CLAVIS®

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KABA®

Combi B 30
with metal input unit

Mounting instructions

EN

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9 Notes

These mounting instructions are the basis for different lock certifications. The installation of the locking system must be carried exclusively in accordance with these instructions; otherwise, you may lose any warranty claims and/or the product certification.
In addition, the current guidelines of the certification institutes must be taken into account and complied with.

- Use only high-quality alkali/manganese batteries. Low-quality batteries may trigger oxidations, which can result in functional failures of the locking system.
- The cabinet must not contain any residual humidity or aggressive gas vapors (e.g., from painting), to prevent the contact surfaces from being attacked.
- During installation make sure that no dirt or cleaning agents (e.g., filler residues or cold cleaners) enter the locking system. The locking system and the key must never be greased or make contact with other lubricants or aggressive liquids, it must be cleaned with a moist cloth only (no aggressive cleaning agents).
- The locking system is designed for use in the temperature range from +10° C to +50° C and at a humidity of 30% to 80% (non-condensing).
- The actuating torque on the key / the spindle must not exceed 2.5 Nm.
- Modifications to the locking system or key can result in malfunctions and must therefore be refrained from. Never open the lock housing. Dismount the fitting only for battery replacement and perform it strictly according to the specifications of these operating instructions. In doing so, avoid touching or damaging electronic components. Otherwise you will endanger the locking system and possibly lose any warranty claims.
- To use the inputs and outputs on the lock side (labeled "in/out" at the lock), the locking system must be de-energized during wiring, i.e., the batteries in the input unit and power supply units must be removed! Otherwise, the lock electronics may become damaged.
- The locking system is suitable for installation in secure storage units made of steel, provided with or devoid of padding materials. Installation in units made of other materials such as plastic is not allowed.
- The proper installation of the locking system must be done by trained personnel, as must be the in-factory functional test prior to delivery of the secure storage unit. In doing so the perfect functioning of the locking system and of any further systems that may be connected to it or controlled by it (e.g., boltworks) must be ensured.
- It is recommended, that unauthorized persons have no access to security sensitive parts of the lock, also the door of the safe, where the lock is installed, is open.

10 Technical data

10.1 Power supply

- Normally power supply takes place by means of 2 batteries of type AAA /LR 03 (1.5 V) in the input unit.
- Optionally, power supply can take place via the following components:

  a) via an intruder detection system and the alarm box (item no. 3001001550)
  b) when using an alarm box (see above) connected to signaling equipment without power supply option by means of an additional 12V power supply unit (item no. 3002501230)
  c) via a 9V power supply unit (item no. 3002501220) directly to the "power" connection socket of the lock.

Notice: It is strongly recommended to use the original Kaba Mauer power supply unit (article numbers see above), otherwise the correct function of the lock system cannot be ensured.

10.2 Lock

- Bolt stroke: 12 mm
- Bolt projecting end in locked condition: approx. 14 mm
- Bolt width: 25,4 mm; Bolt height: 15 mm
- The maximum allowed forces acting on the bolt (opposite to the direction of closing, maximum locking force and lateral load) can be seen from EN 1300. It is recommended providing in the design a bolt lock on both sides or a bolt support.

- Boltwork connection: Possible via the two M4 threads in the bolt head available on the front side. Optionally via a pusher in the bolt head (not included in the standard).
- The bolt was according to EN1300 with a permanent load of 2,5 N over 10.000 cycles tested. These load should not be exceeded permanently.

10.3 Lock interfaces

For a description of the interfaces at the lock, please refer to Table 7 below. The position of the sockets and their pin assignment according to Table 7 can be found in Figure 25: Lock connectors.

Socket	Type	Description	Specification	Pin assignment
Input unit	Communication line to the input unit	Connection for connecting cable to the input unit	6-pin socket	As pre-assigned
in/out (required connecting cable can be ordered from Kaba Mauer under the item no. 3002500193 if inputs or outputs are to be used without alarm box)	Lock Output signal	Bolt position switch	Change-over contact 30V DC / 0.1 A	Pin1= Common Pin2= Normally Closed Pin3= Normally Open
		Silent alarm[3]	Max. 24 V DC/ 25 mA	Pin6= Collector Pin7= Emitter
	Lock Input signal (Only configurable via the Combi B 30 configuration software (only one function each possible; standard: disabled))	Remote control disable	12V DC +/-10 %	Pin4= +12V Pin5= GND
		Omission alarm (min. actuation time 500 ms; opening must take place within 60 s)	12V +/-10 %	See remote control disable
		OD/OST override	12V +/-10 %	See remote control disable
		Double code override	12V +/-10 %	See remote control disable
Power	Permanent power supply	Connection for optional Combi B 30 Kaba Mauer power supply unit (item no. 3002501220)	9V	As pre-assigned
		Connection for optional alarm box[4] (item no. 3001001550)	9V	As pre-assigned

