

HL100 Fingerprint Lock User Manual

Version: 1.0

About This Manual

This manual introduces the fingerprint lock interface and menu operations for the HL100. For the fingerprint lock installation, see the installation manual.

Thank you for purchasing the **ZKbiolock** HL100 fingerprint deadbolt.

Please read the documentation carefully before installation & use.

The manual details all installation procedures and operation steps.

Manufacturer, dealers and distributors of the ZKbiolock HL100 will not be responsible for any damages caused by incorrect installation or mishandling of the lock.

Any such damages will void manufacturer's warranty.



Due to the constant update of products, the company cannot guarantee consistency of the actual product and the information in this document, or any dispute caused by the difference between the actual technical parameters of the product and the information in this document.

IMPORTANT NOTICE – read before programming and installing:

1. Keep your fingers clean when using this product.
2. In the state of new lock (factory setting), the lock can be unlocked with any fingerprint.
3. User must first change default master passcode (98989) when lock is installed to be able to enroll any users.
4. User must have registered at least one administrator user before enrolling an ordinary user.
5. You can use the same user ID # to enroll a fingerprint and PIN per person.
6. When opening the door, if the lock beeps an alarm and the indicator light flashes, it's indicating the lock is in insufficient voltage level. Please change the batteries.
7. Lock operations have a stand-by (idle) time limit of 10 seconds; lock will shut off after 10 seconds of no activity
8. This product can save 100 users, among which 5 are administrator users (Code: 995-999), and other 95 are ordinary users (Code: 900-994).
9. The dirt on the surface of fingerprint collection window may affect the normal use. Therefore please keep it clean.
10. Do not clean the lock surface with corrosive substances, or else the protection layer may be damaged and thus influence the gloss of the lock surface. Therefore please clean the lock surface periodically with furniture polish wax (e.g. Pledge).
11. If the latch bolt fails to draw back and forth freely, or the door cannot be closed normally due to the distortion of the door, please adjust the strike plate's position.
12. When the fingerprint and password fails to work, use the mechanical key to open the door; please keep the mechanical key in a proper place.
13. You can press and hold "0" at any time in management mode to exit, no information will be saved.

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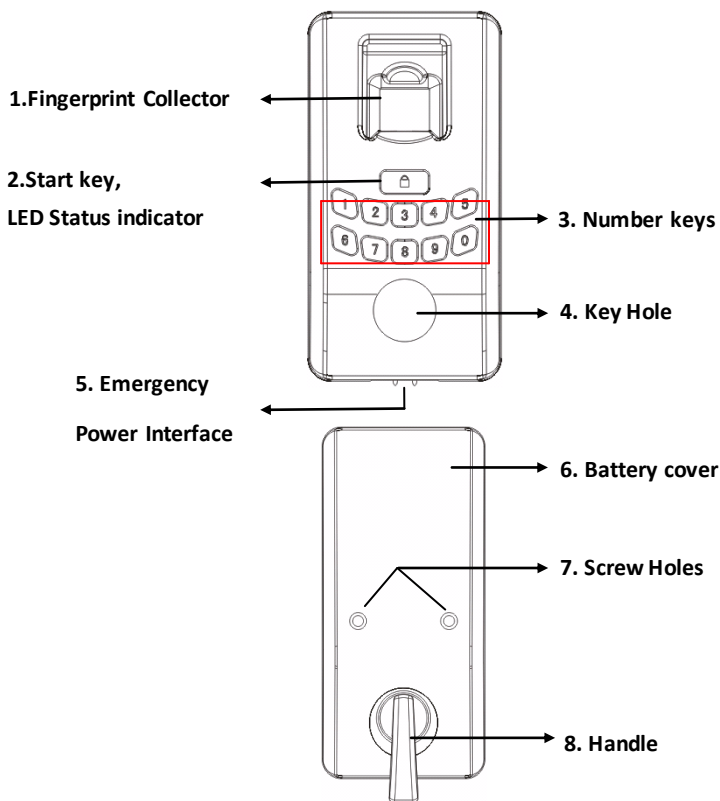
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1 Instruction for Use

