GAT Lock 6010 F

Battery-Operated MIFARE® Locker Lock

Installation and Operation
Document Version 1.6

Important: Before commencing installation, commissioning, putting into service and before any maintenance work is carried out, it is essential that the relevant warning and safety instructions in this manual are read!

General warning and safety instructions:

Dear customer,

we congratulate you on having selected a product (device resp. software) of GANTNER Electronic GmbH. So that our product functions in your installation with safety and to your complete satisfaction, we take this opportunity to familiarise you with the following ground rules:

1. Installation, commissioning, operation and maintenance of the product purchased must be carried out in accordance with instructions, i.e. in accordance with the technical conditions of operation, as described in the corresponding product documentation.

2. Before either installation, commissioning, operation or maintenance it is therefore essential that you read the corresponding chapter of this manual and observe its instructions.

3. If there are still some points on which you are not entirely clear, please do not take a chance, but ask the customer adviser responsible for you, or ring the GANTNER Electronic GmbH hotline.

4. Where not otherwise specifically laid down, appropriate installation, commissioning, operation and maintenance of the product is the customer's responsibility.

5. Directly on receipt of the goods, inspect both the packaging and the device resp. data carrier itself for any signs of damage. Also check that the delivery is complete (-> accessories, documentation, auxiliary devices, etc.).

6. If the packaging has been damaged in transport or should you suspect that it has been damaged or that it may have a fault, the product must not be put into service. In this case, contact your customer advisor. He will make every effort to resolve the problem as quickly as possible.

7. Installation, commissioning and servicing of our appliances must only be carried out by suitably trained personnel. In particular, electrical connections may only be made by correspondingly qualified specialists. Here, the appropriate installation provisions in accordance with the relative national Electrical Engineers construction regulations (e.g. ÖVE, [Austrian] VDE, [German]...) must be observed.

8. Where not otherwise stated, installation and maintenance work on our appliances is exclusively to be carried out when disconnected from the power supply. This applies in particular to appliances which are normally supplied by low-tension current.

9. It is prohibited to make alterations to the appliances or to remove protective shields and covers.

10. Do not attempt yourself to repair an appliance after a defect, failure or damage, or to put it back into operation again. In such cases, it is essential you contact either your customer adviser or the GANTNER Electronic GmbH hotline. We will make every effort to resolve the problem as quickly as possible.

11. GANTNER Electronic GmbH accepts no responsibility for any injuries or damage caused as a result of improper use.

12. Although every care is taken and we are continuously aiming for improvement, we cannot exclude completely the possibility of errors appearing in our documentation. GANTNER Electronic GmbH therefore accepts no responsibility for the completeness or the accuracy of this manual. The right is reserved to make alterations, and we may carry out alterations at any time without giving prior notice.

13. Should you discover any fault with the product or in its accompanying documentation, or have any suggestions for improvement, you may confidently approach either your customer adviser or GANTNER Electronic GmbH directly.

14. However, even if you just want to tell us that everything has functioned perfectly, we still look forward to hear from you.

We wish you a successful application of our appliances. We will be pleased to welcome you as a customer again soon.

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This WEEE symbol on GANTNER products and their packaging indicates that the corresponding material must not be disposed of with normal household waste. Instead, such marked waste equipment must be disposed of by handing it over to a designated electronic waste recycling facility. Separating and recycling this waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. Please contact your local authority for details on your nearest electronic waste recycling facility.

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1. INTRODUCTION

1.1. System Components

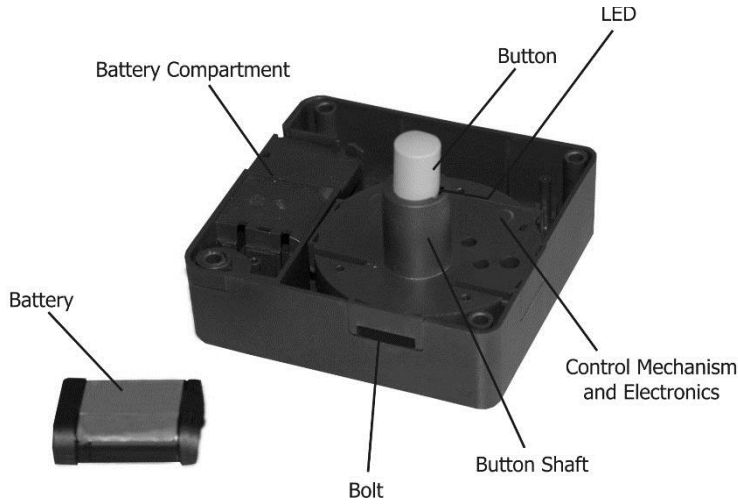


Figure 1.1 *– System components of the GAT Lock 6010 F*

1.2. Brief Description

The GAT Lock 6010 F is a battery-operated, electronic locker lock with non-contact locking and opening authorisation between the lock and MIFARE data carriers. In this connection, the term RFID systems is used.

Thanks to the GAT Lock 6010 F, one single MIFARE data carrier can be used not only for entry and payment, but also for locking and unlocking clothes lockers most conveniently and without the need for a mechanical key.

The GAT Lock 6010 F can be installed in all the usual types of lockers (e.g. clothes lockers, safe deposit boxes, compartment lockers) made of wood, metal or plastic.

For optical signalling there is a multi-coloured LED next to the button which lights up and flashes in different colours (green, yellow or red).

The last 50 actions are stored as bookings in the GAT Lock 6010 F. Bookings can be read out via a serial interface (RS 232), e.g. from a PC or laptop.

An integrated real-time clock makes it possible to take the expiry data on the LEGIC® data carriers for locking and unlocking the GAT Lock 6010 F into account, depending on the configuration of the GAT Lock 6010 F.

The life-time of the internal battery depends on the number of locking cycles and usage frequency as well as the environmental conditions (see "7. Technical Data").

2. SYMBOLS AND THEIR MEANINGS

The following symbols are used in this manual. The meanings of these symbols are given in the table below.

Important Information for correct system functionality. This information must be read and it has to be paid special attention for this information.

Accompanying information about the described topic, tips and interesting information for the user.

NOTICE

Signalizes a situation that can damage the device or other appliances. Read and follow the information carefully.

3. INSTALLATION

3.1. Conditions of Use

The GAT Lock 6010 F has been developed for use in the leisure sector as a lock that is mounted into lockers like clothes lockers or valuables lockers. It can be used in lockers with metallic doors (plate doors) or non-metallic doors. Please pay attention to the environmental conditions for temperature, humidity etc., and see chapter "7. Technical Data".

NOTICE	Cleaning the GAT Lock 6010 F with a high-pressure cleaner is not permitted. Pay attention to the protective type in the technical data

3.2. Locker Features

The GAT Lock 6010 F is suitable for locker doors made of metal and non-metallic materials with a door leaf thickness of between 11 mm (0.45 inch) and 22 mm (0.87 inch).

The width of the locker door, where the GAT Lock 6010 F is mounted on, may not be lower than a certain value because this could cause problems when opening and closing the door (streaking of the GAT Lock 6010 F at the body of the locker). The minimum value for the door width, given in Figure 2.1, is a reference value which depends on the hinges used (see also "2.5. Installation Instructions").

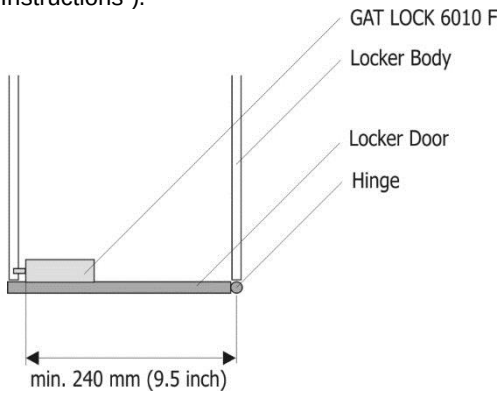


Figure 2.1 *- Minimal door width*

3.3. Reading Ranges

A GAT Lock 6010 F reads contactless data carriers via an RF field for identification. The button of the lock is pressed with the data carrier in order to activate the RF field. The range of the reading field depends on the thickness of the locker door, on the door material, the type of data carrier and the diameter of the button drill hole in the locker door. If the reading range is too low, due to an inauspicious combination of these factors, no reading is possible anymore.