Table 7: Overview connectors

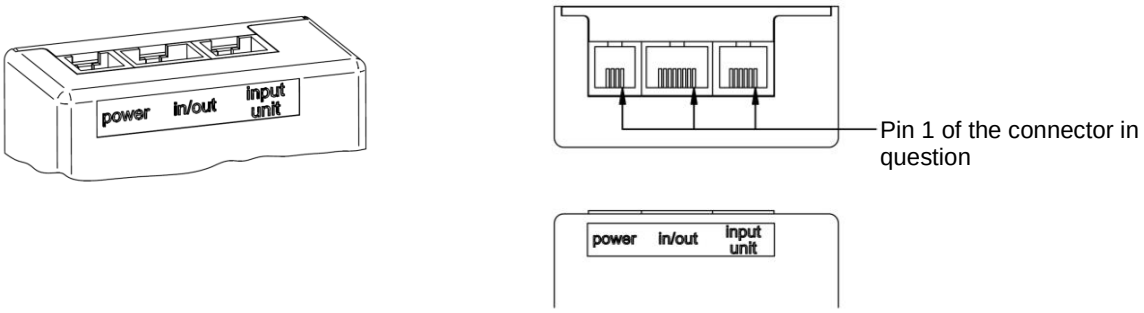


Figure 25: Lock connectors
Pin 1 Assignment of the connectors

[3] only possible with Kaba Mauer alarm box

[4] Power supply for lock and alarm box via the alarm box:

a) when connected to signaling equipment without power supply option by means of an additional 12V power supply unit (item no. 3002501230) at the alarm box or

b) via the EMA

10.4 Interfaces of the input unit

Connection	Type	Description	Specification
Cable with plug	Communication line to lock	Connecting cable and plug to lock	6-pin connector
I/O mini USB connector	Data interface to PC	Connects the input unit to the PC by means of the Kaba Mauer CB30 PC cable, in order to read the audit or configure the lock	As pre-assigned internally. Notice: Special interface, use only original Kaba Mauer CB30 PC cable!

Table 8: Overview input unit connections

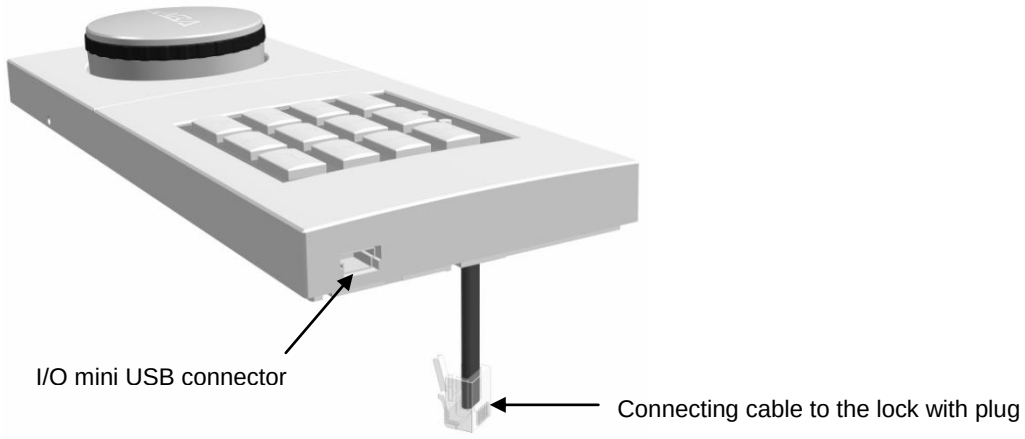


Figure 26: Input unit connection

11 Scope of delivery

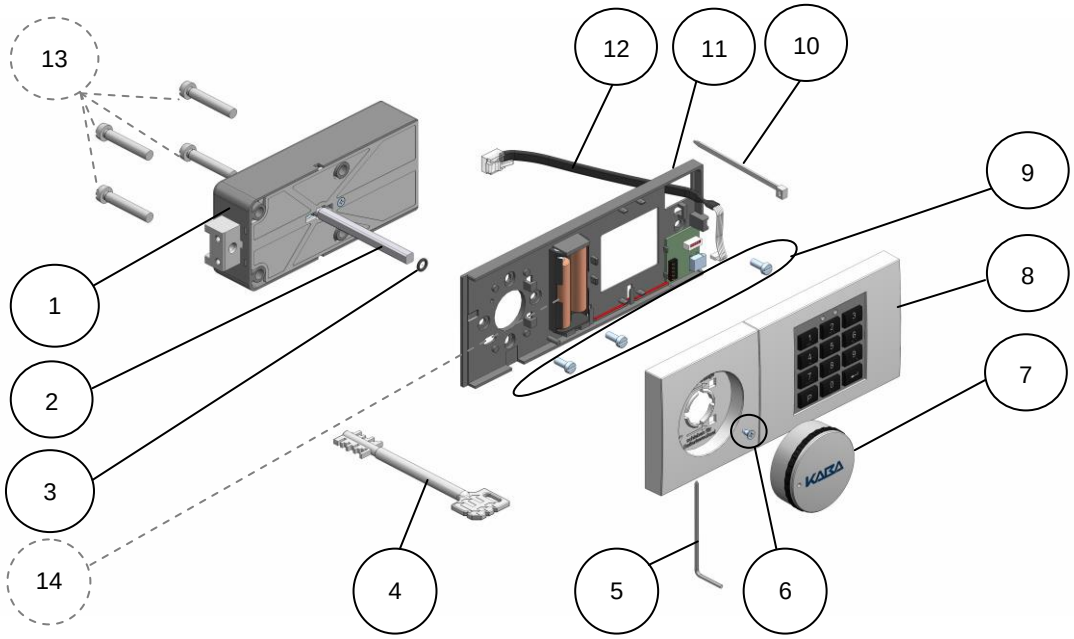


Figure 27: Exploded view of the locking system

Included in the scope of delivery:

