

CX6172/4

Clex prime
Electronic door handle



Operating and
assembly manual

Imprint

Operating and assembly manual
Electronic door handle CX6172/4

Document number: 06C6

Version: 1.41

Status: 09.07.2018

Manufacturer

Uhlmann & Zacher GmbH
Gutenbergstr. 2–4
97297 Waldbuettelbrunn
Germany
Tel.: +49 931 40672-0
E-Mail: contact@UundZ.de
<http://www.UundZ.com>

This operating and assembly manual is copyright protected. The information contained this manual should not be reproduced, distributed or used for competitive purposes or shared with third parties. It is likewise forbidden to manufacture any component using this manual without prior written consent.

Table of contents

| | |
|--|-----------|
| 1 About this document..... | 5 |
| 1.1 Warnings | 5 |
| 1.2 Symbols | 5 |
| 2 Security | 6 |
| 2.1 Proper use | 6 |
| 2.2 Improper use..... | 6 |
| 2.3 General safety instructions..... | 6 |
| 3 Product description | 7 |
| 3.1 Functional description | 7 |
| 3.2 Design..... | 11 |
| 3.3 Versions..... | 14 |
| 3.4 Technical data | 15 |
| 3.5 Standards | 19 |
| 3.6 Management accessories | 20 |
| 4 Assembly..... | 21 |
| 4.1 Assembly instructions | 21 |
| 4.2 Assembly | 22 |
| 5 Commissioning | 34 |
| 5.1 Managing the locking system..... | 34 |
| 5.2 Configuring the door handle | 34 |
| 6 Operation | 35 |
| 6.1 Automatic wake up | 35 |
| 6.2 Opening the door..... | 35 |
| 6.3 Toggling the door handle..... | 35 |
| 6.4 Signals | 37 |
| 7 Cleaning and maintenance..... | 38 |
| 7.1 Cleaning..... | 38 |
| 7.2 Maintenance | 38 |
| 8 Faults during operation | 41 |
| 8.1 Fault indications | 41 |
| 9 Disassembly and Disposal..... | 42 |
| 9.1 Disassembly | 42 |
| 9.2 Disposal | 44 |
| 10 FAQ | 45 |
| 10.1 Door handle does not come to rest position..... | 45 |
| 10.2 Door does not open even though the motor is running | 45 |

| | | |
|----|---------------|----|
| 11 | Glossary..... | 46 |
|----|---------------|----|

1 About this document

This operating and assembly manual describes the Clex prime electronic door handle (in short: CX6172) and the electronic door fitting (in short: CX6174). It is part of the product and contains important information that is necessary for proper operation and maintenance.

This operating and assembly manual is valid for all versions of CX6172 and CX6174 and is intended for technicians, who are responsible for assembling and disassembling, as well as for end customers.

- ▶ Read this operating and assembly manual carefully for smooth and safe operation and follow the instructions given in it before operating the door handle.
- ▶ Keep the operating and assembly manual in a safe place.
- ▶ After the installation, hand over the manual to the end customer and make sure that the customer familiar with its use.

Uhlmann & Zacher GmbH does not assume any responsibility for disruptions or hazards such as as non-access to injured personnel, malfunctions, property damage or other damages resulting from non-compliance with this operating and assembly manual or incorrectly configured door handles.

- ▶ If there are still any doubts after reading this operating and assembly manual, please contact your respective dealer or Uhlmann & Zacher GmbH directly.

1.1 Warnings

Warnings warn against hazards which may arise when using the door handle. There are two levels of warnings that can be identified based on the signal word:

| Signal word | Meaning |
|-------------|---|
| CAUTION | Indicates a hazard with a low risk that can lead to mild or moderate injury if not avoided. |
| ATTENTION | Indicates a hazard that results in property damage. |

1.2 Symbols

The following symbols may be used in this manual:

- ▶ This symbol indicates a usage instruction that must be followed by the user.
- This symbol indicates an entry in a list.



This symbol indicates useful and important information.

2 Security

2.1 Proper use

The electronic door handle CX6172/4 is intended to be installed in building doors and for opening the doors. It is compatible with the commonly used European standards for locking systems. The CX6172/4 can be used indoors as well as outdoors (depending on the product version).

The different versions allow it to be used in all the common doors such as wood, steel and aluminum doors as well as doors with narrow frames having a backset of more than 18 mm (depending on the product version).

The assembly should be carried out only by trained technicians. Only the components approved by Uhlmann & Zacher should be used for installation and maintenance.

Any other use is considered as improper and may result in damage to material or even in physical injury.

2.2 Improper use

The CX6172/4 should not be used for locking up people or animals as well as supplies required in case of emergencies (for example defibrillator, emergency medication, fire extinguishers, etc.).

The CX6172/4 should not be used in potentially explosive surroundings.

Specially approved versions that are intended for the purpose should be installed and used in fire, smoke resistant doors and emergency exit locks. The applicable regulations should be followed.

The CX6172/4 should not be used if the housing or the electronics is damaged. Changes or retrofits to the product are not allowed. The knob module should not be used outside the given specifications.

The CX6172/4 should not be used in doors that do not open freely or in doors or lock cases that are damaged. The product should not be used as a stopper against obstacles.

2.3 General safety instructions

Follow these basic safety instructions when using the door handle:

- ▶ Installation and battery replacement should only be done by qualified technicians according to the instructions in this operating and assembly manual.
- ▶ Do not use the door handles in potentially explosive areas.
- ▶ Do not make any kind of modifications to the door handles, with the exception of those described in this operating and assembly manual.
- ▶ Do not apply paints or acids to the door handles.
- ▶ Do not heat the door handle and battery beyond the specified storage temperature.
- ▶ Use only original spare parts and accessories from Uhlmann & Zacher to prevent malfunctions and damages.
- ▶ Only use batteries procured from Uhlmann & Zacher.

3 Product description

3.1 Functional description

The electronic door handle CX6172/4 is a product in the Clex prime system. The reading unit, the communication electronics, the mechanical system and power supply, are integrated within the door handle.

Different transponder carriers can be used as key in the CX6172/4, for example, ISO card or key fob.

CX6172/4 has the following system properties:

- Up to 60,000 key/locking authorizations can be stored
- Up to 512 events can be recorded in the fitting
- Up to 32 holidays can be configured
- Automatic summer and winter time changeover
- 5,296 locking groups
- Permanent engagement possible without additional power consumption
- Up to 20 time circuits can be programmed for daily activation (automatic permanent engagement)
- Engagement time can be programmed from 1 to 15 seconds
- Can be connected to the IDS module CX6934
- Pre-configured by default for 868 MHz wireless networking
- Inner fitting fixed mechanically (only for one-sided electronic authorization)
- Different handle shapes available
- Suitable for all doors having a thickness of 30 mm to 110 mm
- Square thickness of 7 mm, 8 mm, 8.5 mm, 9 mm and 10 mm are available
- No cabling required
- Can be combined with other systems (for example Clex private)
- Versions for HITAG 1, MIFARE® and LEGIC® Transponder can be supplied

3.1.1 Authorisations

Group Access Rights

There are up to 296 groups in the Clex prime locking system. If the door handle is a member of one or more of these groups, then all those keys that are also members of this group are authorized to open the door handle - provided the key authorizations are not restricted by time zone settings.

Extra Group Access Rights

In addition to the normal groups, there are 5000 other groups in the Clex prime locking system. Each key can be a member of up to 16 of these other groups.

Individual authorisations

An individual authorization entitles a key to operate one door handle. Depending on the type of key (writable, not writable), the individual authorizations are either stored on the key (up to 16 individual authorizations per key) or in the door handle (up to 60,000 individual authorizations).

Toggle authorisation (permanent engagement)

Keys with toggle authorization can permanently engage a door handle, hence the door can be opened even without a key.

Four-Eyes-Group

The four-eyes group is used to open a door handle only when two different keys are held up, out of which one should be a member of the four eyes group and the other should have normal authorization for the door handle. Which group is defined as the four-eyes group can be configured for each door handle.

Intrusion detection system (IDS) group

In combination with a CX6934 IDS module, the door handle can be used to enable and disable the intrusion detection system (IDS). To do this it is necessary to define a group (IDS group) in the door handle that is authorized to enable / disable the IDS.

In addition, a firefighters group can be defined, which is always authorized to open the door regardless of the status of the intrusion detection system. In contrast to the group access rights of the fire brigade, the switching status of the intrusion detection system is first queried for all the other group access rights before granting the access right.

3.1.2 Time zones

You can restrict the locking access right in terms of time by using a time zone. The time restrictions along with the locking authorizations are programmed in the key in the Clex prime system.

The following time restrictions are possible:

- Total interval
- Day interval
- Weekly schedule
- Holidays
- Special time zones



For detailed information on the different time zones, please refer to the Keyvi software manual.

3.1.3 Automatic expiry date

Using the automatic expiry date, it is possible to restrict the validity of a key regardless of the time zones applicable for the key.



For detailed information on the automatic expiry date, please refer to the Keyvi software manual.

3.1.4 Radio network

If a corresponding radio network is installed in the building, then the door handle CX6172/4 can be integrated with this network. The following functions can be then be executed via radio:

- Programming access rights
- Changing access rights
- Configuring time zones / timer circuits
- Reading event log
- Engaging the door handle (for the duration defined by locking time)
- Viewing battery and maintenance messages
- Reading the battery value
- FW update

3.1.5 Key feedback

Even for door handles operated offline, there is an option to send the battery status of the door handle to the Keyvi management software. To do this, the battery status of the 16 most recently operated door handles is stored on the key. The battery status information is sent to Keyvi and deleted from the key if the key

is read by an automatic programming terminal or a programming station. The prerequisite is that the key should have been prepared for writing the information and the option *Key feedback* should be set in the door handle.

Key Feedback can only be used with the transponder types MIFARE[®] and LEGIC[®] advant.

