POLYMath™

◆ **Foreword**

Thank you for purchasing the product of our company!

The world's most advanced technology -----biometrics and microelectronics technique have been applied in this product.

It's the comprehensive fruit of electronic technique, optical technique, mechanical technique and surface processing technique.

Also it's one of the most advanced locks nowadays.

Before installing and using this product, please read the user's guide carefully.

Warranty:

- One year for electronic components.
- Three years for mechanical parts.
- Life time guarantee for stainless steel finishing.

    (May verify with different models)

Whole process service

Service hot-line:

0086-592-5310833

Fax: **0086-592-5310259**

E-mail: overseas@polymath.com.cn

POLYMath™

Contents *(Notice: The function may be different on different models)*

POLYMath

Product characteristics

★ Basic features

Convenient One-Touch System

Simply touch the scanner with your fingertip without any risk of it being stolen or copied like cards or keys can. Remembering any password is optional. It offers both security and convenience.

Security First Design:

Designed to comply with the global Fire and Safety regulations. The door can always be opened from the inside providing a quick exit in case of an emergency or fire.

Easy-to-Operate Key Pad:

User registration, deletion, and mode programming are done through the keypad. All operations can be completed in about 10 seconds and does not require any special skill or training.

Remarkable Durability:

The lock has a virtually unbreakable and scratch resistant sensor window. The optical prism is high-impact resistant and can be adapted for outside use under severe environmental conditions. It is highly anti-static and resistant against physical damages. It will resist normal man-made damages like scratches, hammering and vandalism.

Optional Key Entry (LP-802A):

As an additional feature a standard key lock can be mounted into the handle mechanism. This provides the option of using a key as an override for malfunctioning units.

Remote Branches:

Infrared remoter and other audio-video apparatuses could be added to the lock

system.

Memory Capacity:

Capacity up to 99 different fingerprint templates (Recommended: 30).

Safety "Dead Bolt":

You may bolt the door by turning the safety bolt knob inside. Anyone else cannot open it from outside.

Power Supply:

The lock is powered by 5 AA 1.5V alkaline batteries. The power consumption is extremely low and it can support 4000 operations. For a typical family these batteries will last 6-12 months. High quality long life alkaline batteries is recommended.

Stand-by Power supply:

Two stand-by external power supply sockets beneath the key pad. In case of low battery you can plug in a standard 9 volt battery into this socket and LP-802A will allow you to unlock the door using your fingerprint.

Malicious Operation-forbidden:

Input wrong fingerprint more than five times would activate the system dormancy for 5 minutes to protect against any intentional malicious operation of the lock.

Modern Appearance and Advanced Biomechanical Design:

Combines a modern appearance with a slightly futuristic biomechanical design.

★ Product application

■ Home/Condo/Apartment   ■ IT Closet/Computer Room

■ Perfect for Residential (Weatherproof)   ■ Master Suite

■ Banks   ■ Military Facilities   ■ Home offices

POLYMath™

★ Notice for using

In order to use fingerprint lock properly normally, please pay attention to the following points:

1. Use the alkaline battery of high capability.
2. Don't mix the use of new and old batteries.
3. Please change the battery at once when the lock sends out the signal of low voltage.

Product constructions & functions

1. Lock construction

(See the Dissection Diagram of the Fingerprint Lock) Sketch of the lock body & parts name.
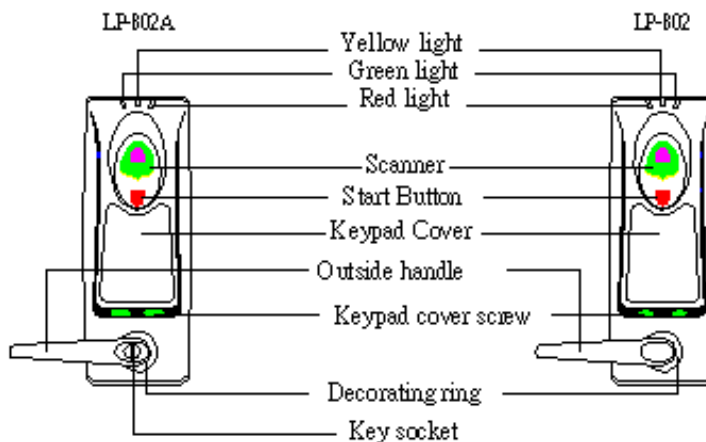