- (1) Lock
- (2) Drive shaft
- (3) O-ring
- (4) Inspection key
- (5) Allen key
- (6) Screw for arresting the upper part of the input unit (F-H-2.9 x 6.5 mm)
- (7) Rotary handle
- (8) Upper part of the input unit
- (9) Mounting screws for base part (M4 x 6,0 mm)
- (10) Cable binder
- (11) Base part of the input unit
- (12) Connecting cable input unit/lock

Not included in the scope of delivery:

- (13) Mounting screws for the lock (recommended M6 x 30 mm or ¼“ x 30 mm see chapter 13.1)
- (14) 2 batteries 1.5 volts type AAA / LR 03

12 Mounting preparation

12.1 Bores and cabinet cutouts for lock

Mounting the lock (no. 1 in Figure 27) requires 4 bores with M6 thread. They must be drilled in accordance with the hole pattern shown in Figure 28. It may be necessary for the hole pattern shown to be rotated according to Table 10 for the desired installation position.
In addition, in order to be able to insert the inspection key and the drive shaft into the key hole, a cutout in the form of a key hole having the dimensions and shape described in Figure 28 and Table 9 will be required. In doing so, the tolerances according to DIN 2768-mH must be taken into account. All dimensions that are outside the data shown in Figure 28 must be coordinated separately with certifiers (test institutes). The position of the key hole, the dimensions and the resulting required space for the installation of the lock can be seen from Figure 28.

The following figure refers to the installation position "Bolt on the left". For other installation positions, the figure must be rotated according to Table 10:

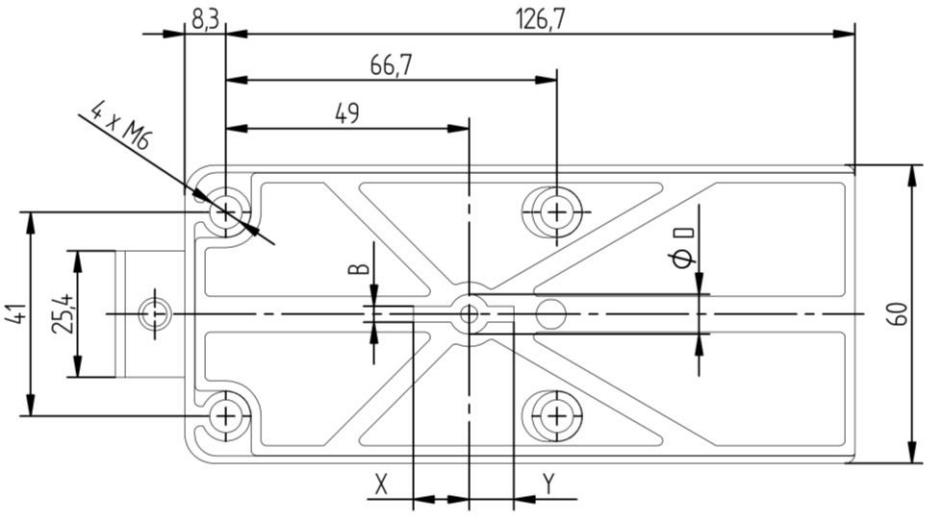


Figure 28: Mounting hole pattern for lock; dimensions for lock housing here: Mounting direction bolt on the left

	Min. [mm]	Max. [mm]
B	3.2	7.5
D	8.0	12.0
X	11.3	17.0
Y	9.0	12.5

Table 9: Detailed dimensions for the key hole

Mounting direction lock		Rotate Figure 28
Figure shows bolt on the left, key hole horizontal		-
Bolt at the bottom, key hole vertical		90° counterclockwise.
Bolt at the top, key hole vertical		90° clockwise
Bolt on the right, key hole horizontal		180°

Table 10: Installation position lock, notes for Figure 28

- For securing the required key cutout in the secure storage unit, it is recommended inserting the Kaba Mauer key guide (see Figure 29) or the Kaba Mauer key carrier guide (see Figure 30). In these cases, taking into consideration DIN 2768-mH, the key in the secure storage unit must be manufactured with the corresponding dimensions.

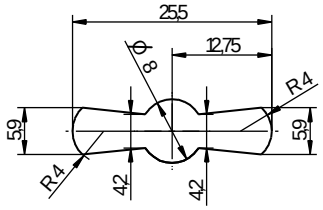


Figure 29: Key guide 86101

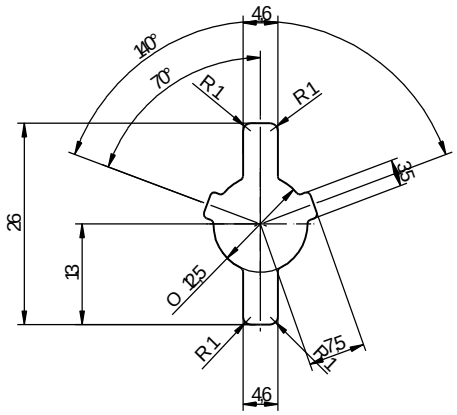


Figure 30: Key carrier guide

12.2 Bores and cabinet cutouts for input unit

To install the input unit, first 3 holes with M4 thread must be drilled according to Figure 31 respectively. Two screw connection options have been given. They are shown in Figure 31 as I and II. Depending on the installation position, the keypad has to be rotated according to Table 11, if necessary.

In addition to that, another cutout is required in the cabinet door, used as cable passage for the connecting cable (12) between lock (1) and input unit (8 + 11). The size of the cable passage hole must not be more than 100 mm^2 (e.g. a hole max. 11.25 in diameter), and the hole must be positioned within the area of Figures 32.