3.1.6 Battery management

The electronic door handle CX6172/4 comes with a battery management system, which indicates the need for battery replacement by means of a visible and audio signal, when the battery power reduces (capacity loss) during the final 1,000 operations of the battery (see chapter 7.2.17.2.1 Battery Replacement).

The signal is given out in two phases:

Phase 1 The battery needs to be changed soon.

If an authorized key is held in front of the reading unit, then the engaging of the door handle is accompanied with flashing of red light (5 times) and 5 short audible signals.

Phase 2 The battery needs to be changed immediately.

If an authorized key is held in front of the reading unit, then the red LEDs flash (5 times) accompanied by 5 short audible signals. The engaging of the door handle is delayed by 5 seconds, during which time the green LEDs flash.

The access data, the events log, the settings of the door handle and the time are stored on non-volatile memory and thus retained even when there is no power supply, for example, when changing the battery or if the battery discharges completely. The time is written to the non-volatile memory once every 30 minutes. If the power supply remains off, then the clock comes to a standstill after a few seconds and starts running from the last stored value onwards after the power supply is restored.

3.1.7 Event log

The last 512 events of the door handle are stored in the event log.

The following events are logged:

- Unauthorised
- Authorised
- Service opening
- Timer circuit open
- Timer circuit closed
- Reset
- Summer time On
- Summer time Off
- Coupling error
- Battery Ok
- Battery weak Phase 1:
- Battery weak Phase 2:
- Manipulation
- Toggle off
- Toggle On
- Unknown position
- Service mode
- Radio diagnosis
- Automatic wake up off
- Wireless opening not OK
- Wireless opening OK

The following information are recorded for every event: Event code, date, time, key code if necessary.

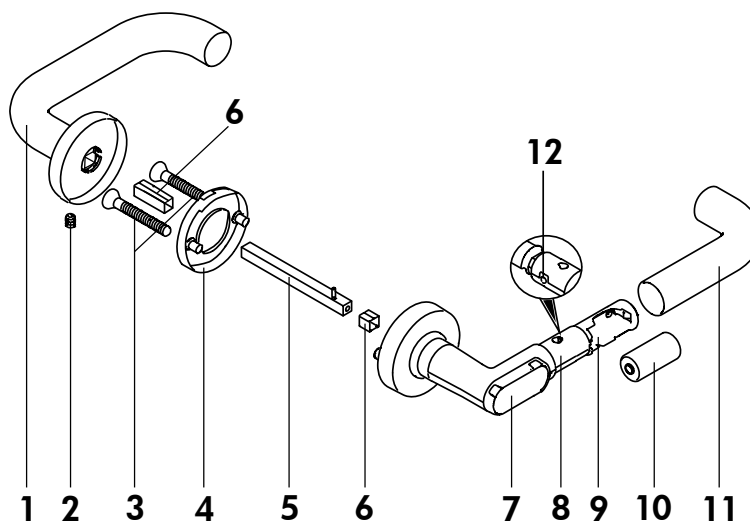
Event logging can be enabled or disabled for each door handle individually, to comply with specific data privacy guidelines.

The event log can be read using the service unit CX6510 or using ClexTouch CX6522. If the door handle is located in a Keyvi radio network, it can also be read via radio.

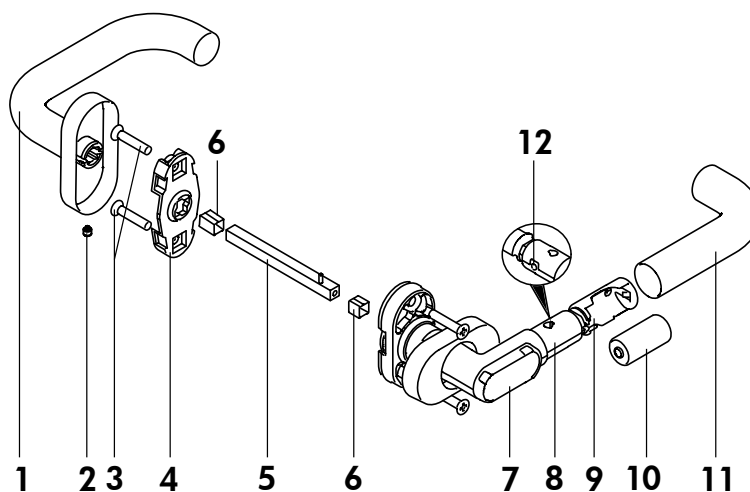
3.2 Design

3.2.1 One-sided electronic authorization

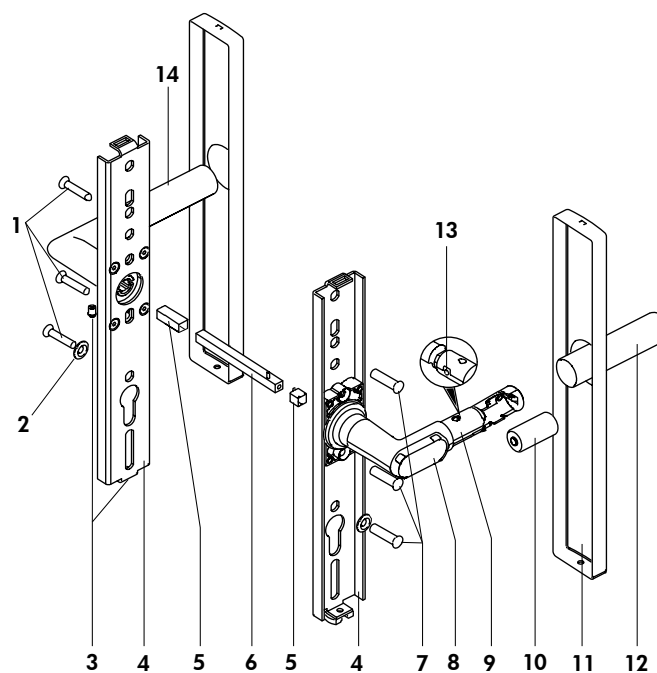
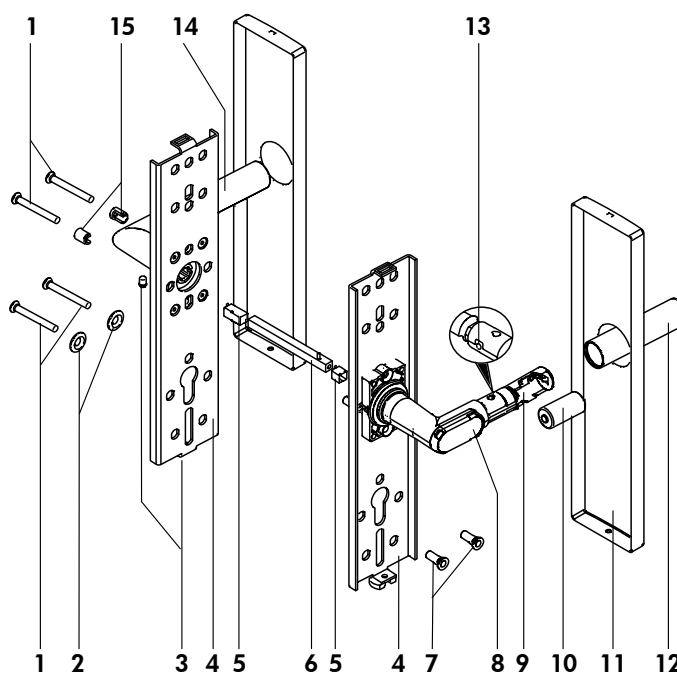
Circular rosette



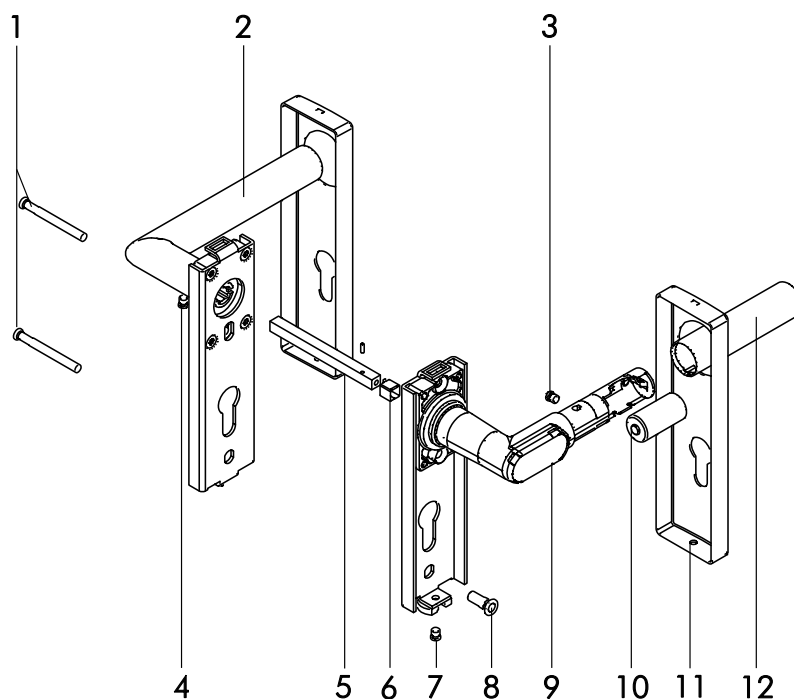
Oval rosette



| | | | |
|---|---|----|--------------------------------|
| 1 | Mechanical door handle | 7 | Reading unit |
| 2 | Locking screw | 8 | Electronic door handle |
| 3 | Mounting screw | 9 | Battery compartment |
| 4 | Opener holder (with bayonet lock) | 10 | Battery |
| 5 | Square pin with spiral clamping | 11 | Gripping sleeve |
| 6 | Adapter sleeve (only for 7 mm square pin) | 12 | Grub screw for gripping sleeve |