1.1 Introduction to Fingerprint Lock Functions

1. By leveraging the perfect combination of biometrics and cryptography, our fingerprint bolt ensures security through the fingerprint and PIN unlocking feature.
2. Use the keypad to finish all relevant operations according to the signals of the buzzer and indication lights. You can simply use our fingerprint locks with ease after following the operation instructions.
3. Support settings of classified privileges for administrators and ordinary users.
4. Supports deletion of all or specified registration data.
5. Fingerprint verification module and PIN registration; 1:N is used for the PIN, and each PIN is unique.
6. Supports a temporary connection with a back-up battery.
7. Supports a generation of low-pressure alarms.
8. Non-lock Status Alarm Function: A non-lock status is when the lock bolt does not pop out normally caused by mechanical breakdown or failure in closing the door after users pass the verification and open the door. In this situation, the buzzer will make a short, sharp alarm sound which will last one minute unless the alarm is removed by manually locking or unlocking the bolt.

1.2 Front and Rear Views



① **Fingerprint Collector:** You can only collect or match fingerprints by placing your finger(s) on the fingerprint sensor when the light in the fingerprint sensor window goes on; otherwise nothing happens when you place your finger(s) on the fingerprint sensor.

② **Start key /LED Status indicator:** This key can be used to start the fingerprint lock. Press and hold this key on the initial interface to enter the verify state of Management Mode.

- ③ **Number keys:** Used to input PIN or user ID.
- ④ **Key Hole:** You can use the included mechanical key for emergency door opening.
- ⑤ **Emergency power interface:** External battery backup connector to be used with a 9-volt battery when internal batteries do not operate.

LED Backlight Indicators:

The LED Backlight Indicators changes to three colors: Red, Green and Blue.

The general rule:

Successful = 1 Long Beep / LED Flashes Green.

Failed = 2 Short Beeps / LED Flashes Red.

Verify State: Green LED flashes every second.

Management Mode: Keypad flashes blue LED every second.



All lock functions should return as above, if not, please contact your local dealer/distributor or visit our website at www.ZKbiolock.com.

1.3 Precautions

1. User must change Master Pass Code (MPC) when they 1st install the Lock. See Change MPC section. User must have at least one administrator user registered before adding any ordinary users. If you don't change the MPC, you can't use any function. If you don't register an Administrator, you can't add an ordinary user.
2. Do not remove batteries when matching, enrolling or deleting fingerprints; the sudden power-down may result in loss of data. Prior to removing batteries, make sure the fingerprint lock is not in working state.
3. It is recommended to replace the fingerprint lock batteries at least once every six months to avoid damaging the circuit due to the battery leakage or corrosion. Do not use batteries with poor quality.

1.4 User Privileges

The user privileges are classified into **two** types: Administrator users and Ordinary users.

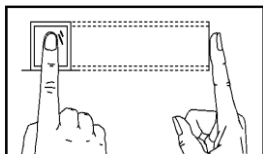
Administrator (Admin): Refers to users who have access to all operations like settings and enrolling user.

Ordinary user: Refers to all users other than the administrators. Ordinary users only have access to the fingerprint matching and unlocking functions.

1.5 Finger Placement

Recommended finger usage: The index finger, middle finger or the ring finger is recommended; the thumb and little finger are not recommended (because they are usually clumsy when pressing on the fingerprint collection screen).

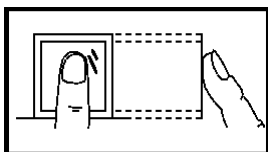
1. Proper finger placement



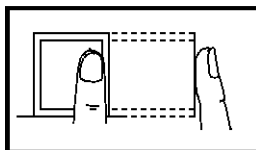
The finger must be flat to the surface and centered on the fingerprint sensor.

2. Improper finger placement

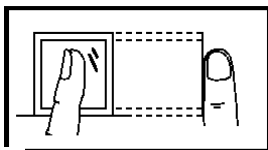
Not flat to the surface



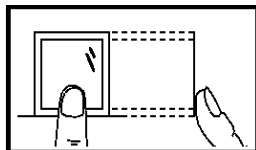
Off-center



Slanting



Off-center



Please enroll and verify your fingerprint by using the proper finger placement mode. We shall not be held accountable for any consequences arising out of the degradation in verification performance due to improper user operations. We reserve the right of final interpretation and revision of this document.

2. The Basic Operation

2.1 Change Master Pass Code (MPC)

**Notice:**

- (1) User must change Master Pass Code when they 1st install the lock, otherwise you can't register administrator.
- (2) User must have registered at least one administrator user before enrolling ordinary user.
- (3) All lock operations have an operation time limit of 10 seconds.