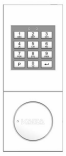
Installation position	Figure	Rotation
	32	Not required
	32	90° clockwise
	32	90° counterclockwise
	32	180°

Table 11: Installation position input unit

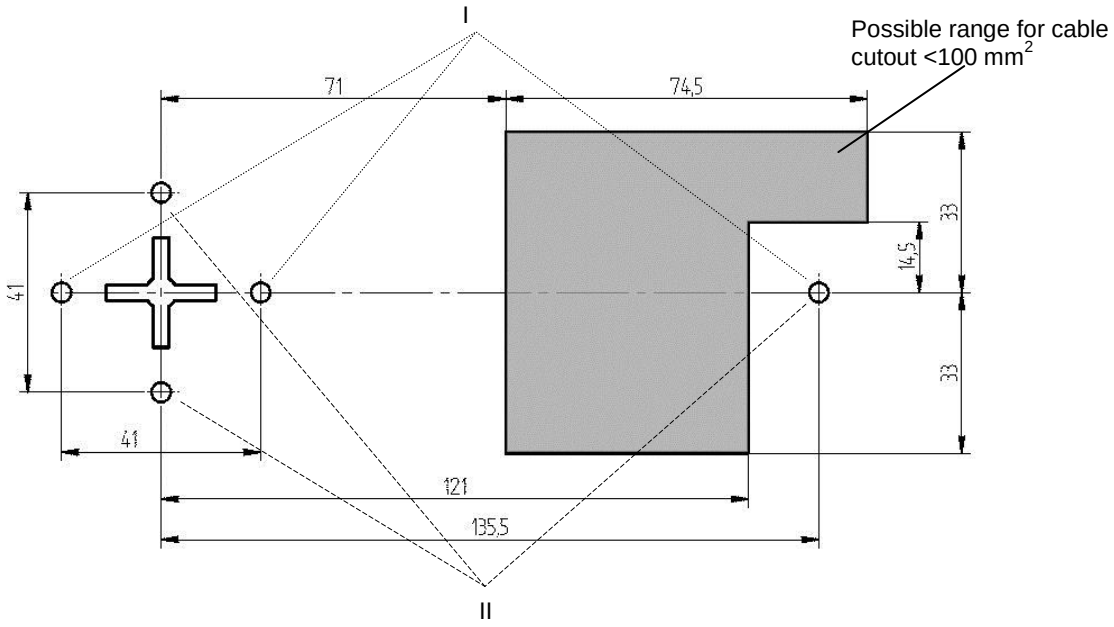


Figure 31: Holes in operating unit and possible range for cable passage

12.3 Drive shaft

Depending on the door strength and the installation position, the drive shaft (2) included in the delivery must be adjusted to the required functional length, in order to guarantee proper functioning of the locking system. The required length dimension W is obtained from the distance L between the lock mounting plane and the input unit mounting plane + 20 mm immersion depth into the input unit + 26.5 mm immersion depth into the lock (tolerance +0/-2 mm, see Figure 32).

Shorten the drive shaft (2) only on the side **not** drilled (see Figure 33)!
To shorten it, the drive shaft (2) must be removed from the lock, since otherwise there will be a risk of damaging the lock!