Long narrow plate**Long wide plate**

- | | | | |
|---|---|----|--------------------------------|
| 1 | Mounting screws | 9 | Electronic door handle |
| 2 | Washers | 10 | Battery |
| 3 | Locking screws | 11 | Plate cover |
| 4 | Base plate | 12 | Gripping sleeve |
| 5 | Adapter sleeve (only for 7 mm square pin) | 13 | Grub screw for gripping sleeve |
| 6 | Square pin with spiral clamping | 14 | Mechanical door handle |
| 7 | Threaded sleeves | 15 | Screw-type sleeve |
| 8 | Reading unit | | |

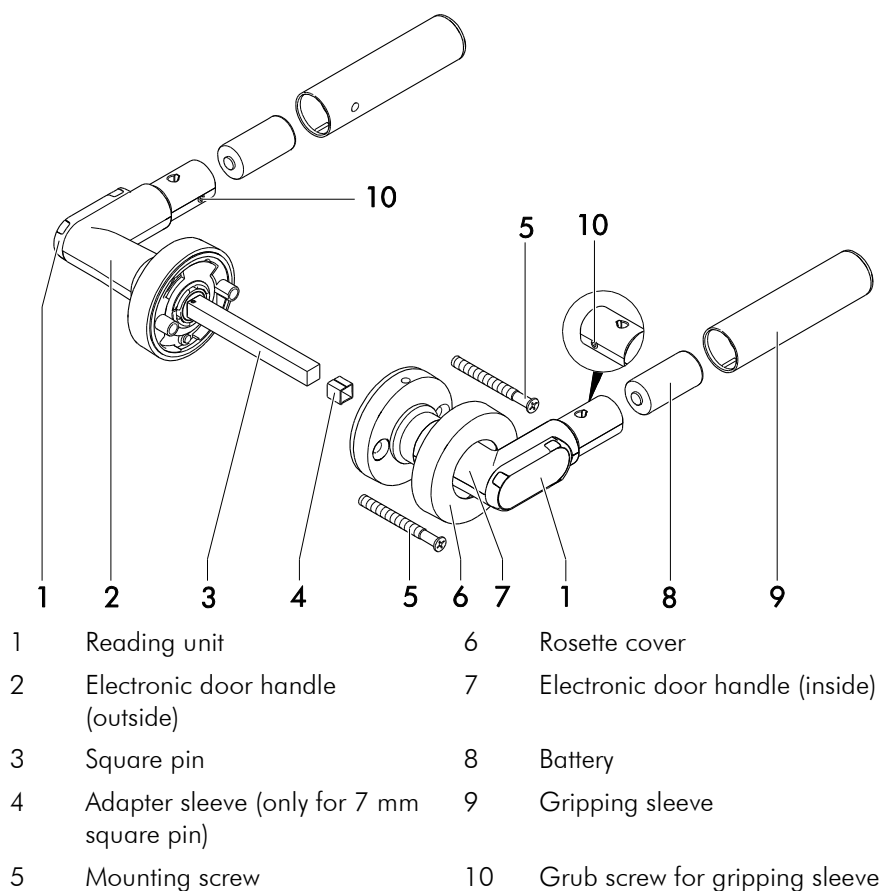
Short plate

- | | | | |
|---|---|----|------------------------|
| 1 | Mounting screws | 7 | Locking screw |
| 2 | Mechanical door handle | 8 | Threaded sleeve |
| 3 | Grub screw for gripping sleeve | 9 | Electronic door handle |
| 4 | Locking screw | 10 | Battery |
| 5 | Square pin with spiral clamping | 11 | Plate cover |
| 6 | Adapter sleeve (only for 7 mm square pin) | 12 | Gripping sleeve |

3.2.2 Two-sided electronic authorization



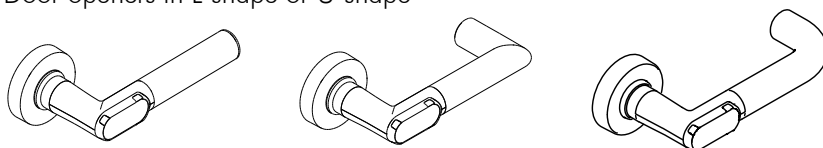
Two-sided electronic authorization is possible only in certain combinations of the variants round rosette, oval rosette, long plate narrow and long plate wide.



3.3 Versions

Different opener shapes and versions are available:

- Door openers in L-shape or U-shape



- One or two-sided electronic authorization
- Circular rosette, oval rosette, long narrow plate and long wide plate
- For door hinged on the right or left
- For indoor or outdoor use
- For emergency exit locks, fire and smoke resistant doors
- Different transponder types: 125 kHz (HITAG/EM), MIFARE®, LEGIC®
- Various square sizes (7 mm, 8 mm, 8,5 mm, 9 mm, 10 mm)
- Basic version without date/time and event memory

3.4 Technical data

3.4.1 General technical data

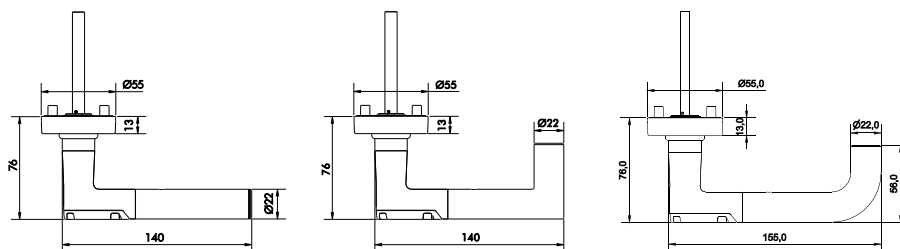
| Name | Value |
|------------------------------------|--|
| Minimum backset | Round rosette: 28 mm |
| | Oval rosette: 18 mm |
| | Long plate narrow: 22 mm |
| | Long plate wide: 33 mm |
| Door thickness | 30 mm to 110 mm |
| Maximum door weight | 300 kg |
| Swivel angle | 45° |
| Transponder versions | Version 1: 125 kHz (868 MHz) EM4102, EM4450, HITAG 1, Active transponder (868 MHz) Version 2: MIFARE® 13.56 MHz (868 MHz) MIFARE® Classic, MIFARE® DESFire®, Active transponder (868 MHz) Version 3: LEGIC® 13.56 MHz (868 MHz) LEGIC® prime, LEGIC® advant, MIFARE® DESFire®, Active transponder (868 MHz) |
| Radio | Frequency: 868.3 MHz Maximum transmission power: 1 mW |
| Power supply, Rated voltage | CR123A 3V battery (1 piece), 3 volts |
| Battery life | 125 kHz: up to 90,000 operations or 10,0 years MIFARE®: up to 160.000 operations or 9.8 years LEGIC®: up to 70.000 operations or 7.0 years |
| Power consumption in sleep mode | 125 kHz: 0.03 mW MIFARE®: 0.06 mW LEGIC®: 0.08 mW |

3.4.2 Ambient conditions

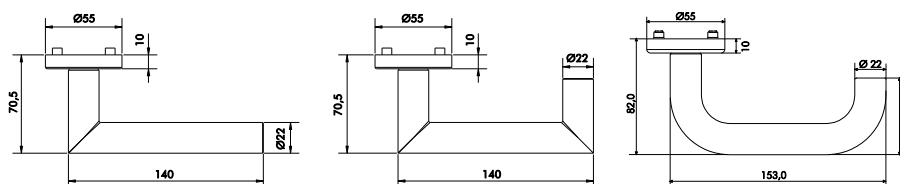
| Name | Value |
|---|--|
| Operating temperature | +5°C to +55°C (indoor version) |
| | -25°C to +65°C (outdoor version) |
| Storage temperature | -40°C to +65°C |
| Maximum relative humidity (door handle) | Up to 95% non-condensing |
| Installation location | Indoor or outdoor (depending on the product model) |
| Protection class | Version for indoor use: IP40 |
| | Version for outdoor use: IP66 |

3.4.3 Dimensions

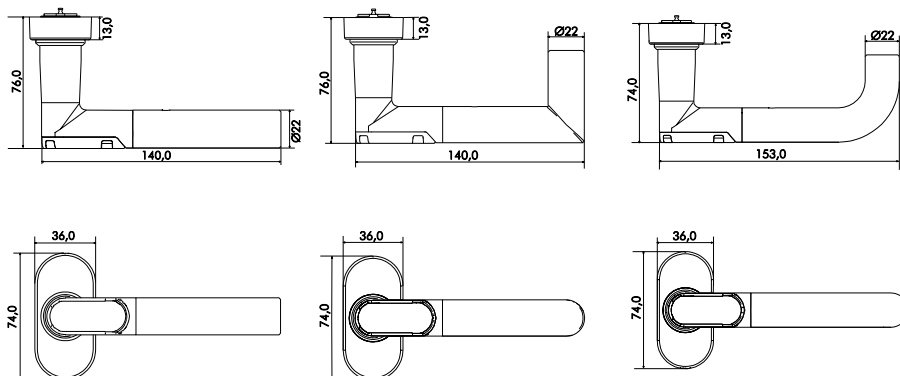
**Circular rosette
electronics side and
handle versions**



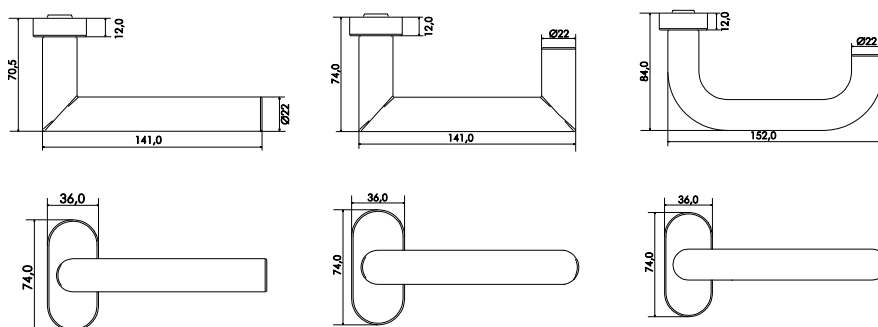
**Circular rosette
mechanical side and
handle versions**