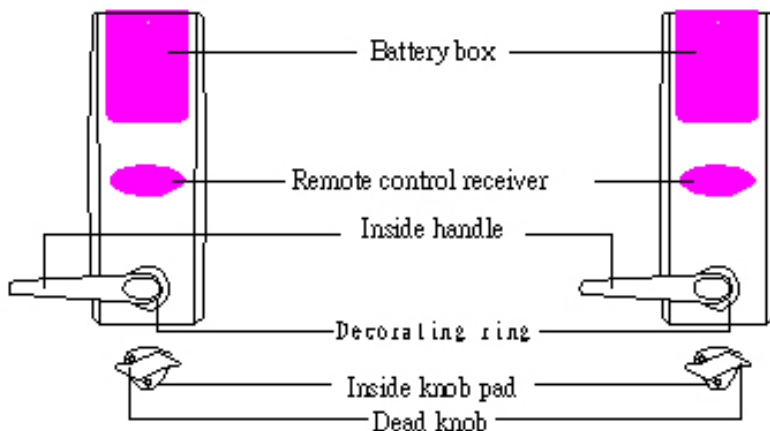*Figure 1   Sketch Map of the obverse Lock Body*

Figure2   Sketch Map of the Reverse Lock Body

★ **Lock body:**

It includes inside parts, outside parts, lock buckle board and lock buckle box.

★ **Inside Parts:**

Mainly includes inside power supply, remote control receiver, inside handle and inside knob.
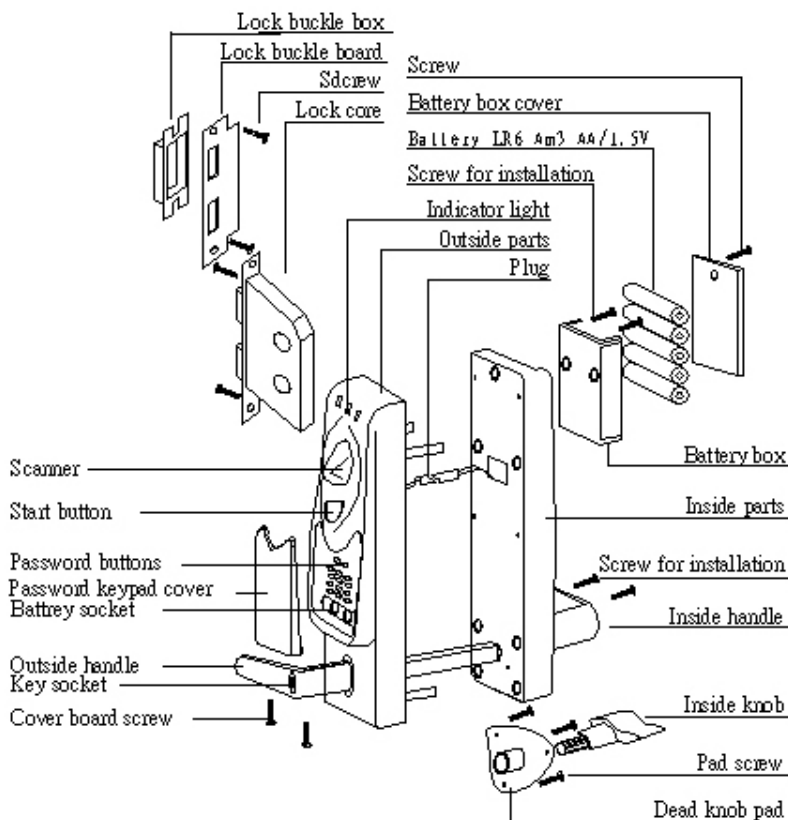
★ **Outside parts:**

Mainly includes fingerprint sensor, indicator light, function buttons, password keypad, outside power supply sockets, outside handle and key (Lp-802A).