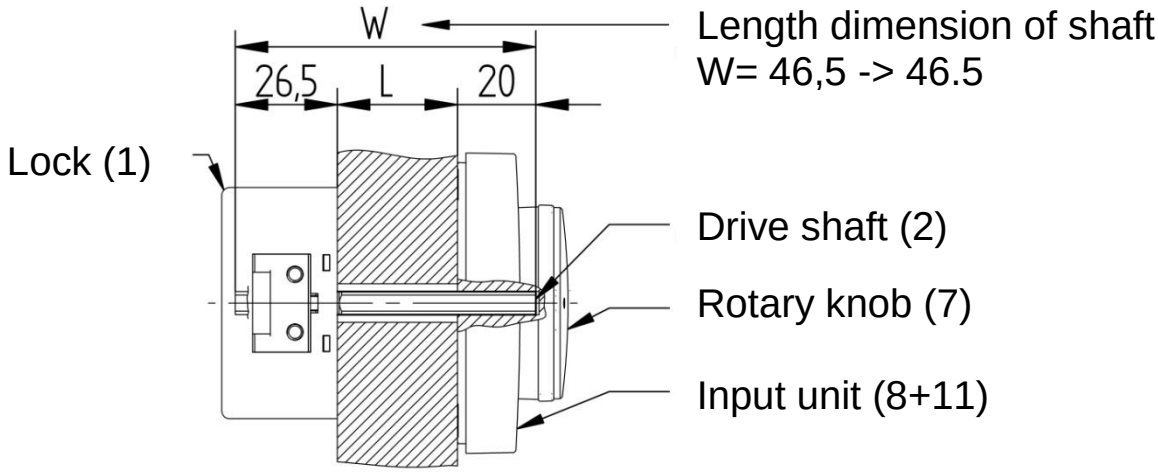


Figure 32: Required length of the drive shaft

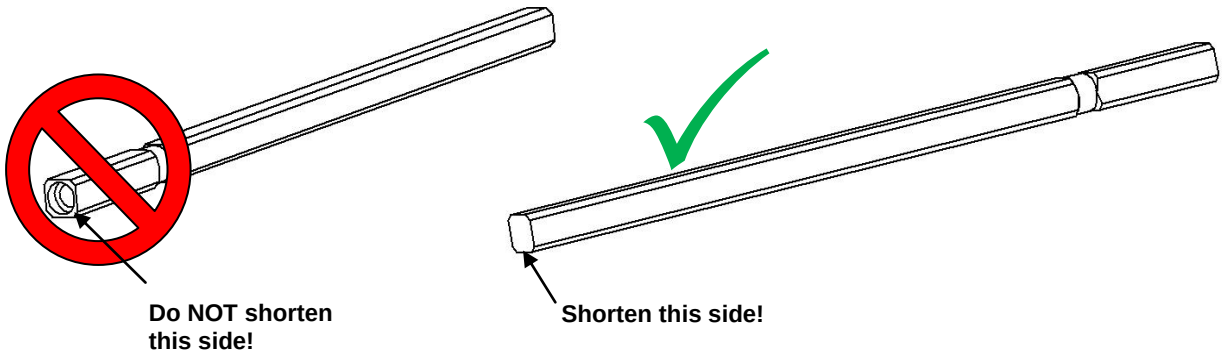


Figure 33: Shortening the drive shaft

13 Mounting the locking system

Following the mounting preparation, the actual mounting of the lock (1) and of the input unit (8 + 11) can take place.

13.1 Mounting the lock

The lock (1) must be mounted in the secure storage unit as follows: The lock (1) must be mounted while locked (with the exception of the bolt). Do not apply any force (e.g., hammer blows) when screw-connecting and adjusting the lock and make sure that the bolt can be freely moved in the installed position. The lock must be installed protected against drilling and covered, if necessary. Use steel cheese head screws M 6 or steel inch screws BSW ¼“. The length must be selected, taking into account the screw connection height of the lock of 24 mm plus the required screwing depth according to current standards. A thread length of at least 30 mm is recommended. For the fastening screws, a minimum strength class of 4.8 and a maximum strength class of 8.8 must be observed. The screws must be secured either with a spring washer, toothed lock washer or serrated lock washer or by means of a screw-locking adhesive. The tightening torque must be between 5 and 6 Nm.
After mounting and adjusting the lock on the storage unit door, you must ensure that the key can be inserted without tilting and without applying force.

13.2 Mounting the drive shaft

Insert the O-ring (3) on the side of the optionally shortened drive shaft that was not drilled (see 12.3) over a length of 5 mm, but not more than 8 mm (see Figure 34).

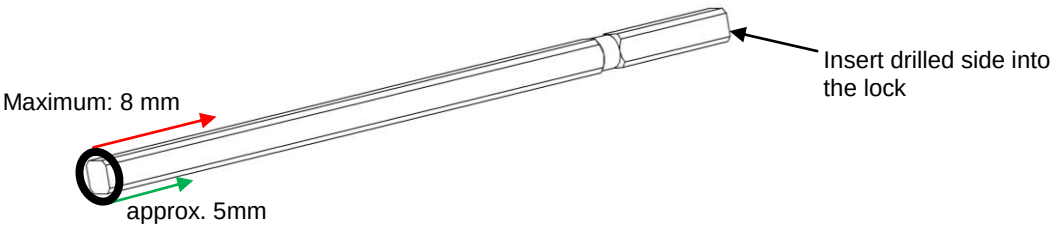


Figure 34: Mounting the O-ring

NOTICE: Under no circumstances should the O-ring be inserted over a length of more than 8 mm! Faultless functioning of the lock can only be insured if the O-ring is positioned correctly!

Next, the drive shaft (2) is inserted into the lock with its drilled side pointing forward (see Figure 34) as far as it will go.

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13.3 Mounting the input unit

13.3.1 Dismounting the input unit

The delivered input unit (8 + 11) is pre-mounted ex works. To install the input unit at the secure storage unit, it must first be dismounted:

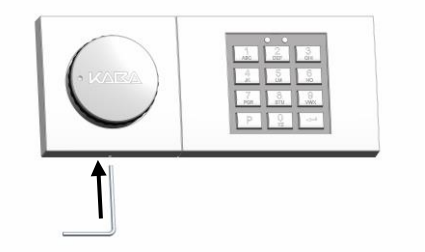


Figure 35: Inserting the Allen wrench
Insert Allen wrench (5) as shown in the figure into the small hole in the input unit (8 + 11) as far as it will go.

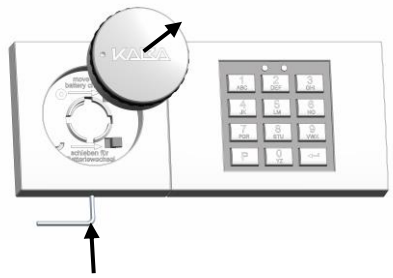


Figure 36: Pulling off the rotary handle
Keep the Allen wrench (5) pressed while pulling off the rotary handle (7) toward the front as shown.

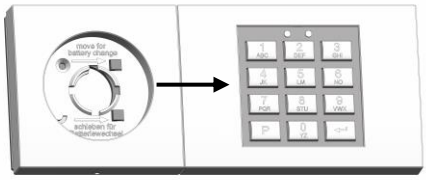


Figure 37: Loosening the screw
Move the top part of the input unit (8) in the direction of the arrow until it makes contact with the base part (11).