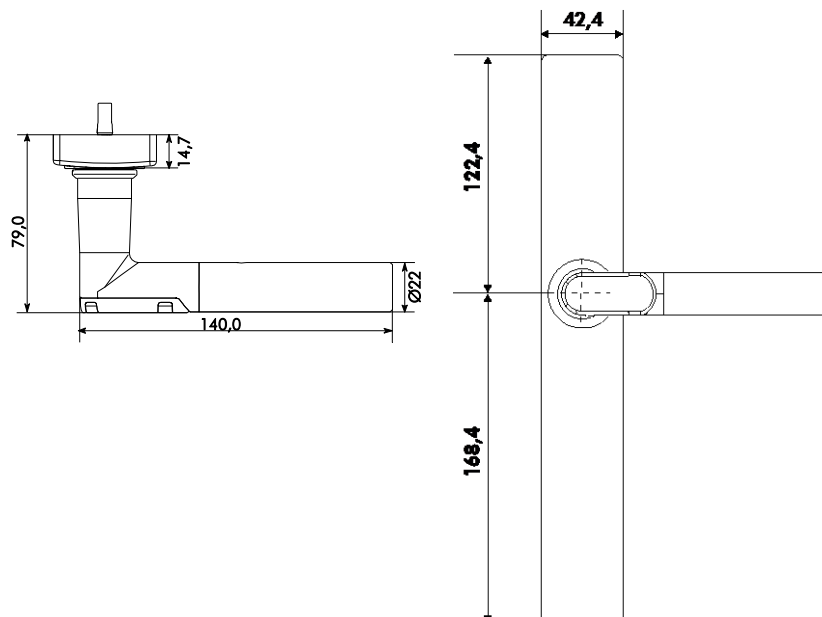
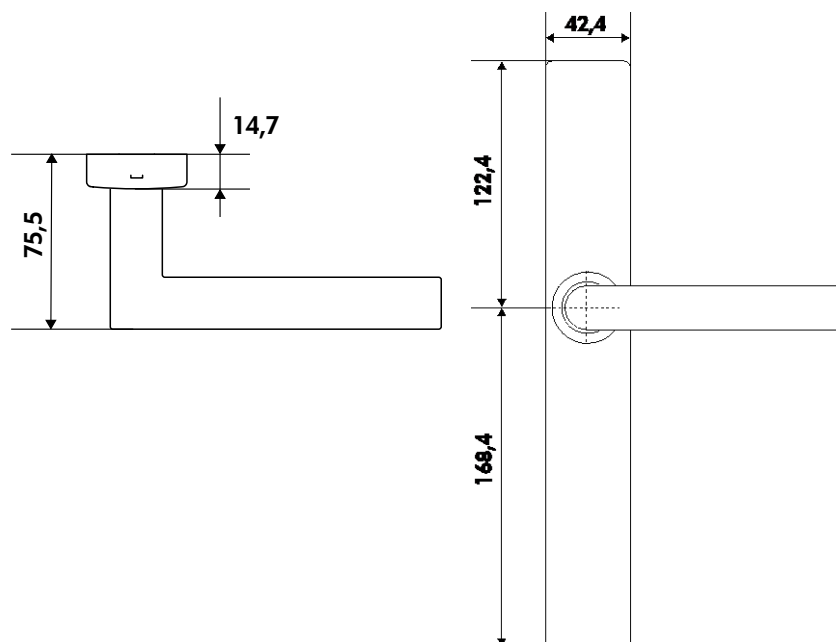


**Oval rosette
electronics side**

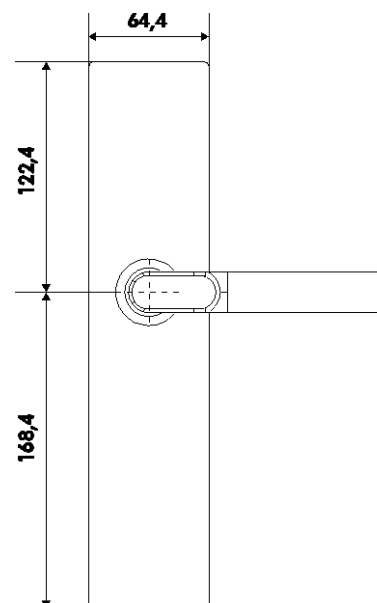
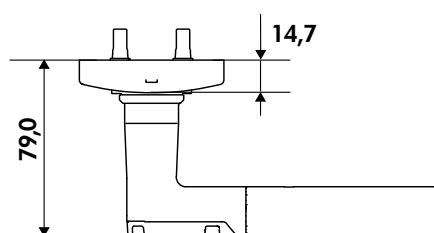


**Oval rosette
mechanical side**

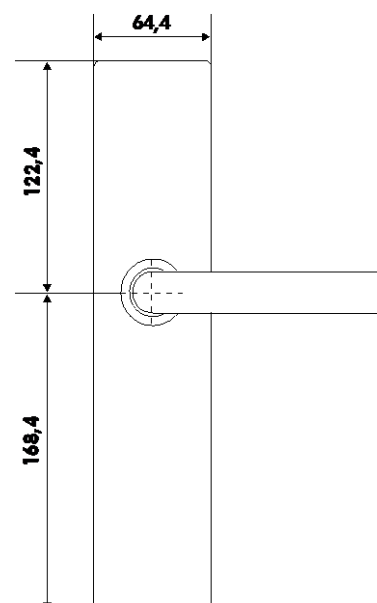
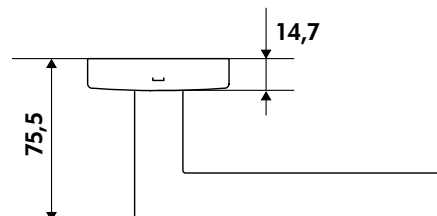


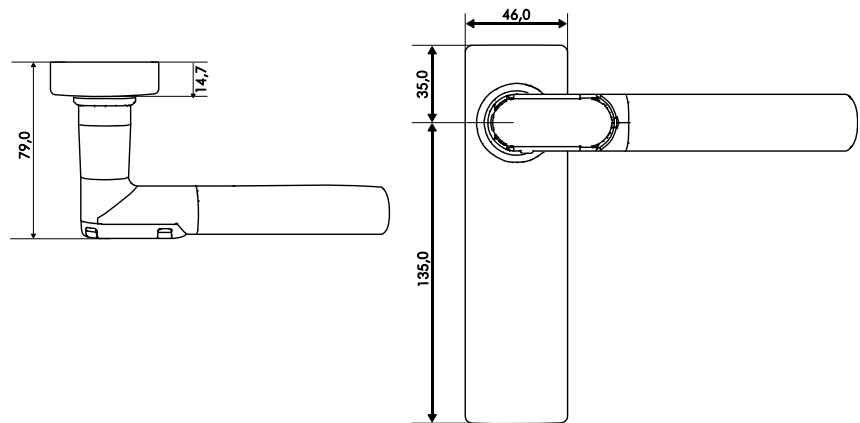
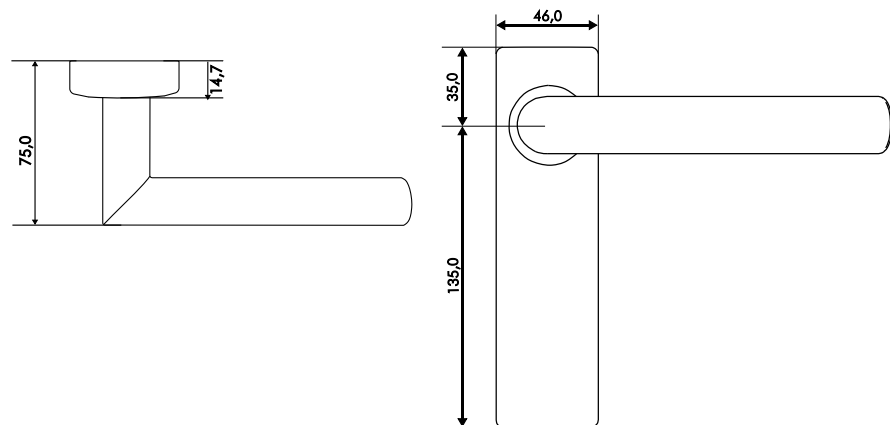
**Long narrow plate
electronics side****Long narrow plate
mechanical side**

**Long wide plate
electronics side**



**Long wide plate
mechanical side**



**Short plate electronics
side****Short plate mechanical
side**

3.5 Standards

The electronic door handle CX6172/4 meets the following standards:

- prEN 16867, classification 47-B11D00
- EN 1906:2012

3.6 Management accessories

The components of the Clex prime system described below are used to manage a Clex prime locking system.

3.6.1 CX6530 Keyvi management software

The locking system can be managed centrally and conveniently from the PC using the Keyvi management software for Clex prime. Even complex locking programs can be easily created, monitored and maintained using the software.

3.6.2 CX6510 Service device



The CX6510 service device is used for programming the locking system. Information can be exchanged between the Keyvi management software and locking units using the service unit. The information includes, for example, authorizations, events or settings for the locking units. In case of EM and HITAG1, the keys can also be programmed using the service device.

3.6.3 CX6522 ClexTouch



ClexTouch is software that runs on handheld computers or laptops with Windows. It can be used to conveniently configure the locking system and (along with a corresponding wireless USB stick) and the relevant data can be sent directly to all the locking system components of Clex prime that are provided with a radio chip.

3.6.4 CX6520 Programming station



The programming station is an optional addition to the Keyvi management software and the CX6510 service device in order to conveniently program the key. In conjunction with MIFARE® or LEGIC® transponders, the programming station is always required to program the key. The programming station is connected to the PC using a USB cable.

