1. General Information

The assembly of the lock has to be performed exclusively in accordance with these instructions. Guidelines of the national certification bodies are to be complied with in addition.

- Modifications to the lock may result in malfunctions. Therefore, no changes at the lock are allowed. In case of any changes the warranty expires.
- Keep dirt away from the lock.
- Lock fastening: use of BSW ¼“ steel bolts or M6 steel pan head screws. The length of the engagement must correspond to the applicable standards considering the thickness of the lock.
- Fastening screws: minimum property class 4.8 and maximum property class 8.8.
- An appropriate thread locker must be used.
- Screw torque: minimum 3.5 Nm and maximum 5 Nm.
- The bolt must be movable in installed condition.
- The perfect function of the lock and of any additional connected or triggered system (e.g. bolt work) must be checked and warranted by specialists during the installation of the lock.

2. Safe preparation

The lock has standard mounting dimensions. The necessary holes must be drilled according to Fig. 1 and 2. The spindle hole must be well deburred. No sharp edges may remain.

Torque 3.5 to 5 Nm.
Bolt force on all sides max. 1 kN.

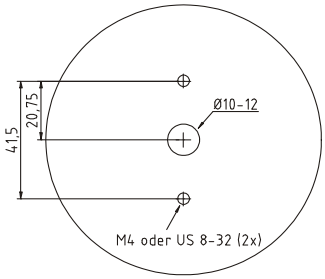


Fig. 1: Dimensions door outside

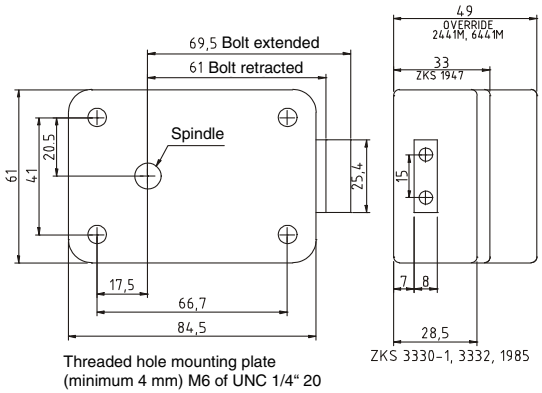


Fig. 2: Dimensions lock

3. Lock assembly

The lock may be mounted in 4 positions:

Bolt left		Bolt right	
Bolt down		Bolt up	

The lock has the standard assembly footprint 66.7 x 41 mm. Use only the 4 provided fixing screws (US screw-thread 1/4“ 20G BSW) or M6 screws (torque 3.5 to 5 Nm) which can be ordered at Kaba Mauer

Order numbers M6 screws from Kaba Mauer (all corresponding M6 screws from one line have to be ordered):

Lock	M6 Screws		
	1 260 601 007 (10 mm)	**1 260 602 502 (25 mm)**	**1 260 603 001 (30 mm)**
1947/ 1985/ 3330/ 3332	2 x	2 x	-
3370	-	-	3 x
3390	1 x	-	2 x

Locks 1947/ 1985/ 3330/ 3332:

After removing the lock cover the 4 assembly holes are accessible.

Note: To extend the bolt, press the relocker lever (next to the bolt) to the lock case. Otherwise

the bolt or the relocker might be damaged.
With the lock 1947 the lever has to be dropped and the bolt has to be slid-in before the cover can be assembled.

Lock 3370:
Removing the cover is not necessary for mounting the 3 screws. Just fit the screws from behind the lock through the cover and the housing.

Lock 3390:
Removing the cover is not necessary for mounting the 3 screws. Just fit the screws from behind the lock through the cover and the housing. The short screw fits in the hole with the circular mark. Note: The bolt must remain in the retracted position during the entire installation process. If the bolt becomes extended during the installation process, open the lock according point 8. and continue the installation. After mounting and testing lock and dial, install the cover insert. Press the insert into the cover using even pressure. The insert is designed to prevent spline key movement.

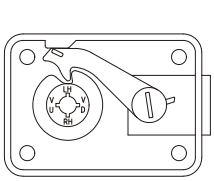
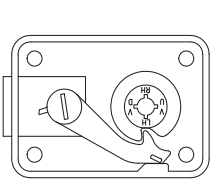
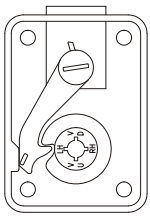
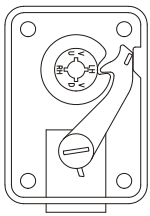
The bolt work must block the extended bolt (8 mm) sufficiently on both sides (in opposite directions). If only one side is blocked and the bolt pressure exceeds 1 kN, a bolt support must be fixed on the opposite side. The tolerance between closing point respectively support and bolt is 0.5 - 1 mm, the bolt counter pressure is 1 KN max.

If parts of the bolt work are attached to the bolt (option code RLG004 or RLG005), see point 10.

4. Dial assembly
The LA GARD dial & ring combinations 1730/ 1731/ 1777/ 1779/ 2085/ 2107 have a spindle with US-thread 5/16-40 UNS-2A and the dial is splined on 43.
Assemble the ring so that the Opening Index is vertical. Cut the spindle so that the spindle-end levels with the cam. The spindle must not stick out. Carefully thread (clockwise) the spindle into the drive cam until tight. Next, rotate (counter-clockwise) approx. 1 turn until the groove in the spindle is aligned with the correct spline position. Tolerance approx. 0.5 mm axial.
VdS Class 3/CEN C: 1947 is only approved with the dial 1730/1731. The spindle lead through of the safe door must have a diameter of 10-12 mm.