★ **Five-tongues lock core:**

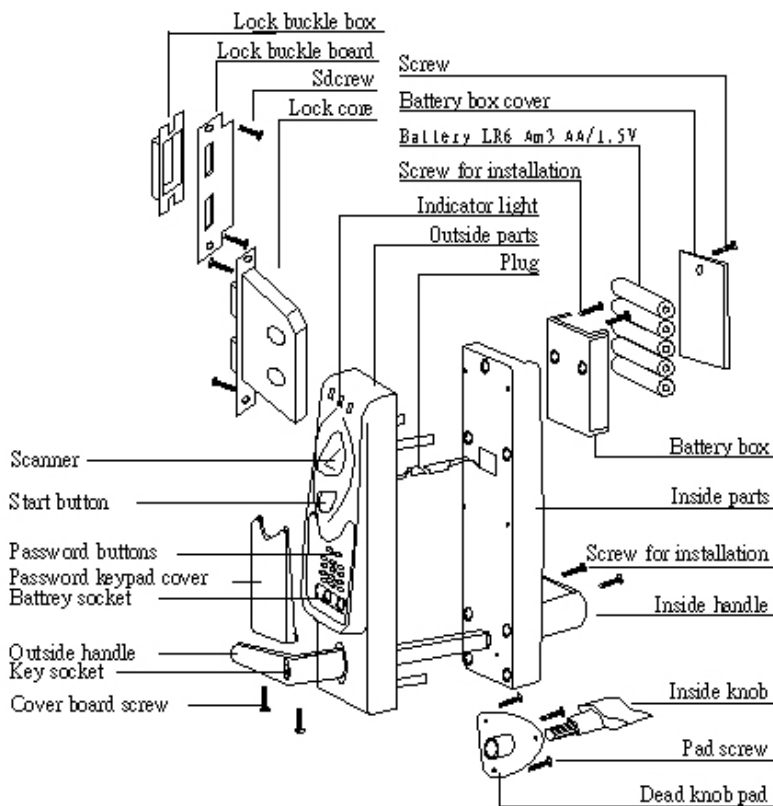Mainly includes titled tongue, square tongue, safety tongue, etc.

Dissection Diagram of the Fingerprint Lock

LP-802A

Lock buckle box
Lock buckle board
Sdcrew
Lock core

Screw
Battery box cover
Battery LR6 Am3 AA/1.5V
Screw for installation
Indicator light
Outside parts
Plug

Scanner
Start button
Password buttons
Password keypad cover
Battrey socket
Outside handle
Key socket
Cover board screw

Battery box
Inside parts
Screw for installation
Inside handle
Inside knob
Pad screw
Dead knob pad

![POLYMath logo]

Dissection Diagram of the Fingerprint Lock

LP-802

Lock buckle box
Lock buckle board
Sdcrew
Lock core
Screw
Battery box cover
Battery LR6 Am3 AA/1.5V
Screw for installation
Indicator light
Outside parts
Plug

Scanner
Start button

Password buttons
Password keypad cover
Battrey socket

Outside handle
Key socket
Cover board screw

Battery box
Inside parts
Screw for installation
Inside handle
Inside knob
Pad screw
Dead knob pad

2. Function of each device

Inside power supply: Supply power for the fingerprint and password system.

Fingerprint identifier: Scanning and identifying fingerprints.

Indicator Light: Display operating situation.

● **Red light:** Shows unsuccessful operation.

● **Yellow light:** Shows working condition of the lock.

● **Green light:** Shows successful comparison or registering.

Password keypad: Input password to open the door when fingerprint system breaks down.

Secure key: Back up system (LP-802A)

Outside power supply socket: Supply power for system when inside power fails.

Dead knob: dead-bolt.

3. Main functions of the product

1) Number 01,02,03 are master's fingerprint codes, which can not only open the lock but also register or delete other user's fingerprints. Normal user's fingerprint can only be used to open the door.

