door.
- The door must close easily.  
The latch must engage properly in the AT piece.
- If the latch does not engage:
- ▶ Adjust the AT piece in the direction of the door leaf.
- If the latch has too much play:
- ▶ Adjust the AT piece in the direction of the frame, see chapter 5.9.1 "Adjustment of the AT piece".

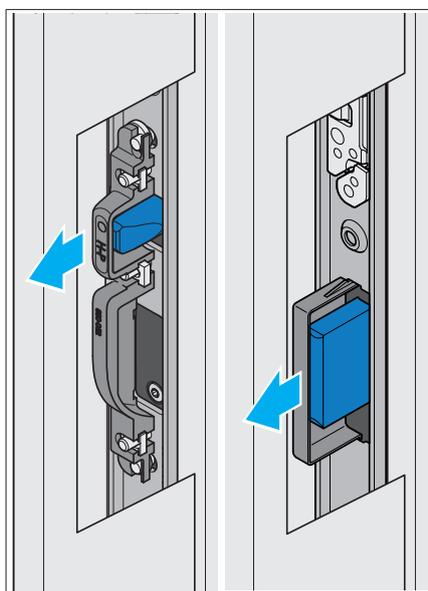
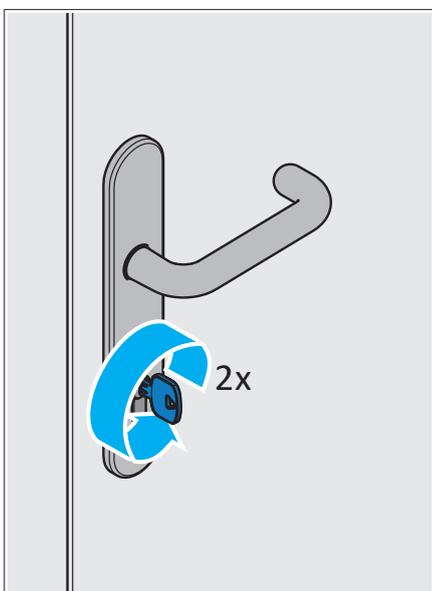


### Check the release of the latch with the lever handle

- ▶ Activate the lever handle and open the door.
- The latch must retract completely and release the door.

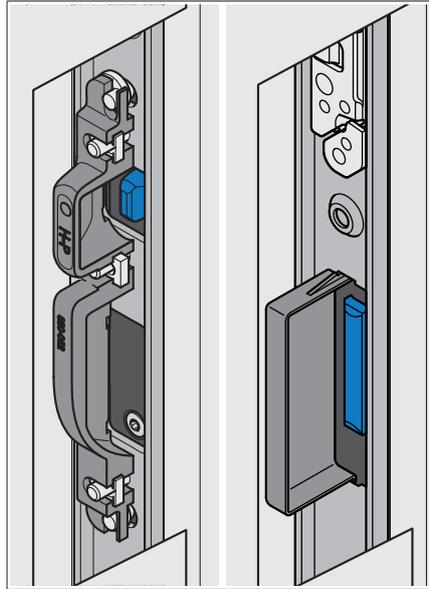
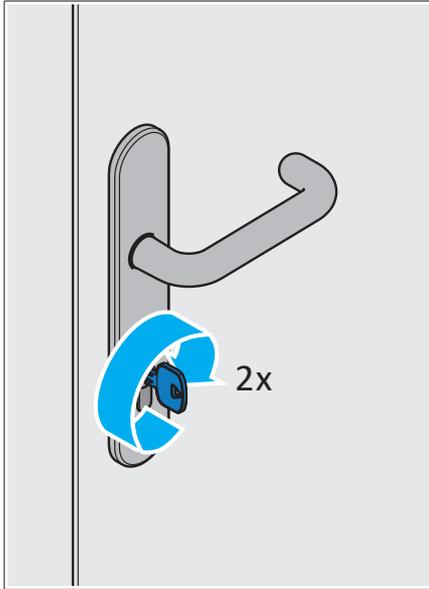
### Check the release of the latch with the key (cylinder operated lock)

- ▶ Turn the key in the release position and open the door.
- The latch must retract completely and release the door.



### Check the engaging of the locking elements

- ▶ Turn the key in the locking direction with a double turn.
- The locking elements must extend completely. The door leaf must be moved laterally onto the seal.



### Retracting the locking elements

- ▶ Turn the key in the unlocking direction with a double turn.

The main lock bolt and the locking elements of the auxiliary boxes must retract completely and with ease.

- ▶ Open the door.

The door must open easily.

## 7 Troubleshooting

### 7.1 Malfunction of the lever handle

**The lever handle does not return to its original position by itself.**

- ▶ Check that the lever handle is correctly seated.
- The lever handle must not have any contact with the rose or the plate or the gear box.
- ▶ Check the tightening torque of the screwing of the handle set.
- If the screwing is too tight, the routed pocket could be distorted and exercise lateral pressure on the gear box, causing sluggishness.
- ▶ Check the routed pocket of the main lock for adherence to dimensions.
- If, in spite of the specified dimensions being observed, the lever handle does not return to its original position by itself, the multi-point lock must be checked by KFV.
- If the routed pocket does not comply with the specified dimensions, it must be reworked.
- ▶ Repeat the test step with the reworked routed pocket.
- If the lever handle continues to fail to return to its original position by itself, the multi-point lock must be checked by KFV.

### 7.2 Malfunction of the profile cylinder

**The key cannot be pulled out.**

- ▶ Dismount the cylinder lock and check for malfunctions.
- The cylinder lock must be replaced if it does not function properly.
- ▶ Repeat the test step with the new cylinder lock.
- If the key still cannot be pulled out, the multi-point lock must be checked by KFV.

### 7.3 Sluggishness during locking and release

- ▶ Check the adjustments of the AT piece, see chapter 5.9.1 “Adjustment of the AT piece”.
- ▶ Check the adjustments of the Q adjustments, see chapter 5.9.2 “Correct the Q adjustment”.
- Adjust the AT piece and the Q adjustment in the direction of the door leaf to reduce the lateral contact pressure.
- ▶ Repeat the test step with the readjusted AT piece and the readjusted Q adjustment.
- If this sluggishness persists, the dimensions of the routed pockets of the main lock and auxiliary box must be checked.
- When the routed pockets are compliant with the specified dimensions and the sluggishness persists, the multi-point lock must be checked by KFV.
- If the routed pockets do not comply with the specified dimensions, they must be reworked.
- ▶ Repeat the test step with the reworked routed pockets.



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