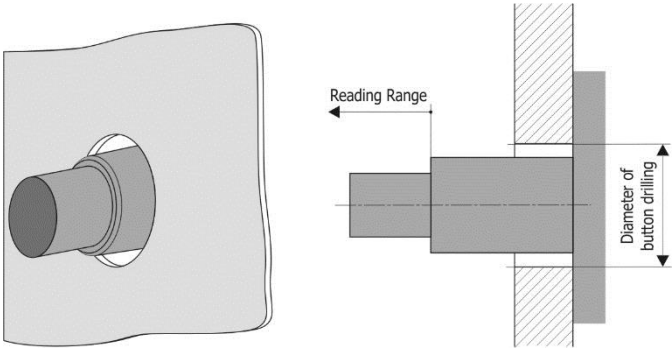


Figure 2.2 *- Reading range and drill hole diameter for non-metallic doors*

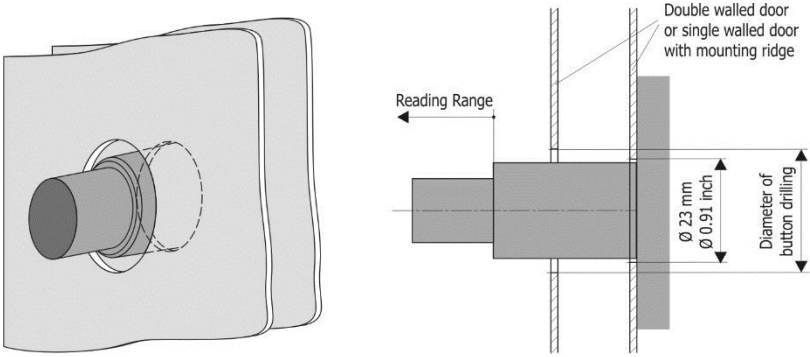


Figure 2.3 *- Reading range and drill hole diameter for metallic doors*

i	The reading range is measured from the button shaft. The drill hole in the locker door and the button shaft must be centred (see also the figure Figure 2.11 in the section "2.5.2. Mounting on Metallic Doors"), otherwise the following specification is not valid.

3.3.1. Non-Metallic Doors

For non-metallic doors the following reading ranges are valid for the different data carriers:

- ISO card like "GAT Chip Card 200 F": approx. 50 mm (2 inch)
- GANTNER wristlet "GAT Chip Band 60 F": approx. 30 mm (1.2 inch)

NOTICE	Don't use metallic number labels (see Figure 2.12). Those labels will decrease the reading range to the same reading ranges and restrictions as for metallic doors!

3.3.2. Metallic Doors

The actual reading ranges at metallic doors depend on many factors like the door thickness, the diameter of the button drill hole, the type of data carrier etc.. The more the shaft of the lock sticks out of the door the higher the reading range can be. Reference values for the reading ranges of different locker door thicknesses and drilling diameters are shown in the diagrams in Figure 2.4.

NOTICE	Test the installation! In any case a test installation is must be made in order to test the reading range. The GAT Lock 6010 F must be able read the used data carriers without any problem!

i	When the GAT Lock 6010 F is mounted in metallic doors, MIFARE DESFire data carriers cannot be used.

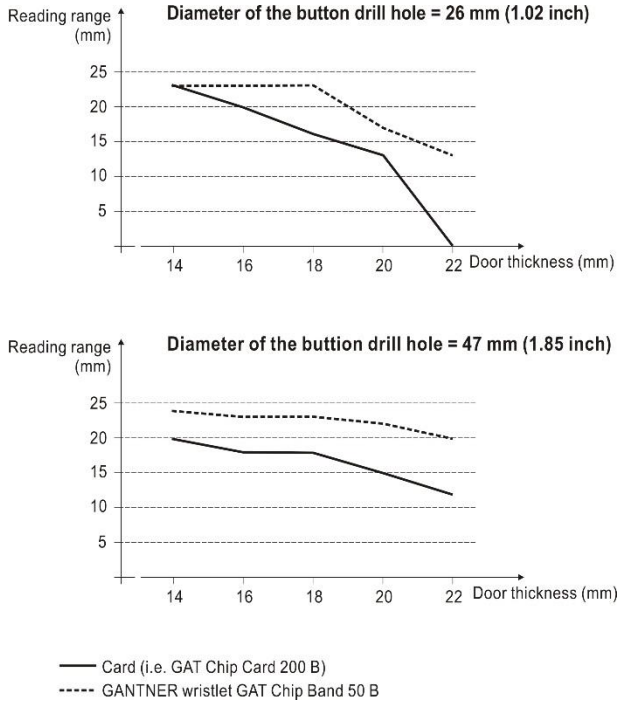


Figure 2.4 *- Reference values of reading ranges at metallic doors*

3.4. Orientation of the GAT Lock 6010 F

When installing the GAT Lock 6010 F, special care must be taken with the alignment of the lock. This must be aligned differently depending on whether the locker door opens on the left or the right. For left-hand doors, the LED points downwards and the battery compartment to the right (viewed from the front). For right-hand doors, the LED points upwards and the battery compartment downwards (viewed from the front).

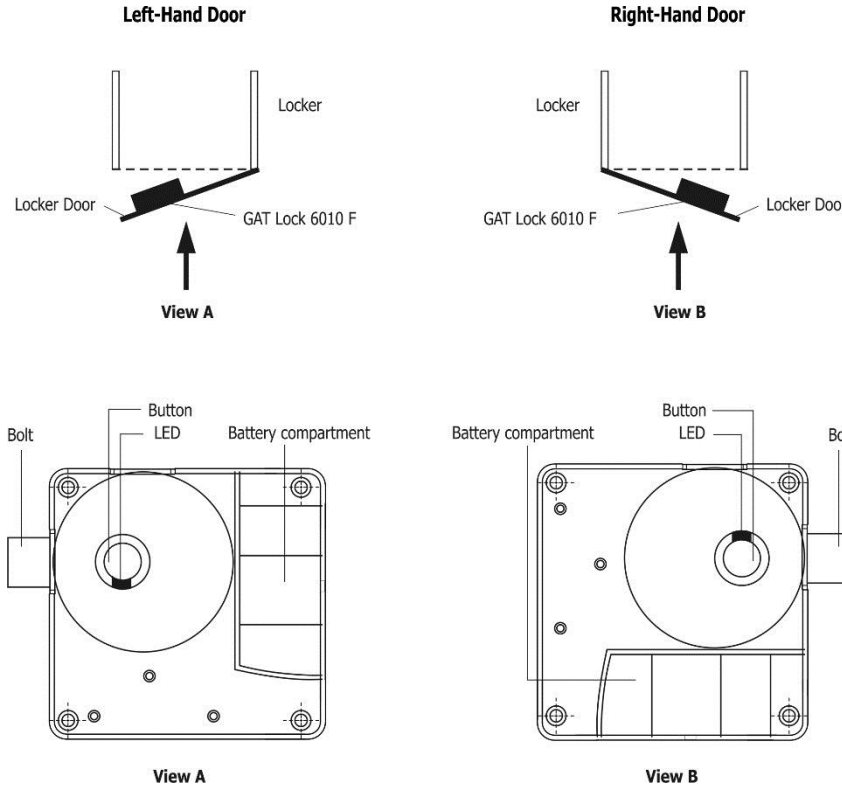
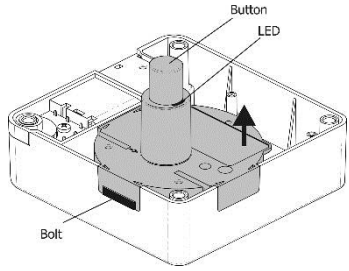


***Figure 2.5** – Installation for left-hand and right-hand doors, shown here from the front*

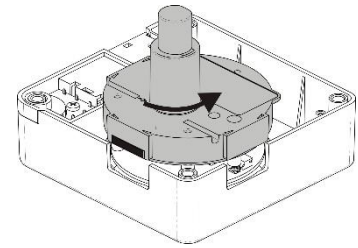
Conversion for left-hand and right-hand doors can be carried out easily by following the steps below (see also Figure 2.5).