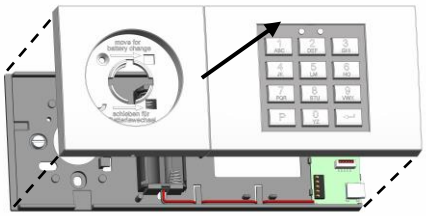


Figure 38: Removing the top part
Remove the top part of the input unit (8) carefully toward the front.

13.3.2 Adjusting the keypad sub-assembly

The keypad sub-assembly has been pre-mounted in the top part of the input unit (8) as standard for the installation position rotary handle (7) on the left, keypad on the right. If you want to maintain this installation position, this chapter can be skipped. However, if the input unit is to be mounted in one of the three other installation positions, the removable keypad sub-assembly must be rotated.
To do so, first the keypad sub-assembly must be removed from the top part of the operating unit (8). This is done by carefully applying pressure to the areas shown in Figure 39 (do not use force or sharp-edged tools or the like). This will remove the sub-assembly from its top holders. Next, remove the keypad unit carefully from its bottom holders (see Figures 42 and 43) and then take it out of the top part of the operating unit (8) toward the back, if possible, without tilting or deforming the holding clamps.

Remark: Do not mount the keypad sub-assembly in other top parts, because the top parts of the input unit (8) is labled with the product data label with the corresponding product datas of the keypad sub-assembly (see Figure 40).

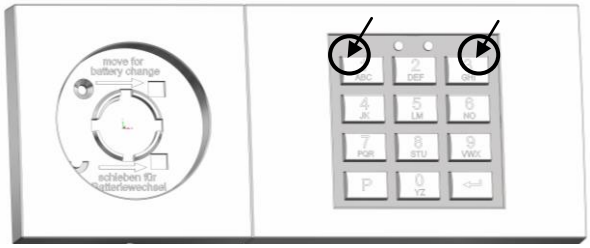


Figure 39: Dismounting the keypad sub-assembly, to do so, carefully apply pressure to the upper part of the keypad frame

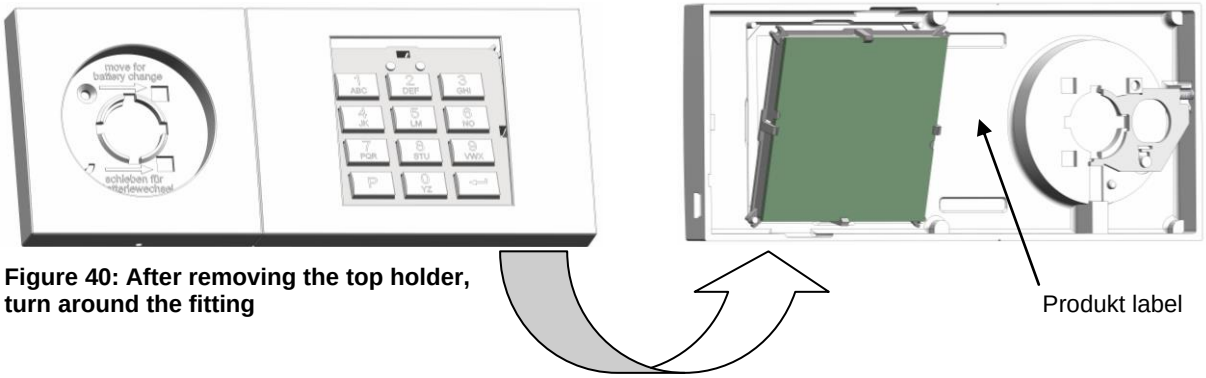


Figure 40: After removing the top holder, turn around the fitting

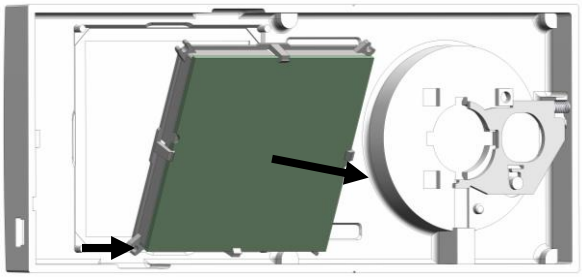


Figure 41: Carefully pull out the keypad sub-assembly toward the back

Now rotate the keypad sub-assembly as indicated in Table 12 and insert it again into the holders of the top part of the input unit (see Figure 42) and press it carefully inside as far as it will go (do not apply force).

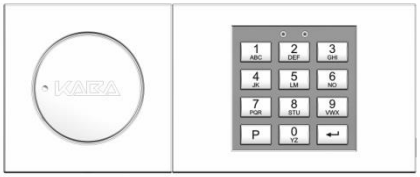
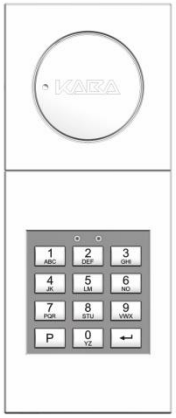
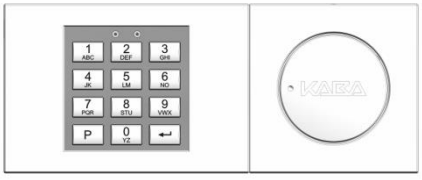
Installation direction of the input unit	Rotating the keypad	Result
Rotary handle on the left, keypad on the right	Not required	
Rotary handle at the top, keypad at the bottom	90° counterclockwise.	
Rotary handle at the bottom, keypad at the top	90° clockwise	
Rotary handle on the right, keypad on the left	180°	