3.6.5 Special keys

Service key

Using the service key, a user identifies himself as an administrator of the locking system. If this key is held in front of a locking system component, then the respective component goes into service mode, where it is possible, for example, to create or change authorisations, make settings or to read the event log.

Sub-service keys

A sub-service puts an already personalized locking unit into service mode. These sub-service keys have authorization only for certain areas or for specific times (for example, for a locking system with several houses and individual management).



Sub-service keys cannot be used to customise brand new locking units for the first time. Only existing customised locking system units can be set to the service mode.

4 Assembly

4.1 Assembly instructions

CAUTION

Damage to the door handle by mounting screws that are too long

- The cover of the electronic door handle can be damaged if the mounting screws are too long!

4.1.1 General assembly instructions

- Check the approval when installing the CX6172/4 door handle in a fire / smoke resistant door or in an escape door.
- If a cylinder holder is present in the door, then it should be sealed properly, for e.g. using a dummy cylinder.
- Carry out the assembly with the door open.
- Ensure that the latches or seals fitted to the door do not hinder the proper operation of the CX6172/4.
- Ensure that the door handle does not protrude and prevent the door from swinging freely.
- When installing the CX6172 door handle in the circular and oval rosettes version, the hole in the door for inserting the handle pin should have a diameter of at least 25 mm.
- When installing the CX6174 door handle in the long plate version, the plate has to be fixed at least at four points distributed as evenly as possible over the length, such that the corresponding force can be applied on the plate.
- Before assembling the door handle, always check whether all the components can move freely.
- After assembly, check the function with the door open.

4.1.2 Drilling template

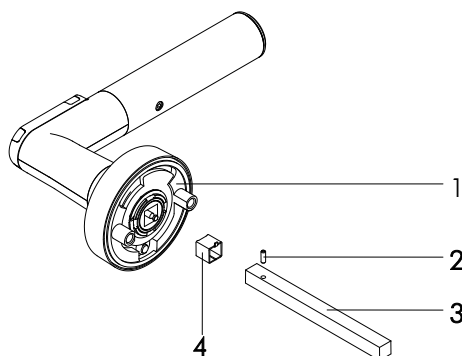
The drilling template supplied is used to mark the drilling holes.

| | |
|-------------------------|---|
| Circular rosette | There should be a distance of at least 38 mm between the two drilling holes for the handle rosette and that for the key rosette. |
| Oval rosette | There should be a distance of at least 50 mm between the two drilling holes for the handle rosette and that for the key rosette. |
| Long plate | The base plates of the two long plate versions are provided with holes for different doors. Usually the same holes are used for the long narrow plate version as for the oval rosettes versions, for the wide version that of the circular rosette version. |
| Short plate | The base plate of the short plate is provided with holes for mounting a short plate. Usually the upper short plate hole and a hole below the locking cylinder are used for fixing. |

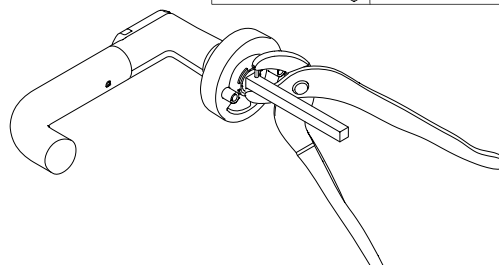
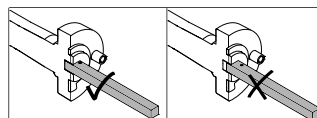
4.2 Assembly

4.2.1 Assembling the square pin

The square pin has to be assembled before installation on the electronic door handle (outside). This applies to all the versions and is shown here using an example of the circular rosette version.



- 1 Electronic door handle
- 2 Spiral clamping pin
- 3 Square
- 4 Adapter sleeve for square (only for 7 mm square)

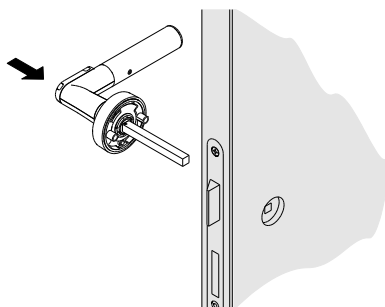


- Insert the adapter sleeve into the square holder (if available)
- Insert the square onto the retaining pin and into the square holder
- Insert the spiral clamping pin into the square

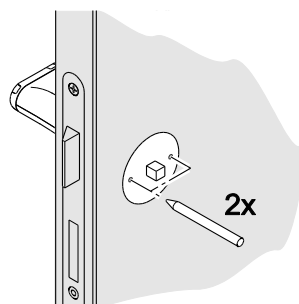
4.2.2 One-sided electronic authorization

Circular rosette

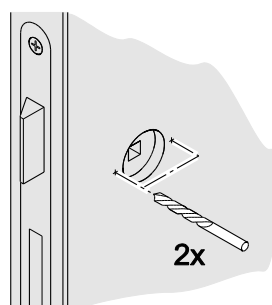
- Insert the square pin of the electronic door handle into the square nut of the lock.



- Place the drilling template on the square pin, align horizontally and centre punch the hole markings.

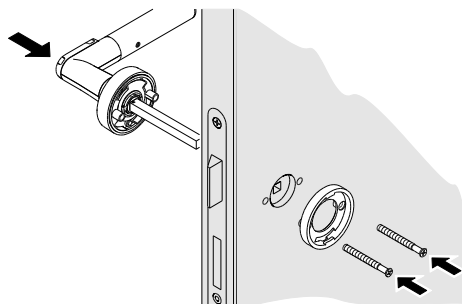


- Remove the square pin again.
- Drill holes of diameter 8 - 8.5 mm at the marked positions. Do not drill into or through the lock casing.

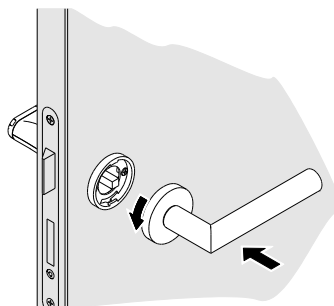


- Insert the square pin of the electronic door handle once again into the square nut of the lock. If necessary place the adapter sleeve supplied on the square pin.

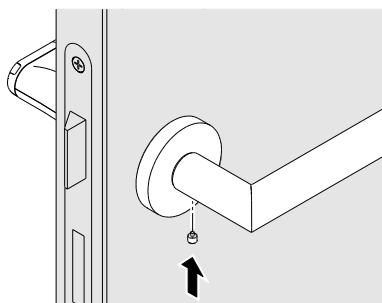
- Insert the holder of the mechanical door handle from the other side and screw it along with the electronic door handle through the door panel. Use the supplied mounting screws.



- Insert the mechanical door handle keeping it in a horizontal position. For door handles pointing to the right, tighten the rosette towards the left, guide it over the handle holder and engage the bayonet lock. Accordingly, tighten the rosette towards the right for door handles pointing to the left.



- Insert the locking screw from the bottom of the handle and tighten it.

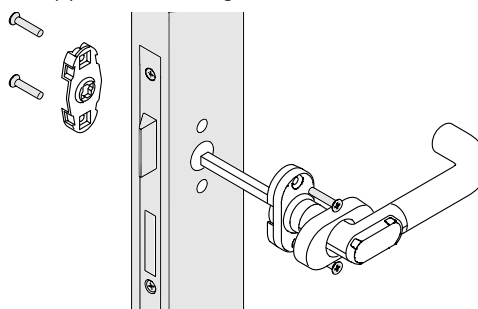


- Check the functionality and easy movement of the door handle with the door open. The handle is already engaged when delivered. When engaged, the catch of the lock should be completely inside the lock casing when the latch is pressed down.
- To operate the door handle, insert the battery and close the housing (see chapter 7.2.17.2.1 Battery replacement). The electronic door handle disengages only after the battery is inserted. After holding up an authorized key for the first time, only the two upper LEDs light up as an indication.

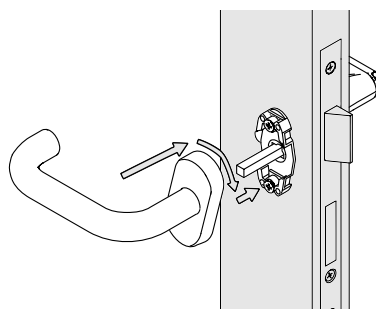
Oval rosette

The oval rosette version is mostly used for tubular frame doors. These doors often have pressed threaded bushes, such that the base plate has to just be screwed onto the door. Other types of attachment depend on the various door designs and are not explained here.

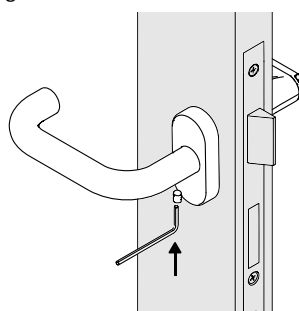
- Pull the rosette cover of the electronic door handle back, turn by 90° and screw the electronic door handle onto the door panel. Insert the holder of the mechanical door handle from the other side and screw it to the door panel as well. Use the supplied mounting screws.



- Replace the rosette cover of the electronic door handle on the rosette.
- Insert the mechanical door handle keeping it in a horizontal position. For door handles pointing to the right, tighten the rosette towards the left, guide it over the handle holder and engage the bayonet lock. Accordingly, tighten the rosette towards the right for door handles pointing to the left.



- Insert the locking screw from the bottom of the handle and tighten it.

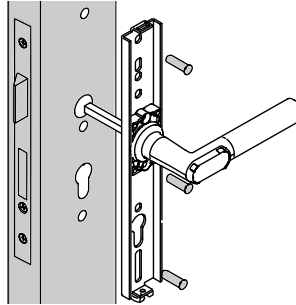


- Check the functionality and easy movement of the door handle with the door open. The handle is already engaged when delivered. When engaged, the catch of the lock should be completely inside the lock casing when the latch is pressed down.
- To operate the door handle, insert the battery and close the housing (see chapter 7.2.17.2.1 Battery replacement). The electronic door handle disengages only after the battery is inserted. After holding up an authorized key for the first time, only the two upper LEDs light up as an indication.