To change **MPC**, follow the procedures shown:

1. Press  key to start lock, which will then enter the Verify State. The LED flashes green light.
2. Press and hold the  key until you hear 1 long beep and the Green LED turns off, and then the keypad flashes blue. Input the default MPC "98989", and then press  key to enter the Management Mode.
3. Press "5" key on the lock and enter the new 5 digit MPC, then press the  key to confirm. Enter the new MPC once again then press the  key to confirm. Once you hear 1 long beep and the  key flashes green, you have successfully changed the MPC code.

2.2 Enroll an Administrator

The lock has two kinds of users: Administrator User and Ordinary User. If the fingerprint lock has no administrator, then you can't enroll ordinary users. You must at least enroll one administrator before enrolling any ordinary users.

To enroll an administrator, enter management mode by following below:

1. Press  key to start lock, and then enter the Verify State.
2. Press and hold the  key until you hear 1 long beep, enter the 5 digit MPC, and then press  key to enter the Management Mode.
3. Press "9" on the lock to enter the Enroll Administrator Mode.

The next step is to enroll fingerprint and password for administrator.

2.2.1 Enroll an Administrator User Fingerprint

😊 **Note: Steps 1-3 are above.**

4. After you enter the Enroll Administrator Mode, enter a 3 digit user ID, and then press  key to confirm.

😊 **Note: The administrator User's ID must between "995" and "999".**

5. Press finger in the scanner area properly (For detail, please see [1.5 Finger Placement](#)), and repeat it three times, until you hear one long beep and LED flashes Green.

Note: During the fingerprint scanning process, if the bolt successfully collected the fingerprints, the  key will flash green. If not, you can continue to place the

finger, so that the lock successfully collects a fingerprint 3 times.

😊 **Note:**

- (1) If Fingerprint lock fails to register. It will give 2 short beeps and the LED will flash red. If you failed to register, you can try again for two more times.
- (2) If it registers successfully, it will automatically exit the Enroll Administrator Mode.
- (3) Press and hold "0" key to exit anytime.
- (4) If you want to enroll more administrator users, then repeat steps 1-5.

2.2.2 Enroll an Administrator User PIN

😊 **Note: Steps 1-3 are same as before (2.2)**

4. After you enter the Enroll Administrator Mode, enter the 3 digit user ID, press  key to confirm.
5. Enter a 4 digit user PIN and press  key to confirm, and then enter the same 4 digit user PIN once again and press  key to confirm, until you hear one long beep and LED flashes green (If it fails to register – it will give 2 short beeps and LED will flash red).

😊 **Note:**

- (1) If Pass code does not match it will fail registration. In this case you will need to follow step 1 to 5 again.
- (2) If successful, it will automatically exit the Enroll Administrator Mode.
- (3) Press and hold "0" key to exit anytime.
- (4) If you want to enroll more administrator users, then repeat the step 1-5.

2.3 Enroll an Ordinary User

☺ **Note:** You must change the MPC and enroll an administrator user first; otherwise you can't enroll any ordinary users.

2.3.1 Enroll a Fingerprint Ordinary User

1. Press  key to start the lock and enter the Verify State.
 2. There are two methods to enter the Management Mode:
 - (1) Press and hold the  key until you hear 1 long beep, enter the 5-digit MPC, and then press  key to enter the Management Mode.
 - OR
 - (2) Verify the registered administrator's PIN or fingerprint (please see [2.4 User Verification](#)) to enter the Management Mode.
 3. Press "1" to enter the Enroll Ordinary User's Fingerprint Mode.
 4. Input a 3 digit User ID, then press  key to confirm.
- ☺ **Note:** The ordinary users' ID must between "001" and "994".
5. Place finger in the scanner area properly (For detail, please see [1.5 Finger Placement](#)), and repeat it three times, until you hear one long beep and LED flashes green.

☺ **Note:**

- (1) If Fingerprint lock fails to register. It will give 2 short beeps and the LED will flash red. If you failed to register, you can try again for two more time.
- (2) If it registers successfully, it will automatically exit the Enroll Administrator Mode.
- (3) Press and hold "0" key to exit anytime.
- (4) If you want to enroll more administrator users, then repeat steps 1-5.

2.3.2 Enroll an Ordinary User PIN

1. Press  key to start the lock and enter the Verify State.
2. Enter the Management Mode, please see step 2 in [2.3.1 Enroll a Fingerprint Ordinary User](#).
3. Press "2" on the lock to enter the Enroll Ordinary User's PIN Mode.