Table 12: Installation position of the input unit, notes for Figures15 to18

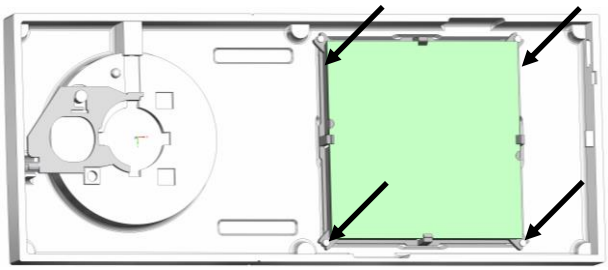


Figure 42: Mounting the keypad sub-assembly

13.3.3 Mounting the connecting cable

Make sure that the connecting cable (12) does not become damaged during installation, since otherwise there may be a risk of short-circuit, which may damage the locking system. The cable passage hole and other guiding areas of the cable (12) must not exhibit any sharp edges. In the area of transitions and moving parts, the cable (12) must be protected by protective hoses or plastic tubes. You must also ensure that the cable (12) is not bent or squeezed.

Plug the connecting cable (12) on the printed circuit board (PCB) of the base part (11) via the green "miniplug" (JST 5-pin) (see Figure 43, step I).

Notice: In doing so, ensure correct alignment of the plug to the socket. Under no circumstances must the plug be inserted twisted and with force, since the socket shape clearly determines the alignment of the plug (see Figure 44)!

Figure 44
Now fix the connecting cable (12), as shown in Figure 43 step II using the cable binder (10) as traction relief.

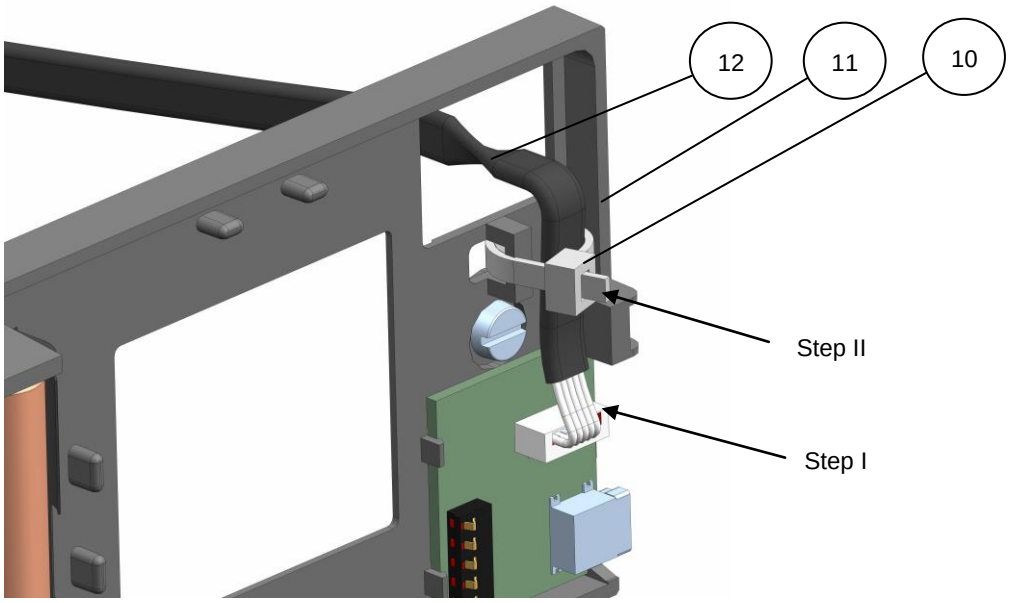


Figure 43: Connecting cable from the input unit to the lock
Detailed view of the connection in the base part of the input unit

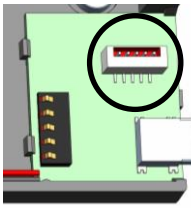


Figure 44: Detail of the socket

The connecting cable (12) of the input unit (8 + 11) must now be passed through the prepared bore (see chapter 12.2) in the door to the lock (1). Then the 8-pin Western plug (RJ45) of the connecting cable (12) is plugged into the "input unit" socket of the lock (1).

13.3.4 Fastening the base part

The Combi B 30 base part (11) is now screwed onto the storage unit door using the three enclosed screws (9), as shown in Figure 31, (for the drill hole specification, see chapter 12.2). Ensure tidy cable routing:
Depending on the position of the cable passage hole, it may be necessary to pass the connecting cable (12) below the base part (11) to the cable passage hole. In doing so, do not squeeze or damage the cable (see note in chapter 13.3.3), but make sure that it is laid below the base part up to the passage hole in the cabinet.

Notice: The turnament to fix the base part (11) must not exceed **1,3 Nm**!

Notice: To fasten the base part, only the enclosed screws (9), whose screw head size match exactly the input unit, should be used! Should you use any other screws, you have to make sure that the screw head height does not exceed 2.6 mm, since otherwise the rotary handle (7) cannot be mounted or dismounted!

13.3.5 Inserting the batteries

Insert two batteries (no. 14) of type AAA / LR 03 and ensure correct polarity; otherwise, the lock (1) will not function and damage may occur. It is highly recommended using high-quality brand batteries and replace them as a precaution every 24 months at the latest.