1.) Lift the control mechanism and electronics with the button or button shaft out of the base as far as possible.

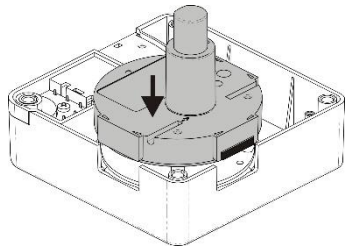
Arrangement for right-hand door



2.) Turn the control mechanism and electronics through 90° in the corresponding direction.

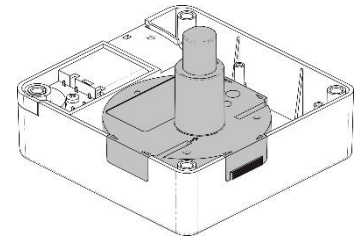


3.) Replace the control mechanism and electronics in the base.



4.) Thus the GAT Lock 6010 F has now been turned and prepared for the door opening on the other side.

Arrangement for left-hand door



3.5. Installation Instructions

No cabling is necessary, because it is battery operated. The GAT Lock 6010 F is attached to the wall of the door using four screws.

Recommended screws:

- For steel doors: Cheese head screws M5 x 35 mm (1.4 inch)
- For wooden or HPL doors: woodscrews ABC Spax 5 x 35 mm (1.4 inch)
- For wooden or HPL doors under heavy-duty loads or in public areas: screw-in muffs or glue-in muffs M5 with pan-head screws M5 x 35 mm (1.4 inch)

The maximum diameter of the screw head may be 9 mm (0.35 inch).

In the case of sheet metal doors, 4 drill holes including M5 thread have to be made. In the case of wooden and HPL doors, notches have to be made in the 4 hole positions and in the case of harder doors, where the screws cannot be screwed in easily, the holes have to be pre-drilled.

NOTICE	The drill holes for the screws must not be drilled completely through the door!

For the button of the GAT Lock 6010 F a hole must be drilled in the locker door. The recommended diameter for this hole is 23 mm (0.9 inch).

At metallic doors the drill hole diameter has an influence on the reading range for the data carriers (see "2.3. Reading Ranges") and also the pay attention that the drill hole and the button is centred (see next pages).

NOTICE	Check that there is no pressure applied to the button shaft of the GAT Lock 6010 F in assembled state, e.g. by a part of the locker door or a front label! This could lead to malfunction of the GAT Lock 6010 F.

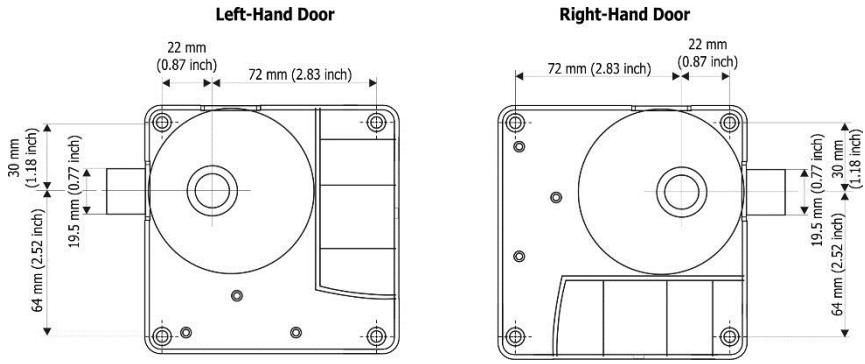


Figure 2.6 *– Drill hole measurements*

3.5.1. Mounting on Non-Metallic Doors

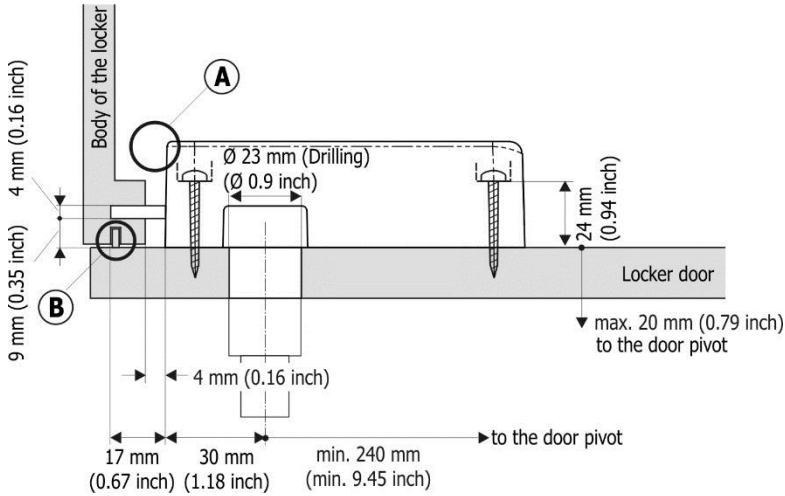


Figure 2.7 *– Drill hole plan for left-hand locker door*

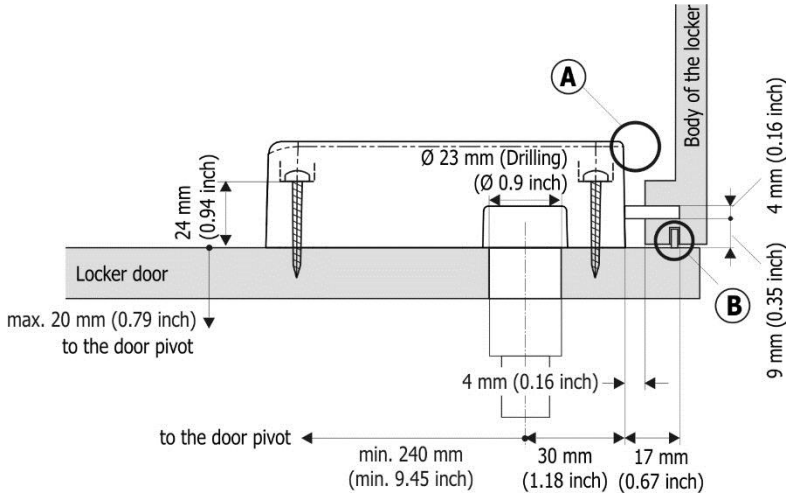


Figure 2.8 *– Drill hole plan for right-hand locker door*

Note re. (A) :
Care must be taken during installation to make sure that the GAT Lock 6010 F does not brush against the body of the locker when the door is opened. The distance of 4 mm (0.16 inch) given between the lock housing and the body of the locker is valid for a distance door pivot <-> centre of the button greater 240 mm (9.45 inch) and a distance door pivot <-> lock base surface (installation surface) smaller 20 mm (0.79 inch) (also negative). In the case of doors that do not adhere to these measurements or with doors with a changeable pivot (depending on the kind of hinge used), the distance between the lock and the body of the locker has to be enlarged or recalculated.

Note re. (B) :
To increase break-in protection, a safety bolt has to be mounted on the body of the locker which enters the door leaf when the door is closed.