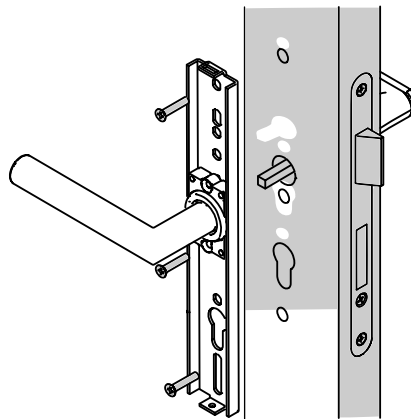
Long narrow plate

- The long plate narrow version is mostly used for tubular frame doors. These doors often have pressed threaded bushes, such that the base plate has to just be screwed onto the door. Other types of attachment depend on the various door designs and are not explained here.

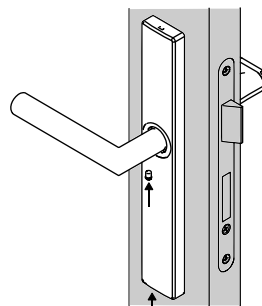
- ▶ Insert the square pin of the electronic door fitting into the square nut of the lock.



- ▶ Screw the base plate of the electronic fitting onto the door panel. Use the supplied mounting screws.
- ▶ Insert the base plate of the mechanical door handle from the other side and screw it to the door panel. Use the supplied mounting screws.



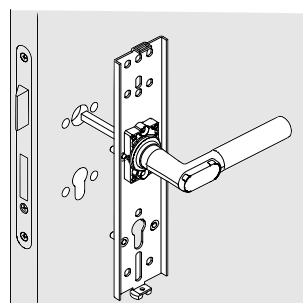
- Place the plate cover of both the door handles on the base plate and unscrew the locking screw at the bottom of the plate such that the plate sits firmly.
- Insert the locking screw from the bottom of the handle and tighten it.



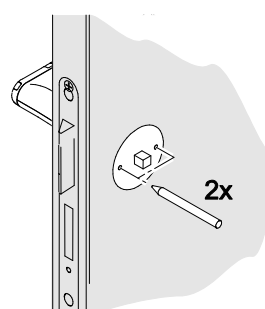
- Check the functionality and easy movement of the door handle with the door open. The handle is already engaged when delivered. When engaged, the catch of the lock should be completely inside the lock casing when the latch is pressed down.
- To operate the door handle, insert the battery and close the housing (see chapter 7.2.17.2.1 Battery replacement). The electronic door handle disengages only after the battery is inserted. After holding up an authorized key for the first time, only the two upper LEDs light up as an indication.

Long wide plate

- The long wide plate is mostly used in doors, where the holes are available for a circular rosette in the lock casing. These holes are used to fix the base plate. The holes have to be drilled in the door subsequently if required, as described below. Other types of attachment depend on the various door designs and are not explained here.
- Insert the square pin of the electronic door handle into the square nut of the lock.

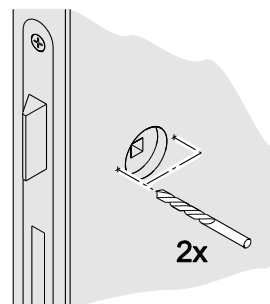


- Place the drilling template on the square pin, align horizontally and centre punch the hole markings.

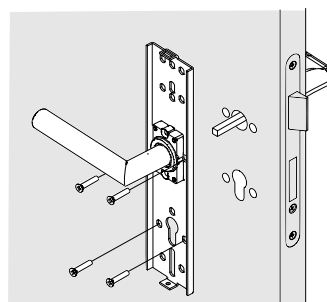


- Remove the square pin again.

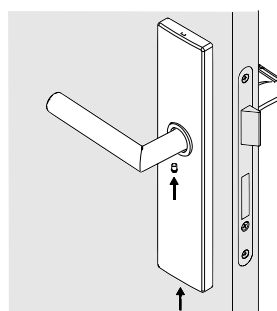
- Drill holes of diameter 8 - 8.5 mm at the marked positions. Do not drill into or through the lock casing.



- Insert the square pin of the electronic door handle once again into the square nut of the lock. If necessary place the adapter sleeve supplied on the square pin.
- Insert the base plate of the mechanical door handle from the other side and screw it along with the electronic door handle through the door panel. Use the mounting screws and threaded bolts provided.



- Place the plate cover of both the door handles on the base plate and unscrew the locking screw at the bottom of the plate such that the plate sits firmly.
- Insert the locking screw from the bottom of the mechanical door handle and tighten it.



- Check the functionality and easy movement of the door handle with the door open. The handle is already engaged when delivered. When engaged, the catch of the lock should be completely inside the lock casing when the latch is pressed down.

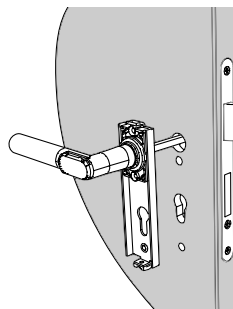
To operate the door handle, insert the battery and close the housing (see chapter 7.2.17.2.1 Battery replacement). The electronic door handle disengages only after the battery is inserted.

After holding up an authorized key for the first time, only the two upper LEDs light up as an indication.

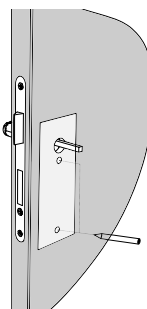
Short plate

The short plate is mostly used in steel doors, where the two standardised holes for a short plate fitting are often already present. The holes have to be drilled in the door subsequently if required, as described below.

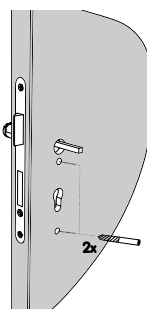
- Insert the square pin of the electronic door handle into the square nut of the lock.



- Place the drilling template on the square pin, align horizontally and centre punch the hole markings.

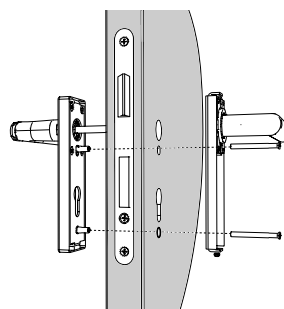


- Remove the square pin again.
- Drill holes of diameter 8 - 8.5 mm at the marked positions. Do not drill into or through the lock casing.

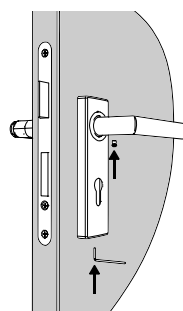


- Insert the square pin of the electronic door handle once again into the square nut of the lock. If necessary place the adapter sleeve supplied on the square pin.

- Insert the base plate of the mechanical door handle from the other side and screw it along with the electronic door handle through the door panel. Use the mounting screws and threaded bolts provided.



- Place the plate cover of both the door handles on the base plate and unscrew the locking screws at the bottom of the plate such that the plate covers sit firmly.
- Insert the locking screw from the bottom of the mechanical door handle and tighten it.



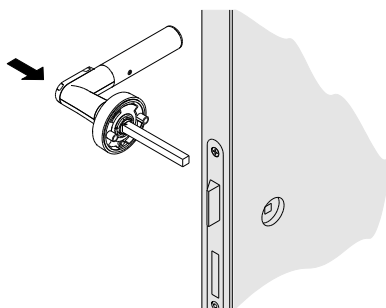
- Check the functionality and easy movement of the door handle with the door open. The handle is already engaged when delivered. When engaged, the catch of the lock should be completely inside the lock casing when the latch is pressed down.
- To operate the door handle, insert the battery and close the housing (see chapter 7.2.17.2.1 Battery replacement). The electronic door handle disengages only after the battery is inserted. After holding up an authorized key for the first time, only the two upper LEDs light up as an indication.

4.2.3 Two-sided electronic authorization

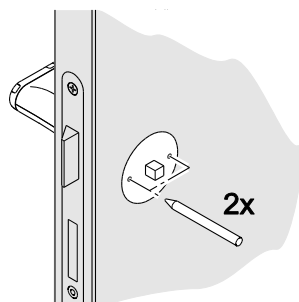


Two-sided electronic authorization is possible in the versions of circular rosette, oval rosette, long narrow plate and long wide plate. The square has to be shortened for this purpose. The assembly is shown here using the example of the circular rosette.

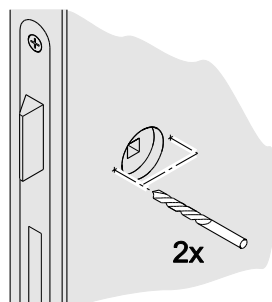
- Insert the square pin of the outer electronic door handle into the square nut of the lock.



- Place the drilling template on the square pin, align horizontally and centre punch the hole markings.

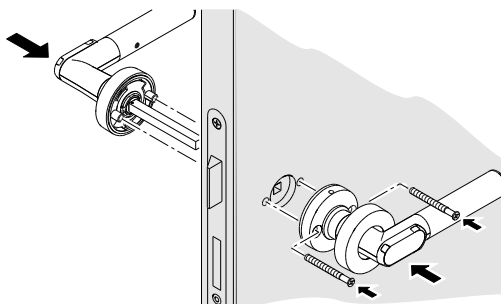


- Remove the square pin again.
- Drill holes of diameter 8 - 8.5 mm at the marked positions. Do not drill into or through the lock casing.