13.3.6 Mounting the input unit top part

The top part of the input unit (8) is now mounted on the base part (11) as follows:

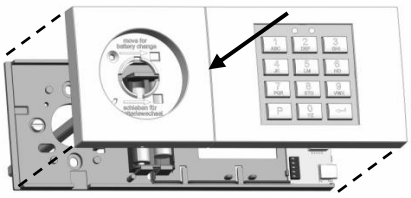


Figure 45: Inserting the top part
Place the top part (8) of the input unit carefully on the base part (11) until the red LED lights up.

Remark: The detent lugs of the base part (11) must pass cleanly through the top part (8) (see also Figure 46)!

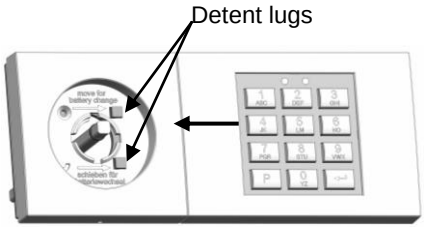


Figure 46: Moving the top part
Press lightly on the top part (8) of the input unit until the detent lugs pass completely through the base part (11) and then move the top part (8) to the left as far as it will go until the red LED goes out.

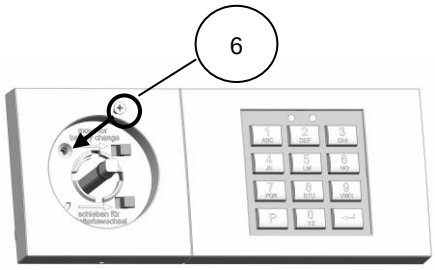


Figure 47: Screwing down the top part
Screw the locating screw (6) with a maximum torque of 0,5 Nm carefully into the base part (11).

Notice: do not overtighten the screw (6).

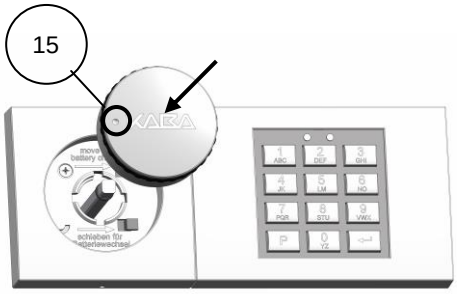


Figure 48: Mounting the rotary handle
Check the O-ring (3) seat once again (5 - 8 mm from the front edge of the shaft). Then insert the rotary handle (7) and lock it into place. In doing so, make sure that in the locked state of the lock (1) the "KABA" logo or the opening indication (15; small depression) is horizontal.
Should the rotary handle (7) not lock into place, do not apply force, but check the length of the shaft, the correct seat of the screws (6 + 9) and of the O-ring and the correct seat of the top part (8) of the input unit.

13.4 Checking/performing the mounting/adjustment procedure

After being mounted, the lock (1) and input unit (8 + 11) must be adjusted such that the rotary handle (7) can be easily rotated and the spring force is sufficient to take the rotary handle (7) back to the zero position after a slight clockwise rotation. Should such an adjustment not be possible, check whether the fastening holes have been drilled correctly as specified (see chapter 12.1). Should the holes not have been drilled as specified, they must be corrected.

14 Partial commissioning / Complete commissioning

Once the lock has been mounted, partial commissioning (only by means of PC software) or complete commissioning (by means of PC software or via the input unit) can take place.
In partial commissioning, the locking system is configured (e.g., setting of silent alarm, double code, code preassignment), but these settings will not become active until the lock is commissioned completely by activating the master code. This function is helpful in particular for simplifying operation during mounting to the secure storage unit and prior to delivery to the customer. This means that the lock will initially still open by entering the assembler code. In contrast to partial commissioning, after complete commissioning, all programmed codes and functions will be available, whereas the assembler code is disabled. For complete commissioning, two methods are available:
- Partial commissioning by means of PC software, followed by complete commissioning by means of the input unit
- Commissioning by means of the input unit

The procedure for partial commissioning can be found in the operating instructions of the PC software. How to proceed further in complete commissioning can be found in the operating instructions of the lock, chapter 8.

Locks that have been partly commissioned should be completely commissioned prior to handing them over to the end customer. Both in partial and complete commissioning, the customer must be notified of all programmed codes and functions! The appropriate data of the presettings made (codes, functions) should be mentioned for the user in the instructions of the secure storage unit or in additional documents. In addition to that, the set master code can be documented in the operating instructions of the lock. For more information on this, please refer to the area highlighted in gray in chapter 1, page 4, "Master code set by the distributor or manufacturer of the safe" and chapter 15.

15 Functional test

The function of the lock must be tested according to chapter 8.1 ff. of the operating instructions of the lock with the door opened. The mechanical opening by means of the double-bit key must also be tested (see operating instructions lock chapter 11).

As long as the assembler code is used for opening (master not yet enabled), there is no guard time for incorrect code inputs and no take-off contact signal message either. After the master has been enabled, the removal of the top part of the input unit is detected by the lock. Each opening will result in suitable signaling. How to reset the lift-off contact message can be found in the operating instructions of the lock in chapter 9.6.

16 Permanent power supply

Two batteries of type AAA are available in the input unit for power supply of the lock.
If necessary, along with the battery power supply the lock can also be supplied permanently with voltage. The technical data of permanent power supply can be found in chapter 10.

Even with permanent power supply, the batteries must still be inserted into the input unit because otherwise the lock can no longer be opened by means of the code input in case of power failure or a defect in the permanent power supply. A failure of the permanent power supply and a low battery capacity will trigger the undervoltage display (see operating instructions chapter 13.1). The batteries and the permanent power supply should be checked as soon as possible in this case.

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