4. Input a 3 digit User ID, and press  key to confirm.

😊 **Note:** The ordinary users' ID must between "001" and "994".

5. Input a 4 digit user PIN, press  key to confirm. Enter the same 4 digit user PIN once again and press  key to confirm until you hear one long beep and the LED flashes green. The keypad's blue LED will turn off. If it fails to register - it will give 2 short beeps and the LED will flash red.

😊 **Note:**

- (1) If Pass code does not match it will fail registration. In this case you will need to follow step 1 to 5 again.
- (2) If successful, it will automatically exit the Enroll Administrator Mode.
- (3) Press and hold "0" key to exit anytime.
- (4) If you want to enroll more administrator users, then repeat the step 1-5.

2.4 User Verification

The users can use fingerprint or PIN verification to unlock.

2.4.1 Fingerprint Verification

1. Press  key to start the lock and enter the Verify State. The **Fingerprint Collector** is in active state.
2. Press finger in the fingerprint scanner area properly (For detail, please see [1.5 Finger Placement](#)), until you hear one long beep.
 - (1) If verification is successful, the buzzer will give a long beep and unlock, the  key will flash green for 3 seconds, the fingerprint scanner will flash green for 5 seconds.
 - (2) If verification failed, the buzzer will give two short beeps, the  key will flash red for 3 seconds, and then the green LED will flash. The user can use fingerprint to verify again until verification is successful.

2.4.2 PIN Verification

1. Press  key to start the lock and enter the Verify State.
2. Input the programmed 4-digit PIN and press  key to confirm.
 - (1) If verification is successful, the buzzer will give a long beep and unlock, the  key will flash green for 3 seconds, the fingerprint scanner will flash green for 5 seconds.
 - (2) If verification failed, the buzzer will give two short beeps, the  key will flash red for 3 seconds, and then the green LED will flash. The user can use PIN to verify again until verification is successful.



Note: After successful verification, the lock is unlocked. To lock, press



key to lock and power off.

2.5 Delete User

2.5.1 Delete a user

1. Press  key to start the lock and enter the Verify State.
2. Enter the Management Mode, please see step 2 in [2.3.1 Enroll a Fingerprint Ordinary User](#).
3. Press "3" on the lock to enter Delete User Mode.
4. Input the User's ID which you want to delete, and then press  key to confirm. Input the user ID again, and press  key to confirm. The buzzer will give a long beep, and the  key will flash green.
5. After deleting the user, you can restart the fingerprint lock and verify the deleted user's fingerprints or password again to check whether the user is deleted for sure.



Notice: The administrator can't delete itself and the last administrator.

2.5.2 Delete All Ordinary Users

1. Press  key to start the lock and enter the Verify State.
2. Enter the Management Mode, please see step 2 in [2.3.1 Enroll a Fingerprint Ordinary User](#).
3. Press "6" on the lock to enter Delete All Ordinary Users Mode.
4. Input "000" and press  key to confirm, then input "000" again and press

 key to confirm. The buzzer will give a long beep, the  key will flash green.



Notice: The operation can only delete ordinary users. If you want to delete administrators, you must reset the system, for detail, please see [2.7 Reset Lock to Factory Default Settings](#).

2.6 Enable / Disable a User

1. Press  key to start the lock and enter the Verify State.
2. Enter the Management Mode, please see step 2 in [2.3.1 Enroll a Fingerprint Ordinary User](#).
3. Press "4" on the lock to enter Enable/Disable User Mode.
4. Input the user ID which you want to enable or disable, press  key to confirm, input the user ID again and press  key to confirm. The buzzer will give a long beep and the  key will flash green.



Notice:

- (1) You can only enable or disable ordinary users.
- (2) The disabled user can't verify operations (unlock).

2.7 Reset Lock to Factory Default Settings

1. Press  key to start the lock and enter the Verify State.
2. Enter the Management Mode, please see step 2 in [2.3.1 Enroll a Fingerprint Ordinary User](#).
3. Press "7" on the lock to enter Reset Settings Mode.
4. Input "0000" and press  key to confirm, input "0000" again and press  key to confirm. The buzzer will give a long beep and the  key flashes green light, and then reset the lock's settings to factory default.



Note: After resetting the lock's settings, the MPC will reset to "98989" (The factory default MPC), and delete all users in the lock, including the administrator and ordinary users, automatically entering demo mode.