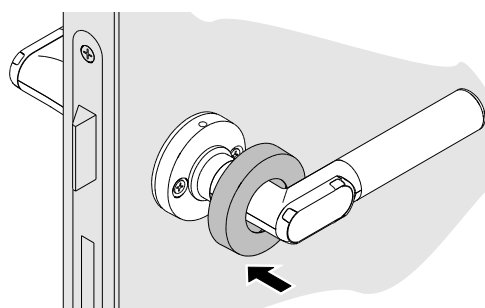


- Insert the square pin of the outer electronic door handle once again into the square nut of the lock. If necessary place the adapter sleeve supplied on the square pin.
- Check the extent to which the square pin protrudes out of the door panel and shorten it if required, in order to completely insert the inner electronic door handle. The square pin should protrude $6 \text{ mm} \pm 0.5 \text{ mm}$ over the door panel, to ensure proper functioning.

- Retract the rosette cover of the inner electronic door handle to the maximum extent and screw both the electronic door handles together through the door panel. Use the supplied mounting screws.



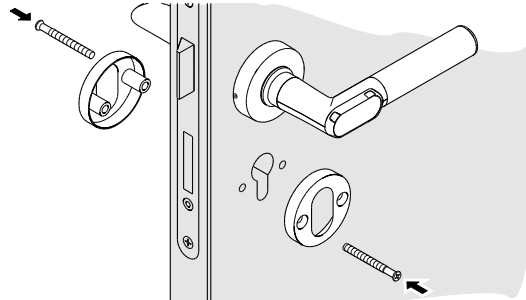
- Place the rosette cover.



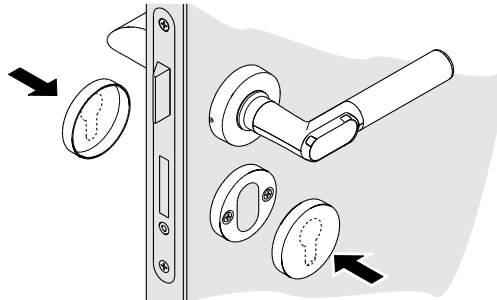
- To operate the door handle, insert the battery and close the housing (see chapter 7.2.17.2.1 Battery replacement).
- Check the functionality and easy movement of the door handle with the door open. To do this, hold an authorized key in front of the reading unit. When engaged, the catch of the lock should be completely inside the lock casing when the latch is pressed down. After holding up an authorized key for the first time, only the two upper LEDs light up as an indication.

4.2.4 Assembling the key rosette

- Place the drilling template, align horizontally and center punch the hole marks.
- Drill holes of diameter 7 - 7.5 mm at the marked positions. Do not drill into or through the lock casing.
- Screw both the key rosettes together through the door panel.



- Place the rosette covers and press firmly, till they engage audibly.



5 Commissioning

5.1 Managing the locking system

The locking system can be managed using the Keyvi management software. Before a locking system can be used, it has to be personalized and the settings have to be customized.

5.1.1 Customisation

Every door and key in the electronic locking system Clex prime should be known to the management software for the respective locking system for subsequent programming. This procedure is called customisation.

During customisation, the door or the door handle installed inside is assigned a Door ID (D-ID) and the key is assigned a Key ID (K-ID) by the management software Keyvi.

5.1.2 Changing the settings

The following settings can be changed:

- Authorisations (see chapter 3.1.1 Authorisations, page 7)
- Time zones (see chapter 3.1.2 Time zones, page 8)
- Time
- Engagement time (defines the time for which the door handle remains engaged after holding up an authorised key, see chapter 6.2 Opening the door, Page 35)
- Wake-up sensitivity (see chapter 6.1 Automatic wake up, page 35)
- Expiry date of a key (see chapter 3.1.3 Automatic expiry date, page 8)
- Radio response of the door handle (wake-on-radio mode)

The settings have to be changed first in the Keyvi management software for the individual door handles or groups of door handles. The software consolidates these settings into tasks, which then need to be transferred first to the service unit or to ClexTouch. From there, they can be transferred to the individual door handles.

If the door handle is located in a Keyvi radio network, then the transfer can also be done via radio.



For additional information refer to the documentation on CX6530 Keyvi management software, on the CX6510 service device, CX6522 ClexTouch and CX6520 programming station.

5.2 Configuring the door handle

Precondition: Orders have been created in the Keyvi management software and sent to the service device or to ClexTouch.

- ▶ Hold the service key in front of the reading unit of the door handle to switch the door handle to the service mode.
- ▶ Using the service unit or ClexTouch, send the respective job to the door handle (see operating manual of CX6510 service unit or that of CX6522 ClexTouch)

6 Operation



The electronic door handle operates only the latch. Hence it should be ensured that the locking cylinder of the door is unlocked or the door is not locked in some other manner. Otherwise, the door cannot be opened even after holding up an authorized key.

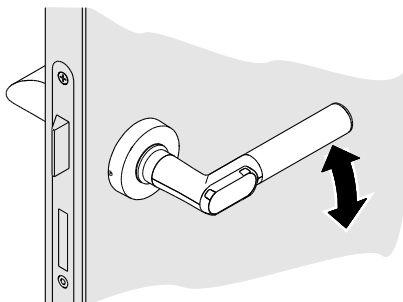
6.1 Automatic wake up

The door handle is in sleep mode as long as it is not used. To check the authorization of a key, it needs to be woken up from the sleep mode. This normally happens automatically when a key is held in front of the reader unit.

If, however, the electronic door handle has been woken up 24 times (for example by metallic objects in the surroundings) without reading a key, then automatic wake up is disabled.

In this case the door handle has to be woken up manually.

- Press the door handle a few times to wake up the reading unit, till an LED starts glowing.
- Hold up the key in front of the reading unit only after this.



Automatic wake up is enabled once again by reading an authorized key, but it can also be enabled or disabled using the service unit CX6510.

The wake up sensitivity (that is the number of times the door handle need to be pressed to wake up the reading unit) can also be configured.

6.2 Opening the door

Precondition: Handle is in horizontal position.

- Hold the authorised key in front of the reading unit till the green LED starts glowing.

The door handle engages and the door can be opened by pressing the door handle.

The time duration for which the door handle remains engaged can be configured (1 to 15 seconds, the default value is 5 seconds). After successful authorization (engaging) at the door handle, the engagement time starts counting down. The engagement-time timer is reset as soon as the door handle is pressed.

The door handle disengages after the configured engagement time, if it is not pressed or when it is pressed and held.



















The door handle disengages immediately, if it is released.

6.3 Toggling the door handle

- Hold the key with toggle authorisation for two locking cycles in front of the reading unit.

Depending on the initial state, the door handle either engages or disengages permanently.

6.4 Signals

| Function | Signal (audible and visible) and explanation |
|---|--|
| Rest mode | No audible or visible signal |
| Begin Service mode | • • Two beeps of increasing intensity but equal length |
| End Service mode | • • Two audible signals of decreasing intensity but equal length |
| Read mode (after waking) |  Red LEDs start flashing |
| Key not authorised | — ● Long low beep, red LEDs start glowing |
| Key authorised | ● Green LEDs start glowing |
| Timer circuit / toggling On | — ● Long loud beep, green LEDs start glowing |
| Timer circuit / toggling Off | — ● Long loud beep, red LEDs start glowing |
| Reset | — ● ● ● Long low beep, all the LEDs are switched on briefly one after the other |
| Battery warning Phase 1: | • • • • •      5 short loud beeps, red LEDs flash 5 times simultaneously |
| Battery warning Phase 2: | • • • • •      5 s  5 short loud beeps, red LEDs flash 5 times simultaneously, then 5 seconds engagement delay, green LEDs start flashing at the same time |
| Battery warning Phase 3: | • • • • •      5 short loud beeps, red LEDs flash 5 times simultaneously, no connection but change battery position |
| Hold up authorized key with door handle pressed | • • •  No engagement, 3 brief high audible signals, then green LED flashes once |

7 Cleaning and maintenance

7.1 Cleaning

- ▶ Clean the door handle with a slightly damp cloth. Use only commercially available household cleaners.
- ▶ Do not use any abrasive or caustic cleaning agents.

7.2 Maintenance

7.2.1 Replacing the battery

⚠ CAUTION

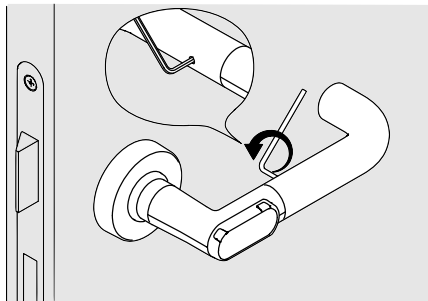
Danger of injury caused by improper use

- ▶ Do not charge, open or heat the battery.
- ▶ Always replace discharged batteries with new batteries.
- ▶ Pay attention to the correct polarity when inserting the batteries.

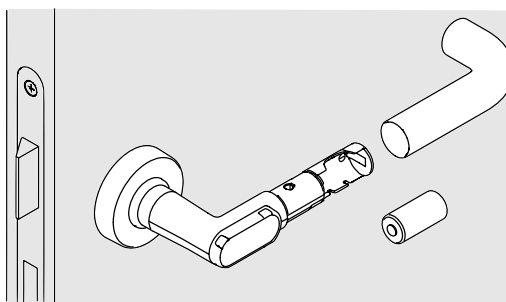


Change the battery only with the door open. As long as the battery is removed, the door handle cannot engage and thus cannot open the door.

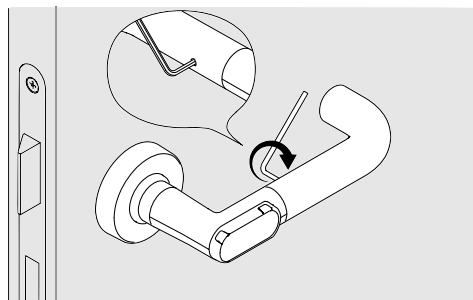
- ▶ Using the Allen key provided, countersink the screw on the inside of the door handle.