2). Indoors reverse locking

The inside knob can make reverse locking. Turn the inside knob, then the square tongue would springs out and lock in reverse, now the fingerprint lock can not be opened by fingerprint or password.

3). Weak power alarming

When system power is lower than 4.55V, the system would beep "Di" to remind you after the lock opened. At the same time, the flashing of the red

light tells that the battery should be replaced.

4). Double system (LP-802)

The fingerprint lock has two unlocking systems. One is the main system—fingerprint system, the other is password system, which is available in emergency. When fingerprint system breaks down, please open the lock with the password system.

5). Three functions in one. (LP-802A)

The fingerprint lock has three systems. Fingerprint system is the main system, the password and the secure key are the emergency systems. When fingerprint system breaks down, please open the lock with the password system or the emergency key.

6). Guard against tilted insertion

The lock body adopted the style of core-inserting with five lock-tongue. Lock the door, then the safety tongue can make sure that the tilted tongue would not be opened by tilted inserting things, like credit card or a piece of plastic.

7). Malicious-operation function

The fingerprint system and password system of this lock have trying-forbidden function to prevent malicious usage. Input wrong fingerprint for five times, the fingerprint system would enter 5 minutes dormancy situation. At this time, the password system are still functional.

Ⅲ Product's installation

Installation model diagram

1. Door lock installation steps

Step One:

According to the installation template, line out relative holes' contour line and central line on door, then drill the holes.

Step Two:

Check if the holes' location of the lock body consistent with the installing holes' location. If it's all right, press the parts into the lock body, and fix it with screws. After that, please check the spring situation of the lock tongue.

Step Three:

Pull the wires and check the location of every installing hole, then fix the outside parts on the door.

Step Four:

Join the wires connecting plugs of inside and outside handle parts. The connection must be precisely and reliable. Then connect the square axis with the knob axis. Make sure that the inside and outside handle parts are reliably connected with lock body. After those steps, screw down the fixing bolts of the inside and outside handle parts.

Step Five:

The battery should be placed as the polarity marks in the battery box cover shows. After that, screw tightly the fixing bolts of the battery box cover.

Step Six:

Check the proper installation to prepare for the system settings. Press the start button, when green light blinks, turn the handle to open the lock.

2. Notices in installation

★ Protect the wires prevent to circuitry damage.

★ Ensure the transferring tie-in of the leads connected correspondingly.

★ Place the square axis to right direction as it marked.

★ Place batteries correctly as the polarity marks shows.

★ Drilled holes for installation and the door board should be at the vertical position. Holes' location should be correct.

★ The hole of lock tongue should be ensured that the tilted-tongue could spring and replace correctly and swiftly.

Ⅳ System setting

One. Inputting fingerprint

1. Master fingerprint registration

1). Start the system

Press the button " Add", then the green light shining for a little while and then it sparkles for three times, now a sound "Di" beeps, this shows the system registering operation has been started.

2). Registering fingerprints

The scanner light flashing while the yellow light blinks, at this time press the finger be registered on the scanner. When the light is off, remove your finger.

3). Confirm the fingerprint

the yellow light blinks as two sounds 'Di-Di" beeps. Then after the scanner light blinked, press that finger again on the scanner. If the sound "Di" beeps

and the green light flashes for three times, it shows the fingerprint registration are successful. The system would recognize the first registered fingerprint as the "No.1" master fingerprint.

2. Fingerprint registration

1). Starting system

Press the button "Add", then the green light shine for a while and the sound "Di" beeps, it shows the system registration operation has been started.

2). Validating fingerprint

As the yellow light and the scanner light shining, press the manager's fingerprint on the scanner to check if it is right. After the scanner light is off, remove your finger. If two sounds "Di-Di" beeps, it shows the fingerprint validation is successful.

3). Input the code

Continuously input twice the fingerprint code you want to registered. For example, if the code is "02", then input "0202". If a sound "Di" beeps, it shows the code input successfully.