5. Spline key position
Depending on the installation of the lock, 4 spline key positions are possible. They are indicated on the cam: RH, LH, VU, VD.
The correct spline key position is very important, because otherwise the „prohibited area“ (last number not between 0-20) moves in another operational range and might lead to lock malfunctions.

Seen from the assembly side:

			
RH	LH	VU	VD

6. Spline key installation

If the spline groove is on the correct spline key position, drive the attached spline key carefully in. The nose must lie gently on the spindle. Use only LA GARD spline keys and use them only ones.

7. Adjust dial

The dial must turn easily. Because of the limited adjustment tolerance of the locks 1985/ 3332/ 3370/ 3390, it can be necessary to move the Opening Index approximately 0.5 mm to the left or right. Change the code again and check the precise opening. After adjusting, screw the ring and place the cover plate in the dial (only by dial 1730 and 1731).

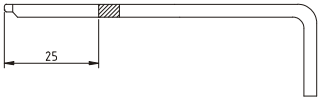
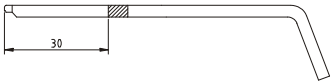
8. Lock opening

If LA GARD dials (splined on 43) are used, the lock opens after the dial has been turned 5 x left „50“, and next right until stop = open. A number between 90 and 0 has to be under the Opening Index (control of the right spline key position and the spline groove).

If different dials are used, the application has to be tested. Depending on the position of the spindle groove towards the ring, the number for the first opening and in some cases the forbidden zone changes.

9. Adjust to “factory mode”

We strongly recommend to change the lock to a combination commonly used by the factory e.g. 10-20-30, for the lock 1947 e.g. 10-20-30-40 (see operating instructions) and to add the change activator to the safe (adjustment of tolerances after the assembly). Fix the change label above the Changing Index at the door inside.
If the lock has not been changed or has been changed to a different combination, the customer has to be informed about it on delivery.

	
For LA GARD 3330, 3332, 1985, 3370, 3390	For LA GARD 1947

Important information on changing the lock

- Don‘t mix up the change activators (different activators for 3 and 4 wheel locks are available).
- Never change the code without fitted lock cover.
- Never close the safe door without fitted lock cover. The interlocking is activated.
- Never grease, oil or spray the lock.
- Check the proper lock function at least 5 times, before closing safe door.

10. Information on mounting the lock on bolt works

The bolt must not be weighted. If a weight cannot be avoided, additional precautions have to be taken:

1. It is important that the bolt reaches the end-point in closed position (ball lock in the bolt). The bolt stroke until the end-point is 8.4 mm. In case of shear force the active bolt stroke is 8.0 mm + 0.4 mm unloaded way, to reach the end-point.
2. If a tractive force is on the bolt (in close position) through by which the bolt is pulled beyond his end position, the bolt work has to be equipped with an extra blocking unit.
3. Installation control for mechanical combination locks:
   The end-point of the bolt is reached if the lever is resting against the blocking point lock case STOP and the outside lock case.

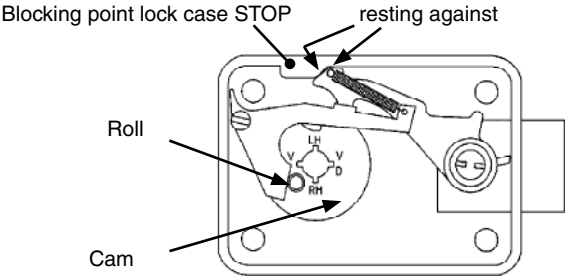


Fig. 3: Blocking point “resting”

   If the bolt does not reach the end-point or exceeds the end-point, a gap of 0.5 mm can be seen between the lever and the case side. This might lead to malfunctions.
4. Keyhole blocker:
   If the combination lock activates a keyhole blocker, it has to move easily and may not obstruct the bolt in its end-points (e.g. too much grease on the blocking slide).
5. User mistake: Keyhole-filling piece is not completely inserted.

If the blocking slide is blocked because of the incomplete inserted filling piece, the bolt work has to be designed for a bolt blocking after 4 mm max. The bolt must not be extended. The lever has to be clearly under the lock case stop in the end position.

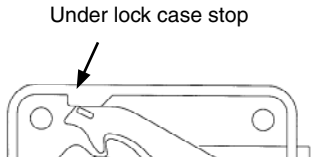


Fig. 4: Blocking point "under"

If the bolt work is blocked but spring forces enable a further extension of the bolt, an enormous bolt pressure occur. This overload might lead to malfunctions and destruction of the combination stability.

6. Locking element RISTOW
   In case of a subsequent installation of the locking element, the bolt must reach its end-point and must be without weight (end tolerance ± 0.4 mm - see 10.1-3).
   A bolt connection which is too short (end-point is not reached) causes an end pressure (see 10.5) which leads to lock malfunctions! Please pay attention that the connection to the bolt work is direct and no spring forces occur.
7. The lock has been tested with 10.000 opening cycles under a bolt load of 2.5 N (mounting position: bolt to the right). Different mounting positions as well as higher bolt loads (because of e.g. bolt works or blocking elements) have to be tested with different bolt loads for 10.000 opening cycles by the safe maker.

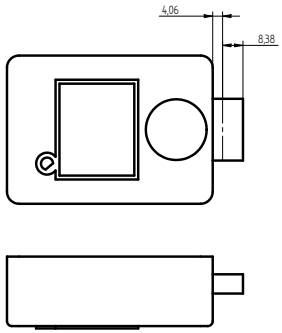


Fig. 5: Bolt throw

Note:
After the assembly the bolt has to run into the end position without load (end-point).
Exception is the 3390 lock. The lock has a maximum load of 10 N (2,25 lbs.) movable by the bolt