- ▶ Remove the gripping sleeve.



- ▶ Remove the used battery and insert the new battery, paying attention to the polarity. The minus pole of the battery faces towards the gripping sleeve.
- ▶ If the door handle is used outdoors, then replace the sealing ring of the door handle (see chapter 7.2.2 Replace the seals, page 39).
- ▶ Insert the gripping sleeve back.



- Unscrew the screw on the inside of the door handle till the stop, such that the gripping sleeve cannot be removed.
- Check the time on the door handle using the CX6510 service device or the CX6522 ClexTouch and adjust it if necessary (see chapter 5.1.2 Changing the settings, page 34).

7.2.2 Replace the seals (for the outdoor version of the doors)

The outdoor version of the electronic door handle is provided with two seals (large sealing ring and grub screw with sealing ring) which prevent water from entering. To further ensure the leak-tightness of the electronic door handle, both the seals have to be replaced every time the handle is opened. These are available as a set from your dealer.

Precondition: Gripping sleeve is removed (see chapter 7.2.1 Replacing the battery, Page 38)

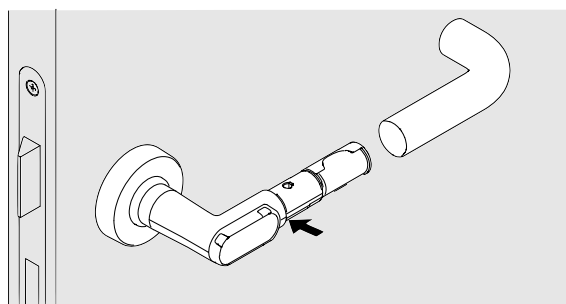
7.2.2.1 Replace the large sealing ring

CAUTION

Damage to the large sealing ring caused by improper handling

- Do not use any sharp objects and do not stretch the sealing ring more than what is required for mounting.

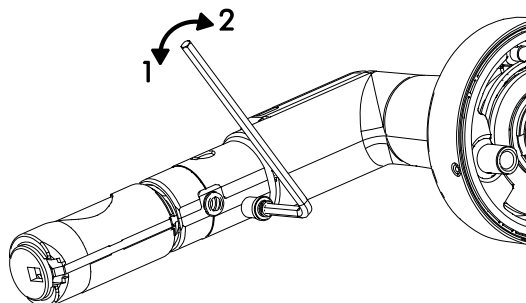
Precondition: Gripping sleeve is removed (see chapter 7.2.1 Replacing the battery, Page 38)



- To remove the large sealing ring, hold it down on one side with the thumb and slide the finger nail of the middle finger on the opposite side. The large sealing ring can now be grasped by the index finger.
- Insert the new large sealing ring.

7.2.2.2 Replace the sealing ring with grub screw

Unscrew the screw on the inside of the door handle in the direction of "1" completely and replace it with the new grub screw from the set. Insert the screw again until it stops in the direction of "2".



8 Faults during operation

8.1 Fault indications

| Function | Audible signal | Explanation |
|---|-------------------------|--------------------------------|
| Memory fault / configuration fault | — — — — — • | 5 long beeps, 1 short beep |
| Coupling error | — — — — — • • | 5 long beeps, 2 short beeps |
| RTC fault (clock) | — — — — — • • • | 5 long beeps, 3 short beeps |
| Internal error (unhandled interrupt) | — — — — — • • • • | 5 long beeps, 4 short beeps |
| Internal error (bus conflict) | — — — — — • • • • • | 5 long beeps, 5 short beeps |
| Internal error (bus conflict) | — — — — — • • • • • • | 5 long beeps, 6 short beeps |
| Internal error (bus conflict) | — — — — — • • • • • • • | 5 long beeps, 7 short beeps |

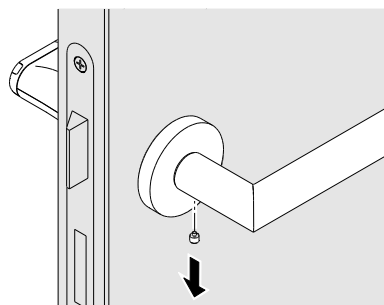
- If the faults mentioned above occur repeatedly, then please contact the concerned dealer.

9 Disassembly and Disposal

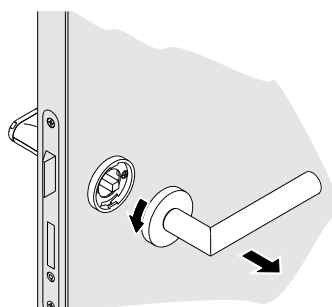
9.1 Disassembly

9.1.1 One-sided electronic authorization

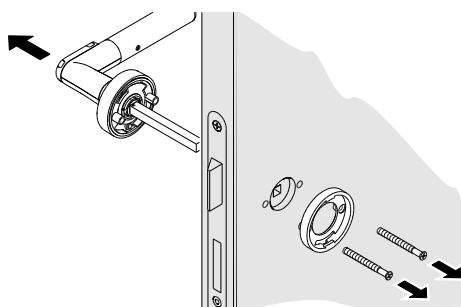
- Unscrew the locking screw at the bottom of the rosette.



- Loosen the bajonet lock. To do this, tighten the rosette to the left for door handles pointing to the right and remove the mechanical door handle from the square pin. Accordingly, tighten the rosette towards the right for door handles pointing to the left.



- Unscrew the handle holder. Remove the electronic door handle from the lock.

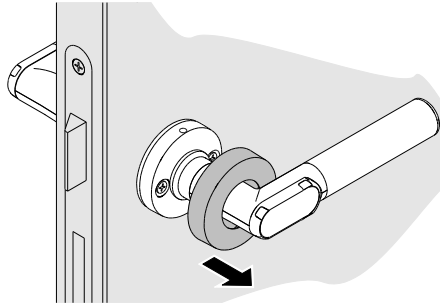


9.1.2 Two-sided electronic authorization

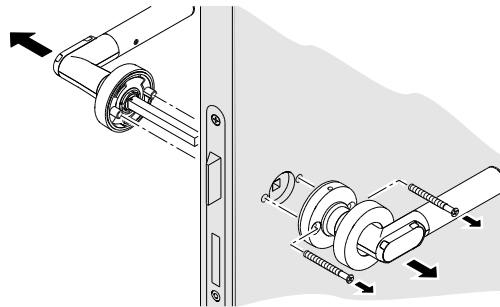


Two-sided electronic authorization is possible in the versions of circular rosette, oval rosette, long narrow plate and long wide plate.

- Lift the rosette cover on the inner electronic door handle using a small screwdriver and pull it back as far as possible.

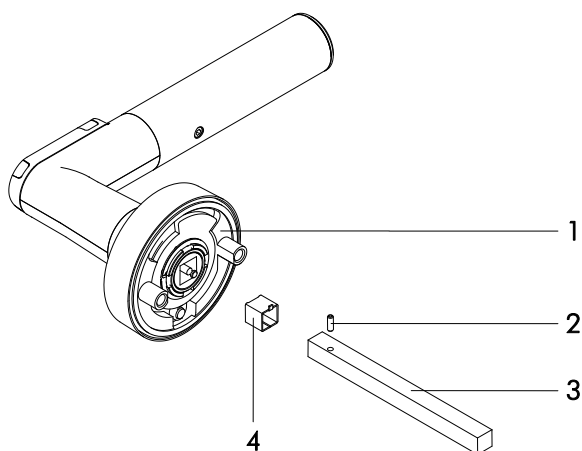


- Loosen the mounting screws. Remove the inner electronic door handle from the square pin. Remove the outer electronic door handle from the lock.



9.1.3 Removing the square pin

For shortening the square or if the length of the square does not match the lock, it may be necessary to remove the square.



- 1 Electronic door handle
- 2 Spiral clamping pin
- 3 Square
- 4 Adapter sleeve for square (only for 7 mm square)

- Remove the spiral clamping pin from the square using a punch
- Remove the square from the holder.
- Remove the adapter sleeve from the square holder (if available)

9.2 Disposal



- Do not dispose the door handle with domestic waste. Disposal should be in accordance with the European Directive 2002/96/EC at a collection point for electrical waste.
- Defective or used batteries should be recycled in accordance with the European Directive 2006/66/EC.
- Follow the local regulations on separate disposal of batteries.
- Recycle the packaging in an eco-friendly manner.

10 FAQ

10.1 Door handle does not come to rest position

If the electronic door handle does not come to horizontal resting position by itself after being assembled, it may be due to the fact that the lock is not aligned properly. This can be corrected by increasing the hole diameter from 8 to 8.5 mm for mounting the door handle. The door handle can be mounted without any stresses.

10.2 Door does not open even though the motor is running

If the motor of the electronic door handle moves audibly when an authorised transponder is held up, but does not engage, then the position of both the door handles with respect to the lock casing has to be checked in resting position. Both the door handles have to be at $90^\circ \pm 1^\circ$ with respect to the lock casing.

11 Glossary

| Definition | Description |
|--------------|--|
| ClexTouch | Software for Windows handheld computer for configuring a locking system |
| IDS | Intrusion Detection System (IDS) |
| HITAG 1 | Technology for contactless transfer of identification data |
| Keyvi | Software for managing a locking system |
| LEGIC® | Technology for contactless transfer of identification data |
| MIFARE® | Technology for contactless transfer of identification data |
| Key | Data carrier that contains the authorization information. This can, for example, be an ISO card or a chip. The key is sometimes also known as transponder. |
| Service unit | Data can be exchanged between a PC having the Keyvi management software and the door handles using the service unit. |
| Service key | A special key with which you can identify yourself as the administrator of the locking system (see chapter 3.6.5Special keys, Page 20) |
| Toggling | Permanently engaging a door handle, so that the door can be opened without a key. |
| Transponder | See key |
| WoR | Wake-on-radio (radio response of a door handle) |