3 Conventions on Other Functions

3.1 Routine Operation Indicators

Successful user operation: The buzzer sounds once and the green LED indicator will light up for 3 seconds.

Failed user operation: The buzzer sounds short tone twice and the red LED indicator is solid on for 3 seconds.

Verify State: Green LED flashes.

Management Mode: Keypad will flash blue LED and green LED will turn off.

Warning Indication: The buzzer beeps five times intermittently.

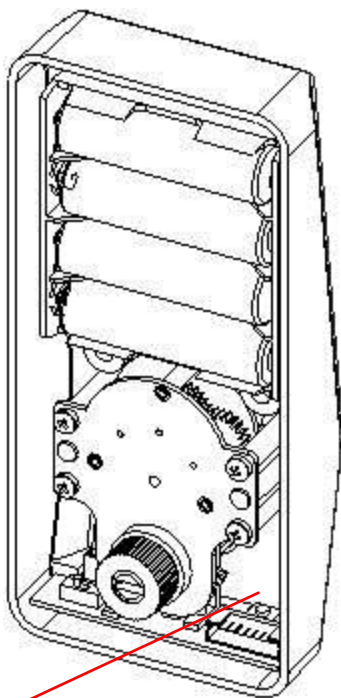


Note: You can only enter numbers, such as PIN's, user ID's or master pass code when the keypad is flashing blue.

3.2 Initialization Lock

In case you ever forget the master pass code or any other setting's information and you are not allowed to access or change the settings, you can use the Initialization key to reset the lock.

Use the screwdriver to take down the screws in the back of the lock cover, then press the Initialization Key to reset the lock (reset the lock to factory default settings). Shown next:



Initialization Key

3.3 Unlock the Non-lock Status Alarm

The non-lock status alarm occurs when the lock detects that the bolt isn't properly turned and latched, which can be fixed in the following two ways:

1. Press the  button and the machine will lock automatically. The alarm will sound continuously until the non-lock status is removed after the latch is properly turned for the bolt to be locked securely.
2. Lock it using the mechanical key or by turning the latch inside. The alarm will be switched off after the proper locking is done.

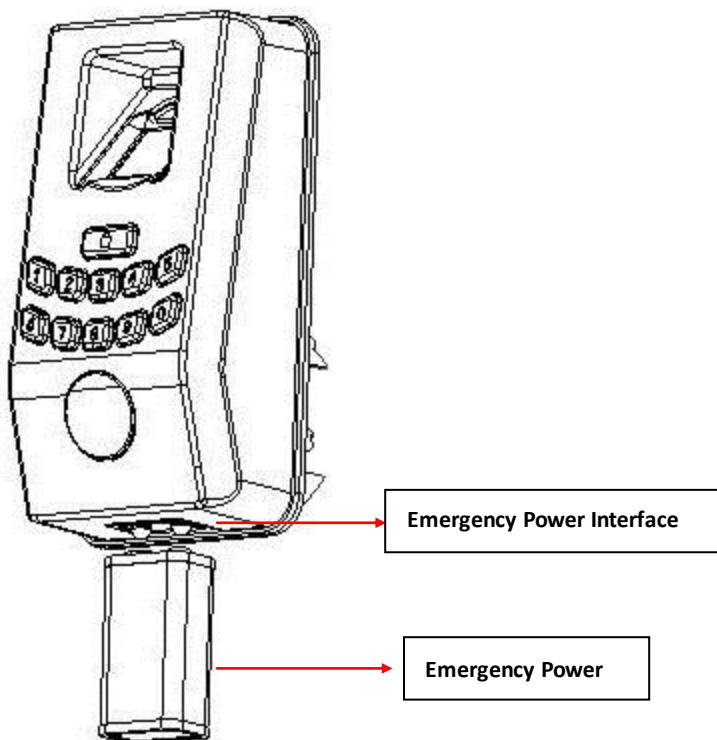
3.4 Automatic Program Exit and System Power-off

- The Fingerprint Lock powers off automatically upon successful matching and unlocking.
- The Fingerprint Lock powers off automatically when the supply voltage is too low.
- The Fingerprint Lock powers off automatically if there is no keystroke within 10 seconds on the initial interface.
- After successful verification, press key to start the lock, and then press this key to unlock and power off.