3.5.2. Mounting on Metallic Doors

When the GAT Lock 6010 F is mounted on a single walled metal door, it is recommended to mount the lock with corresponding distance to the locker door (see Figure 2.9), e.g. by using a mounting ridge. In this case the lock can be mounted on the inside of the locker wall (see "2.6. Installation Procedure") and no drillings must be made on the outside of the locker door.

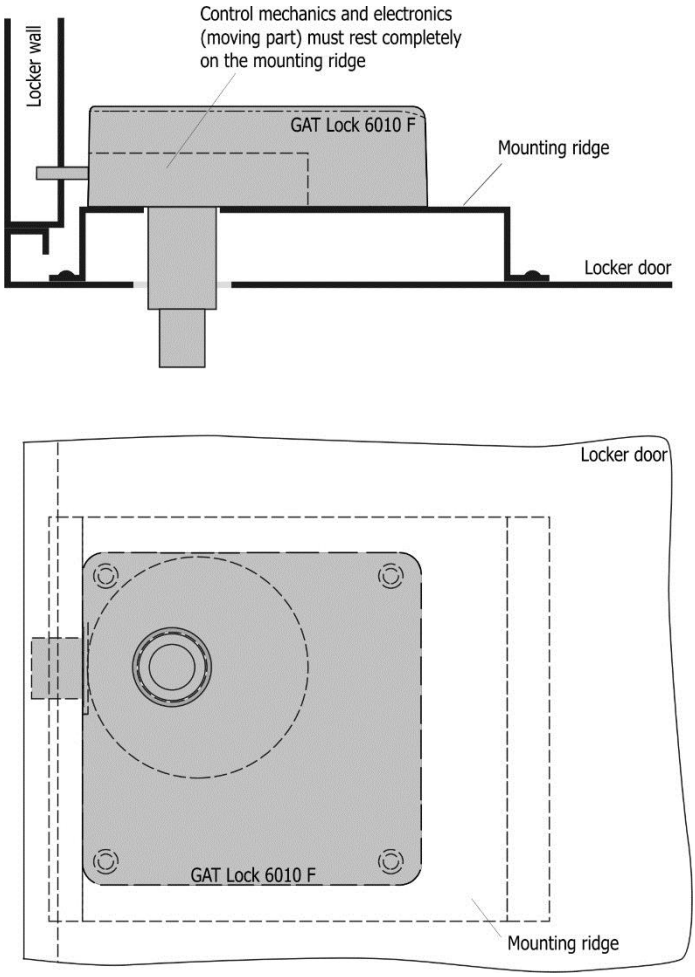


***Figure 2.9** – Mounting the GAT Lock 6010 F onto a metal locker door (principal drawing)*

When the GAT Lock 6010 F is mounted on double metallic locker doors it can be mounted directly onto the door.

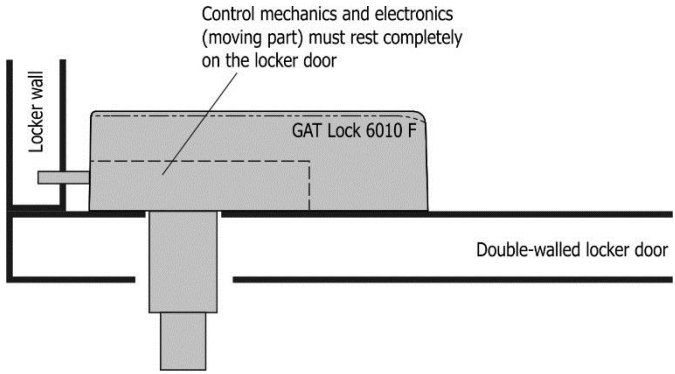


***Figure 2.10** – Mounting the GAT Lock 6010 F onto a double-walled metal locker door*

NOTICE	The GAT Lock 6010 F always has to be mounted parallel to the locker door!

The following points must be considered:

- The control mechanics and electronics of the GAT Lock 6010 F must rest completely on the door or the mounting ridge.
- The diameter of the button hole in the door has an influence on the reading range and therefore it must be large enough to guarantee a secure reading of the data carriers at the GAT Lock 6010 F (see "2.3. Reading Ranges").
- Furthermore the hole and the button have to be centred. Otherwise the reading range for reading data carriers at the GAT Lock 6010 F will be decreased.

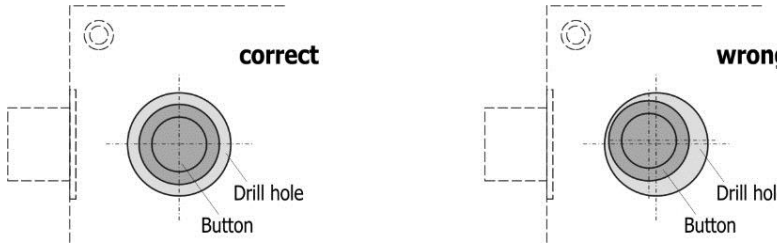


***Figure 2.11** - Adjustment of the drill hole in the door and button of the GAT Lock 6010 F*

3.6. Installation Procedure

The GAT Lock 6010 F must be installed in the following order, while considering also the previous sections:

1.) Mark drill holes.
2.) Drill hole for button.
3.) If necessary, drill holes for fastening the housing in place and cut threads (see "2.5. Installation Instructions").
4.) Screw the housing of the GAT Lock 6010 F in place using four fastening screws (see Figure 2.12).
5.) Stick number label and instruction label on the door (see Figure 2.12).

NOTICE	Don't use metallic number labels or else the reading range will be decreased to the same reading range and restrictions as for metallic doors (see "2.3. Reading Ranges").

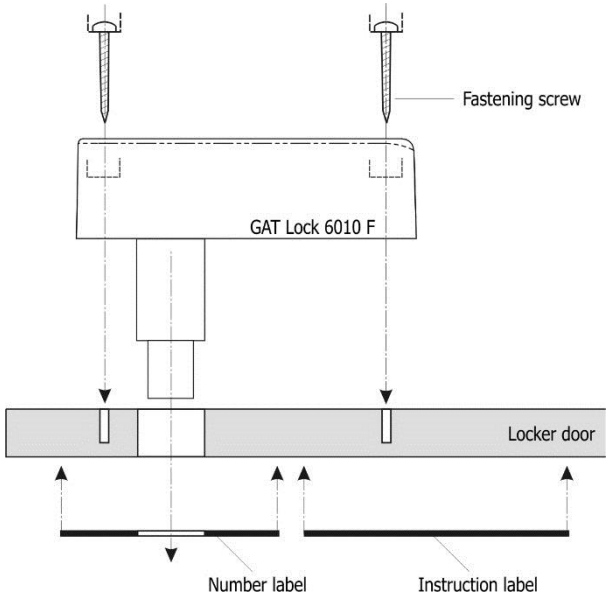


***Figure 2.12** – Attachment of the GAT Lock 6010 F*

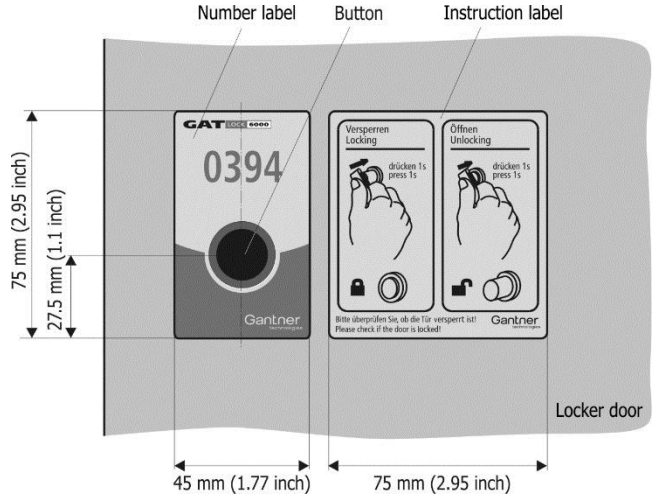


***Figure 2.13** – Attachment of the number label and the instruction label*

Note: Make sure the battery compartment can be opened easily and that no other parts hinder the battery compartment being swung in and out.

NOTICE	Before the first lockers are built in series, a trial lock installation must be carried out!

3.7. Transportation

The locker locks GAT Lock 6010 F may be installed at the manufacturer of the lockers and the lockers will then be transported to the site, where they are installed and put into operation.

NOTICE	The batteries must be inserted into the GAT Lock 6010 F **after** the transportation, i.e. after the lockers are installed on site! If the batteries would be in the locks during transportation, the batteries could get empty and so the lockers cannot be opened anymore!

4. START-UP

4.1. Inserting the Battery

Before putting the GAT Lock 6010 F into operation, make sure there is a battery inserted in the battery compartment. Otherwise insert a battery (see "5.1. Changing the Battery").

The batteries must be inserted into the GAT Lock 6010 F **after** the transportation, i.e. after the lockers are installed on site!

4.2. Configuration

Each GAT Lock 6010 F can be configured individually using a configuration device (PC, laptop). This configuration is a one-off operation. During configuration, the following data are imported into the GAT Lock 6010 F:

- SiteKey
- Sub-site number
- Locker number
- GAT Lock 6010 F mode ("Free Locker", "Free Locker with UID", "Personal Locker with Programming Card" or "Personal Locker with Expiry Date" mode, see "4.2 Operation Modes")
- Free Locker: Sector number of the data on the data carrier and locking time (for "limited duration of use" function).
- Date and time (set automatically)
- Unique numbers of the master data carriers

Note: The master data carriers can also be directly programmed into a lock. Because of efficiency reasons, it is recommended to programm the data carriers into the locks with the use of a PC-software (e.g. GAT Config Manager). After the configuration of the first lock, carry out a test whether the master data carriers and the normal data carriers are read correctly.

The GAT Lock 6010 F doesn't set the daylight saving time automatically! This has to be considered by the evaluation of the bookings and also by the authorisation of the data carriers with expiry date!

4.2.1. Configuration Procedure

1.) Connect the battery compartment to the configuration device (PC, laptop) using the GAT Lock 6000 Progamming Cable USB.
2.) Install the USB-driver for the programming cable (if not already installed).
3.) a) Press the button as far as it will go using the Service Data Carrier and keep it pressed for about 1 second until the Service Data Carrier is read.
    b) If a GAT Lock 6010 F has the factory default site number of "99999999", it can be set into service mode without any Service Data Carrier by just pressing the button by hand (no data carrier needed).
4.) The LED of the lock will begin to flash red and green alternately to signalize that the GAT Lock 6010 F is now in service mode. If a Service Data Carrier was used it can be removed again.
5.) Now the GAT Lock 6010 F can be configured using the configuration software on the PC (e.g. GAT Config Manager). A detailed description of the configuration can be found in the online help of the software.
6.) After configuration remove the programming cable. The configuration procedure is completed now.

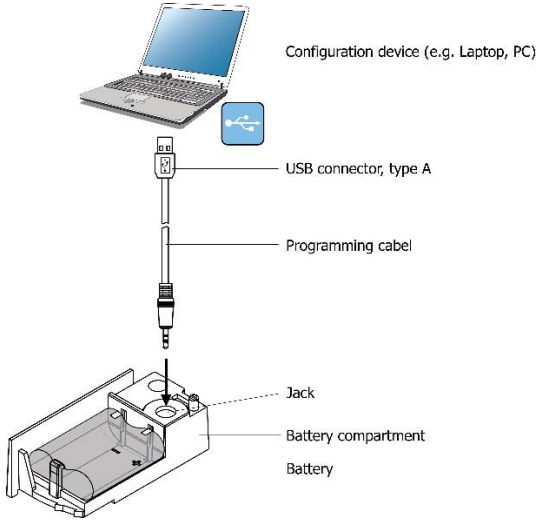


Figure 3.1 *– Configuration environment*

Pay attention that in case the GAT Lock 6010 F is configured before installation and the batteries are removed for transport of the lock/locker, the time and date must be set again after inserting the batteries.

5. OPERATION

5.1. General

The GAT Lock 6010 F can be operated in "Free Locker" mode (free selection of a locker) or "Personal Locker" mode (lockers are assigned to persons). With Free Locker mode the customer can choose any locker he wants to use. With Personal Locker mode a certain locker is assigned to the customer.

When using Free Lockers and Personal Lockers in one system it is recommended that the locker numbers are unique for both functions, which means that the same locker number should not be used for both, a Personal Locker and a Free Locker.

To save battery power, the GAT Lock 6010 F is deactivated in its normal state. For this reason, the electronics must be activated before identification or operation can take place using a MIFARE® data carrier. This is done by pressing the button in completely.

5.2. Operation Modes

The GAT Lock 6010 F can be operated in the following operation modes:

- Free Locker mode (with or without limited duration of use - firmware version 3.2 and above)
- Free Locker mode with UID - firmware version 3.2 and above
- Personal Locker mode (with Programming Data Carrier)
- Personal Locker mode (with expiry date)

Requirements for MIFARE® data carriers:

With the GAT Lock 6010 F, the following data carrier types can be used:

- MIFARE™ Classic (4 byte unique number)
- MIFARE® Classic (7 byte unique number) - firmware version 3.2 and above
- MIFARE® DESFire (only at non-metallic doors!) - firmware version 3.0 and above
- MIFARE® Ultralight – firmware version 3.2 and above

The MIFARE® data carriers, which are used in the different operation modes, must fulfil the specifications indicated in the following table.

Operation Mode	Requirements for MIFARE® Data Carriers
Free Locker mode	Data carrier must be coded accordingly
Free Locker mode with UID	All ISO 14443 data carriers are possible
Personal Locker mode	Data carrier can be coded or uncoded
Personal Locker mode	Data carrier must be coded accordingly

Table 4.1 *- Requirements for MIFARE® data carriers*

5.2.1. Free Locker Mode (with or without Limited Duration of Use)

Any unoccupied locker that is operating in free locker mode can be selected by guests for use and locked using their assigned data carrier. Once the locker is locked, no further lockers in the same locker group can be locked by the user. Only once the original locker has been unlocked can the guest use another locker in the locker group.

Locker groups are used to organize the lockers within a facility into functional blocks. For example, changing room lockers, safe-deposit boxes, etc. Sector numbers stored on the data carrier are used to distinguish between the different locker groups. Therefore, depending on the type of data carrier, this organization allows one data carrier to use two or more lockers from different groups.

For systems where data carriers programmed with an expiry date are in use, the expiry date is checked by the GAT Lock 6010 F. If the date has passed, the locker cannot be locked or unlocked.

The GAT Lock 6010 F does not automatically adjust to daylight saving time.

Free locker mode also offers the possibility to define a duration of use for each data carrier. If the lock is configured for this function, the current time is written onto the data carrier and the time subsequently checked when the user attempts to open the locker again.

The data carrier must be coded accordingly for the duration of use function. In addition, the duration of use function must be configured for the GAT Lock 6010 F in GAT Config Manager. There are two operating modes:

"Absolute duration of use" Mode
In "Duration" mode, a period for use is defined. After locking a locker, the user must unlock the locker again within the defined period. The period begins from when the locker was first locked.

Example - "Duration" mode
The time is set to 360 minutes. If the locker is locked at 17:00 it can be unlocked until 23:00. If the locker is locked at 21:00 it can be unlocked until 3:00 the next day. The duration of use time is reset after the locker remains open for 60 minutes.