3.5 Use Description of External Power

The Fingerprint Lock supports temporary use of external DC power for fingerprint or password matching and unlocking, but when connected with an external battery, the fingerprint lock cannot provide such special functions as enrollment, deletion and setting, so as to prevent data loss as a result of power instability.

As shown in the figure below, connect a 6V battery to the two access points at the bottom of the fingerprint lock, regardless of polarity.

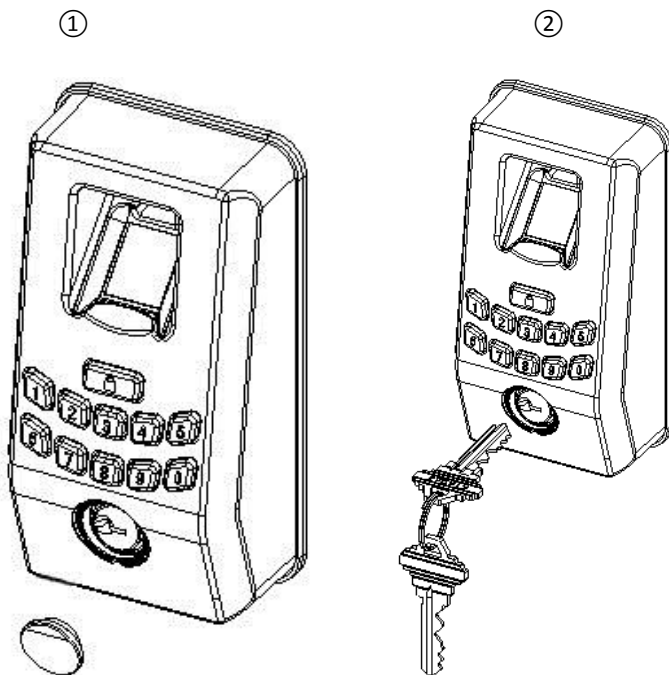


If you power off a Fingerprint Lock without dosing the lock during the use of external power, the lock cylinder will not automatically return to its original position. The Fingerprint Lock remains in **unlock** state. To solve this problem, you can replace the battery and then open the lock to have the lock cylinder in position.

3.6 Unlock With an Emergency Mechanical Key

You can open the door using an emergency mechanical key in case the electronic component does not operate.

- ① Use your fingernails or a hard chip to take down the lock cover.
- ② Insert the emergency key into the keyhole and rotate 90° to unlock.



Note: Please use the key provided with the device. After unlocking, please replace the lock cover.

3.7 Battery Low Voltage Protection

When the battery is low, there are alarm signals to warn users to change the battery as follows:

1. When the battery voltage is lower than 4.8V, the buzzer will make a short sharp sound five times when starting the machine. Users can unlock it normally but will not be able to enter the administrative mode.
2. When the battery voltage is lower than 4.5V, the buzzer will make a short sharp sound five times, and then the machine will be switched off automatically.



Note: When the low-voltage alarm occurs, please change the battery in time to avoid an impact on the fingerprint lock. Avoid losing data caused by instable power supply (It is suggested to change the battery immediately when the battery voltage is lower than 4.8V).

4. Appendix

4.1 The Parameter Table

HL100 basic function parameters are shown below:

Item	Description
Power	DC 6V
Capacity	100 users (100 fingerprints)
Collector	Optical Fingerprint Collector
Algorithm Version	10.0
LED	Three colors (red, green, blue) instructions

HL100 – Warranty Information

HL100 comes with a five year mechanical and finish warranty and one year electronics warranty to the original residential user of ZKbiolock™ against defects in material and workmanship as long as the original user occupies the residential premises upon which the product was originally installed. This warranty only applies to Original user of the product. This warranty is not transferable.

This warranty DOES NOT COVER:

- any cost including, but not limited to, such cost for removal and reinstallation of the product
- freight and shipping charges/expenses required to return product to ZKbiolock™
- direct sunlight, scratches; abrasions; deterioration due to the use of paints, cleaners, solvents or other chemicals;
- abuse; misuse; or product(s) used in commercial/common area application
- used for the purpose they are not designed or intended
- which have been improperly stored, installed, maintained or operated
- which has been subjected to alteration, misuse, abuse, negligence and accident
- which has been subjected to improper temperature, humidity or other environmental conditions

Support:

Contact the ZKbiolock HL100 distributor/dealer that you purchased the lock from.

Or

Go to:
www.zkbiolock.net