"Usage until a certain time after midnight" Mode

In “Point of time" mode, a specific time is configured until which the locker can be used. After locking a locker, the locker must be unlocked again before the defined time on the following day. The period begins from 12:00 am.

If the period is exceeded, the data carrier can no longer unlock the locker. In this case, the user must recode their data carrier at a central station, e.g., the GAT Lock 6800 F with additional license (Part No. 193732).

Example - "Point of time" mode
The time is set to 120 minutes. The locker usage period begins from 12:00 am. Independent of the time when the locker is locked it can be unlocked until 2:00 am of the next day. If the locker is locked at 1:00 am it can be unlocked until 2:00am of the next day.

For both operating modes, the locker can be locked/unlocked as often as required during the duration of use period.

For free locker mode, specially coded MIFARE data carriers must be used. the data carrier must be coded according to GANTNER’s locker coding specification.

Locking and Unlocking Lockers

1.) Hold the locker door pressed shut with one hand.

2.) Press the button of the GAT Lock 6010 F as far as it will go using the MIFARE® data carrier and keep it pressed for about 1 second.
→ The information on the data carrier will be read.

3.) a) If the MIFARE® data carrier is valid, the LED will light up green briefly and the action (locking, unlocking) is carried out. With the duration of use functionality the time on the data carrier is checked and the current time is written onto the data carrier.
b) If the MIFARE® data carrier is invalid, the LED will light up red briefly and the GAT Lock 6010 F is switched off again without an action being carried out.
→ A possible reason for that can be that another locker has already been locked with the used data carrier. In this case the other locker must first be unlocked before the data carrier can be used at the new locker. Another reason can be that the duration of use of the locker is exceeded and therefore the locker cannot be opened anymore. In this case the data carrier must be recoded with a write station.

4.) Release the locker door.

The data carrier must be kept in front of the button until the locking resp. unlocking is done. Don't remove the data carrier too early.

5.2.2. Free Locker Mode with UID

This operation mode is different from the standard mode "Free Locker Mode" in the following points:

- All ISO 14443 data carriers are possible.
- The data carrier can have a GANTNER locker segment, but this is not required for this mode.
- If a locker is locked with a data carrier, the locker number isn´t written onto the data carrier.
- With each data carrier, any number of lockers can be locked at the same time.

Locking and Unlocking Lockers

1.) Hold the locker door pressed shut with one hand.

2.) Press the button of the GAT Lock 6010 F as far as it will go using the MIFARE® data carrier and keep it pressed for about 1 second.
→The information on the data carrier will be read.

3.) a) If the data carrier is valid, the LED will light up green briefly. The action (locking,unlocking) is carried out.
b) If the data carrier is invalid, the LED will light up red briefly and the GAT Lock 6010 F is switched off again without an action being carried out.

4.) Release the locker door.

5.2.3. Personal Locker Mode with Programming Card

For operation as a Personal Locker with Programming Card, up to any 32 MIFARE data carriers can be authorised per GAT Lock 6010 F, which may then open and close this locker as often as required. These 32 data carriers have the same authorisation (e.g. as family cards).
The authorisations are communicated to the GAT Lock 6010 F by means of a Programming Data Carrier.

Authorising MIFARE Data Carriers

1.) Hold the locker door pressed shut with one hand.

2.) Press the button of the GAT Lock 6010 F as far as it will go using the programming data carrier and keep it pressed for about 1 second.
→ The information on the data carrier will be read.

3.) The GAT Lock 6010 F changes into the Programming mode.
→ The LED will light up red for about 2 seconds after the Programming Data Carrier is removed. When the LED will start flashing green and red alternately the lock is ready for the programming of data carriers.

4.) Now you have 5 seconds to press the button of the lock with the MIFARE data carrier to be authorised.

5.) a) If the authorisation is successful, the LED will light up green for about 3 seconds. As soon as the data carrier is removed the LED will start flashing green and red alternately and another data carrier can be programmed the same way. This process can be repeated until all data carriers are programmed.
b) If the authorisation is not successful, the LED will light up red briefly 3 times.
→ Reasons for this could be:
- that 32 MIFARE data carriers are already authorised for this particular GAT Lock 6010 F
- that the used MIFARE data carrier has already been authorised
- that the MIFARE data carrier could not be read (button not pressed long or firmly enough).

Deleting (Remove Authorisation) of MIFARE® Data Carriers

Only all authorisations can be deleted at once in the GAT Lock 6010 F.

1.) Hold the locker door pressed shut with one hand.

2.) Press the button of the GAT Lock 6010 F as far as it will go using the programming data carrier and keep it pressed for about 1 second.
→ The information on the data carrier will be read.

3.) The GAT Lock 6010 F will change to Programming mode.
→ The LED will light up red for appr. 2 seconds after the Programming Data Carrier is removed. As soon as the LED will start flashing green and red alternately the lock is ready to delete the data carriers.

4.) Within the next 5 seconds press the button of the lock again with the Programming Data Carrier.

5.) If the action is successful, the LED will flash red 5 times and the GAT Lock 6010 F then switches off again. Release the locker door.
→ All data carriers are now deleted from in GAT Lock 6010 F and therefore have no longer authorisation to lock and unlock the locker.

5.2.4. Personal Locker Mode with Expiry Date

At the check-in the customer receives a MIFARE data carrier with GANTNER data blocks. The site number and sub-site number will be written to the general data block and the customer's personnel locker number together with the expiry date ("valid from" and "valid to") will be written to the locker data block of the data carrier. Furthermore an index value will be written to that locker data block. The "valid from" date must always be valid, i.e. newer or equal to the date stored in the used locker lock.

On first identification at a locker the expiry date ("valid to" date) and the current index value of the data carrier will be stored in the lock. Then the customer can lock and unlock his locker any time, starting at the "valid from" date, and as long as the expiry date is not reached or exceeded. Note that with firmware version 3.3 and later the expiry date and the index value are also written to the lock when reading a data carrier while the locker door is locked.

Pay attention that the GAT Lock 6010 F doesn't set the daylight saving time automatically. This must be considered for evaluation of events and for authorising data carriers with expiry date.

For the data carriers of the authorised persons the following conditions must be fulfilled:
- The same locker number must be stored on the data carriers
- Same expiry date
- Same index value

If one of these data carriers is then used at the locker for the first time, the expiry date and the index value of the data carrier gets saved in the locker.

Locking and Unlocking Lockers

1.) Hold the locker door pressed shut with one hand.

2.) Press the button of the GAT Lock 6010 F as far as it will go using the MIFARE data carrier and keep it pressed for about 1 second.
→ The information on the data carrier will be read. The locker number of the data carrier has to correspond with the locker number in the lock.

3.) The following situations are possible:
The data carrier…
   a) …is the first data carrier read at the locker.
   Unique number, expiry date and index of the data carrier are stored in the lock. The data carrier is able to lock and unlock the locker until the end of the validity duration.
   b) …has the same "valid to" date and index value as stored in the lock:
   In this case the unique number of the data carrier will be stored in the lock (as long as the max. number of 32 data carriers is not exceeded) and the data carrier is now authorised to lock and unlock the locker like the already authorised data carriers.
   c) …has a higher index value on the data carrier than in the lock:
   In this case the new index value and the "valid from" and "valid to" date on the data carrier will be stored in the lock and the previously authorised data carriers will be deleted in the lock, i.e. they are no longer authorised for the lock.
   d) …has a newer "valid to" date and the same index than in the lock:
   In this case the index value and the "valid from" and "valid to" dates on the data carrier will be stored in the lock. The previously authorised data carriers will be deleted in the lock, i.e. they are no longer authorised for the lock.

   Note: b) is possible if the locker is locked or unlocked. c) and d) is only possible if the locker is unlocked (open).

4.) Release the locker door.

5.) a) Valid MIFARE data carrier: The information on the data carrier will be stored in the lock. The locker state will be changed, i.e. the locker will be opened, if it was locked, and will be locked, if it was opened.
   b) Invalid MIFARE data carrier: The LED will light up red briefly and the GAT Lock 6010 F is switched off again without an action being carried out.

The MIFARE data carrier must be kept in front of the button until the locking resp. unlocking is done. Don't remove the data carrier too early.

A data carrier with another index value than in the lock can be used for example to rent an already rented lock again i.e. the next day and to set the other data carriers in the lock invalid. This means that the deleted data carriers in the lock are no longer authorised to lock or unlock the locker.

There is also no unlimited expiry date, i.e. the expiry date must be a valid date and not be "0". After the "valid to" date the locker cannot be unlocked with the data carrier anymore (only with a Master Data Carrier - see next section).

Note: After the rental duration the locker resp. cabin must be checked. Because it may be possible that the previous customer hasn't cleaned the locker or took all his belongings, but a new renting of the locker is already possible.

5.3. Summary of System Data Carriers

For the start-up and maintenance of the battery-operated lock several data carriers are necessary. These data carriers are shipped together with the GAT Lock 6010 F in form of RFID cards with corresponding labelling in different colours.

The available system data carriers are listed below:

- Master data carrier (3 pieces, red)
- Programming data carrier (black)
- Battery data carrier (blue)
- Reset data carrier (green)
- Service data carrier (yellow)

The system data carriers are system-dependent and therefore work only at the respective system.

5.3.1. Master Data Carrier

A master data carrier is used to open and lock all the locks in a system. If a MIFARE® data carrier should be lost, emergency opening of the corresponding locker can be carried out using a master data carrier.
Three master data carriers are supplied per system. These are only valid for the respective system.

If a master data carrier should be lost, a new master data carrier can be ordered from GANTNER Electronic GmbH. Before the new master data carrier is used, the "old" master data carrier(s) has (have) to be deleted from GAT Lock 6010 F first (the number of a master data carrier is stored in the lock the first time the master data carrier is used). This is carried out using the reset data carrier. The following procedure has to be followed:

1.) Hold the locker door pressed shut with one hand.

2.) Press the button of the GAT Lock 6010 F using a reset data carrier and keep it pressed for approx. 1 second.
→ The information on the reset data carrier will be read.

3.) The LED flashes red briefly for five times.
→ All Master data carriers have been deleted from the lock. Next the LED starts flashing green and red alternately and the new Master data carriers can now be programmed.

4.) Within the next 5 seconds press the button of the GAT Lock 6010 F with a new Master data carrier.
→ As soon as the data carrier was recognised correctly the LED will light up green for 3 seconds. Remove the Master data carrier and the LED will start flashing green and red alternately. Another Master data carrier can now be programmed. This can be repeated until all three Master data carriers are programmed.

5.) Repeat the process until all three Master data carriers are programmed.

The system operator has to guarantee the safe and secure storage of the master data carriers!

5.3.2. Programming Data Carrier

The programming data carrier is used to program the GAT Lock 6010 F and to authorise data carriers in the "Personal Locker" mode or to delete the existing programming and authorisations.

5.3.3. Battery Data Carrier

After a battery replacement the GAT Lock 6010 F is in the Battery Replacement mode and it has to be set back to the normal operation mode by using a battery data carrier. The internal action counter is set to zero when the battery data carrier is used. With a battery change of a GAT Lock 6010 F in "Personal Locker" mode the authorisations in the lock will not be deleted.

5.3.4. Reset Data Carrier

The reset data carrier is used to delete all the master data carriers stored in a GAT Lock 6010 F.

5.3.5. Service Data Carrier

The service data carrier is used to set the GAT Lock 6010 F to communication mode. In this mode the GAT Lock 6010 F is configured via a PC or Laptop.

5.4. Summary of the LED States

The electronics of the GAT Lock 6010 F is switched-on by pressing the button of the lock. This will also be signalled with the LED at the button shaft (LED blinks orange once). After this the following lock states can be signalled with the same LED.

LED	State	Meaning	Free Locker mode	Personal Locker mode	Possible actions
green	1x short flash	Valid MIFARE® data carrier has been read	X	X	Locking/unlocking possible
green	1 x flash	Battery replacement completed	X	X	GAT Lock 6010 F is again ready for operation
red	5 x flash	All master data carriers have been deleted from the GAT Lock 6010 F	X	X	New master data carriers can be programmed in the GAT Lock 6010 F.
red	5 x flash	All authorisations have been deleted	-	X	
red + green	alternate flashes	Start-up - service mode, program-ming mode	X	X	Ready for configuration
red	1x brief flash	Invalid data carrier or no data carrier (e.g. when pressing the button with only a finger)	X	X	GAT Lock 6010 F is switched off without action, failed attempt at authorisation, replace data carrier
red	2 x flash every 5 seconds	Battery almost empty	X	X	Battery change is necessary

Table 4.2 *- Summary of the LED states*

6. SERVICE AND MAINTENANCE

6.1. Changing the Battery

The battery of a GAT Lock 6010 F is dimensioned for a certain number of locking cycles (see "7. Technical Data"). The number of cycles depends on the used battery type, the type of locker usage and the environmental conditions. When the max. locking cycles are reached, the battery capacity will get too low and the battery must be replaced with a new one. If the battery gets too weak, the locker can no longer be locked and in this case the LED of the GAT Lock 6010 F will flash red twice every 5 seconds.

A 6V lithium battery 2CR5 must be used for the GAT Lock 6010 F. The market offers several batteries of that type. **But not every battery** of that type can be used. Only use one of the following batteries:
- Manufacturer: Panasonic, Typ 2CR5
- Manufacturer: Ansmann, Typ 2CR5
- Manufacturer: Sanyo, Typ Y-PC-2CR5-I
- Manufacturer: Duracell, Typ 2CR5

Battery replacement must not take longer than 2 minutes as otherwise the time and date set in the GAT Lock 6010 F are lost. In this case, the time and date have to be set again by using the PC (see "3.2 Configuration").

The batteries must be inserted into the GAT Lock 6010 F **after** the transportation, i.e. after the lockers are installed on site.

Replacement is only possible using a special battery compartment key (see Figure 5.1). The battery compartment key has to be kept in a safe place.

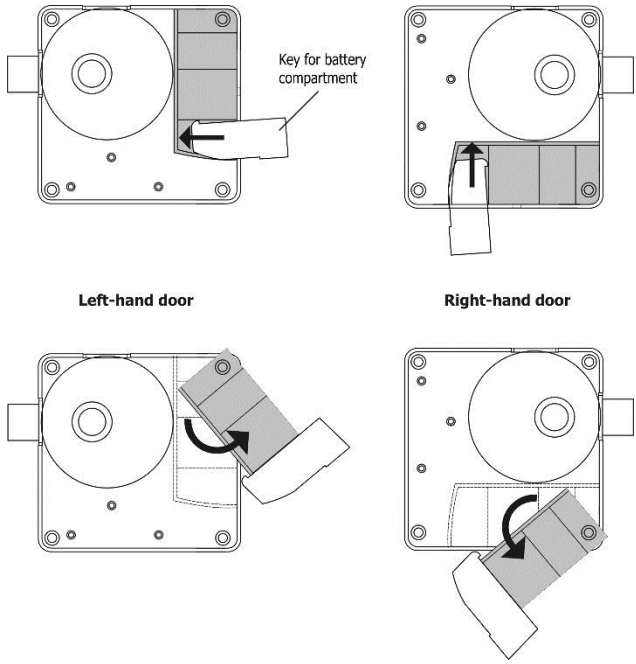


Figure 5.1 *– Opening the battery compartment*

Make sure of the correct polarity and correct position when inserting the battery!

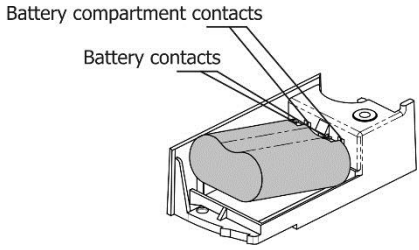


Figure 5.2 *– Battery insertion, view from above*

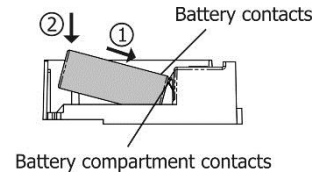


Figure 5.3 *– Battery insertion, cross section*

6.1.1. Procedure

1.) Unlock the battery compartment using the battery compartment key and swing the cover open.

2.) Remove the old battery and insert a new one in such a way that the fixing strip can be heard to snap into place.

The battery has to be inserted with the contacts to the front of the battery compartment first. Make sure the polarity and position of the battery is correct (see Figure 5.2 and Figure 5.3).

3.) Close the battery compartment again until it can be heard to click into place.

4.) Press the locker door shut with one hand and hold it pressed.

5.) Press the button for approx. 1 second using a Battery data carrier.

6.) The system will flash green twice briefly. From this moment onwards, the GAT Lock 6010 F can be used again.

7.) Release the locker door.

Do not dispose batteries with domestic waste!

⇨ Dispose batteries in an eco-friendly way, i.e. through a municipal battery collecting box.

7. TROUBLESHOOTING

7.1. Error Display

If there is a problem with the GAT Lock 6010 F, this is indicated by the LED which will flash red in this case.

7.2. Error Description

Description: LED flashes red twice (every 5 seconds).
Error: Battery is weak.
Solving the error: Replace battery (see "5.1 Changing the Battery").

Description: GAT Lock 6010 F cannot be locked (Free Locker).
Error: The user is already occupying a locker, the expiry date on the MIFARE data carrier has passed.
Solving the error: Using a GAT Info 6xxx F, the number of an occupied locker can be shown by the MIFARE® data carrier. If the user has already occupied a locker, he can only occupy another locker once he has opened the original locker again using the MIFARE data carrier or if the data carrier is reinitialised (e.g. at the reception desk of the facility).

Description: GAT Lock 6010 F cannot be locked (Personal Locker).
Error: The MIFARE data carrier has not been authorised at this locker.
Solving the error: Authorise the MIFARE data carrier at the locker using a programming data carrier (see 4.2.3 Personal Locker Mode with Programming Card).

Description: GAT Lock 6010 F doesn't respond.
Error: Battery is empty.
Solving the error: Change the battery (see "5.1 Changing the Battery").

8. TECHNICAL DATA

8.1. Power Supply

Power supply:	6 V battery 2CR5
Usable battery types:	- Manufacturer: Panasonic, Typ 2CR5 - Manufacturer: Ansmann, Typ 2CR5 - Manufacturer: Sanyo, Typ Y-PC-2CR5-I - Manufacturer: Duracell, Typ 2CR5
Battery life-time:	Approx. 3 years* at +20 °C * depending on battery type and battery quality

8.2. Reader/Write Field

Reader Type:	MIFARE®
Frequency of read field:	13.56 MHz
Range of read field:	5 to 35 mm, according to the installation and used data carrier

8.3. Memory and Electronics

EEPROM:	50 bookings, data preservation also by battery change
Internal clock:	Quartz-controlled real time clock

8.4. Control and Display Elements

Control element:	Button
Display element:	LED (red / green / orange) for status indication

8.5. Interfaces

Configuration interface type:	RS 232
Baud rate:	38,400 bps

8.6. Housing

Material:	Plastic (PC-ABS), halogen-free
Housing colour:	Dark gray

8.7. Environmental Conditions

Permitted ambient temperature:	0 °C to +60 °C
Protection type:	IP 52
Protection class:	III
Weight:	0.2 kg
Environment class based on VDS 2110:	II (conditions in indoor areas)

8.8. Dimensions

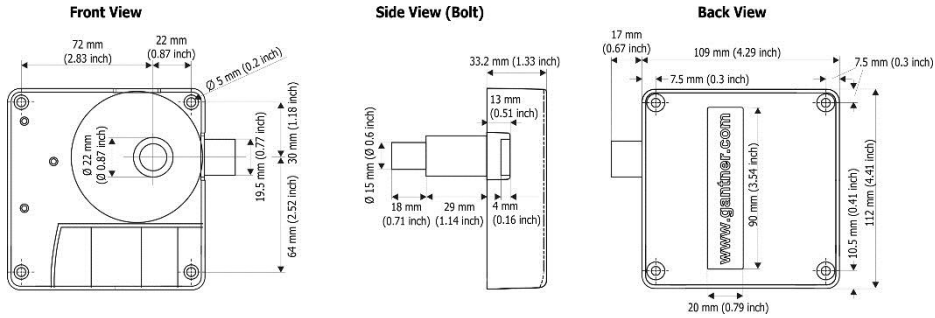


Figure 7.1 *– Dimensions of the GAT Lock 6010 F for right-hand door*

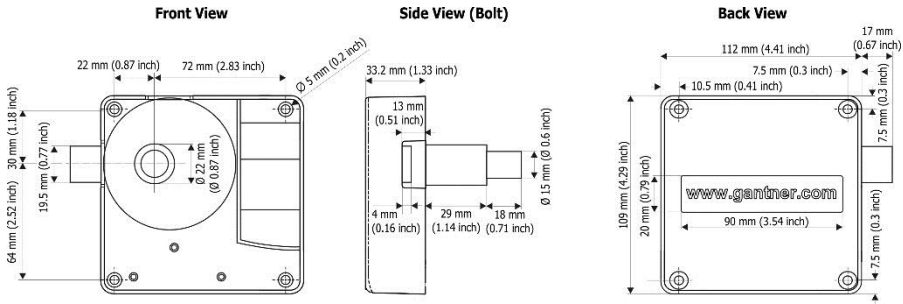


Figure 7.2 *– Dimensions of the GAT Lock 6010 F for left-hand door*

9. SPARE PARTS AND ACCESSORIES

- GAT Lock 6010 F (without battery)
  Part no.: 820679

- Battery 6V Lithium 2CR5
  Part no.: 125273

- GAT Battery Key
  Part no.: 128276

- Master Data Carrier for GAT Lock 6010 F
  Part no.: 736786

- User data carrier GAT Chip Band 10 F B195
  Part no.: 829486

- User data carrier GAT Chip Band 60 ISO
  Available in different colours, part no. see order information

- User data carrier GAT Chip Card 200 F
  Part no.: 500371

- Front Label GAT Lock 6000 BED - label with operating instructions
  Part no.: 154881

- Front Label GAT Lock 6000 GEA without number
  Part no.: 154780

- Front Label GAT Lock 6000 GEA with number
  Part no.: 146377

- GAT Lock 6010 F Demo Kit
  Part no.: 822378
  includes: - GAT Lock 6010 F with battery, mounted on Plexiglas holder
  - GAT Lock 6010 F Service Data Carrier
  - GAT Lock 6010 F Programming Data Carrier
  - GAT Lock 6010 F Reset Data Carrier
  - GAT Lock 6010 F Battery Data Carrier
  - GAT Lock 6010 F Programming Cable
  - GAT Battery Key

FCC INFORMATION (U.S.A.)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC § 15.19

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Warning Statement

[Any] changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution

To maintain compliance with the FCC's RF exposure guidelines, place the GAT Lock 6010 F at least 20cm from nearby persons.

Canada CNR-Gen

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Note:

This manual is valid as of November 28th, 2016. It is subject to change.

Amendments and changes can be made without prior notice at any time.

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