Notice:

★ *The code could be from "01" to "99".*

★ *One fingerprint is corresponding only to one code.*

★ *Different fingerprints have different codes.*

4). Register fingerprint

The scanner light flashing while the yellow light blinks, at this time press another finger or other user's finger be registered on the scanner. When the light is off, remove your finger.

5). Confirmation fingerprint

The yellow light blinks as two sounds "Di-Di" beeps. Then after the scanner light blinked, press that finger again on the scanner. If the sound "Di" beeps and the green light flashes for three times, it shows the fingerprint registration is successful.

Notices:

During the operation process, if the red light shining and four sounds "D-Di-Di-DI" beeps, it shows the operation is unsuccessful. Find out the reason and repeat the operation mentioned above. If still not successful, change the finger and try again.

Two. Deleting fingerprint

1. Start the system

Press the button "Del" , to start the system, the red light shining and the scanner light flash once, then the sound "Di" beeps, it shows that the deletion operation has been started.

2. Master fingerprint verification.

The yellow light shining, then the collection light blinks. Now press the registered master's fingerprint. Remove the finger when the scanner light is off. If two sounds "Di-Di" beeps, it shows that the verification is successful.

3. Delete the fingerprint

Continuously input twice the fingerprint code you want to delete. For example, if the code is "08", just input "0808". If two sounds "Di-Di" beeps and the green light flashed for three times, it shows that the fingerprint deletion operation is successful. If four sounds "Di-Di-Di" beeps, it shows that the operation failed. Then find out the reason and repeat the operation steps

mentioned above.

Three. Password system settings

High lighten the security, 1-10 digits can be input as a password.

1.   Password setting up

The initial password of the door lock is "0". Input the "0", then press the button "#" can open the lock. When setting up the new password, first press the button "0", then press the button "＊",then input the new password and press the button "＊" again.   After the green light flashes for three times, input the new password once more and then press the button "＊". If the green light flashes for three times, it shows that the password setting operation is successful. If the red light flashes for three times, it shows that the operation failed and need to be done again. For example, if the password id "1234" the setting operation should be "0" "＊" 1234 "＊" 1234 "＊". Now input the password 1234, then press the button '#' can open the lock.

2.   Change the password

Input the previous password before change it, then press the button "＊". After the green light flashed for three times, input the new password. Now press the button "＊" again. Input the new password again to confirm it after the green light flashed for three times, then press the button "＊". For example, if the original password is "1234" and the new password is "5678", then the setting operation should be "1234 ＊ 5678 ＊ 5678 ＊".   If the green light flashes for three times, it shows that the change is successful. If the red light flashes for three times, the operation failed.

Four. Malicious-operation-forbidden function.

1. Startup dormancy:

Press the button "＊",then press the button "5". After the green light flashed for three times, input the password, then press the button "＊" again. After the green light flashed for three times, press the button "1'. If the green light flashed for three times again, it shows that the operation is successful. For example, if the password is "789". The operation should be "＊5789＊1".

2. Close dormancy:

Press the button "＊",then press the button "5". After the green light flashed for three times, input the password, then press the button "＊" again. After the green light flashed for three times, press the button "0". If the green light flashed for three times again, it shows that the operation is successful. For Example, if the password is "789". The operation should be "＊5789＊0".

Five. Reset

Under unworking situation of the lock, open the battery box, press the mini-sized "reset" button which beneath the battery box but above the central location of the circuit board. At the same tine, press the "Start" button to start the system. When yellow light, red light and green light shining simultaneously, loosen the two buttons. The sound "Di" shows that system begins cleaning all of the fingerprints and passwords memorized in the lock. A few seconds later, the six sounds "Di-Di-DI-Di-Di-Di" shows that the operation is successful. On the contrary, a long sound and the flashing red light shows that the operation failed. Then please repeat the operation steps mentioned above.

Notice:

Please use this function carefully, it clears all the old memory, including the master's fingerprint.

Six. Notices for system settings

At the very beginning, no fingerprint requires for access. Start the system, then the lock opened. For the password system, the password is "0" under initial situation. So the fingerprint system and password system should be set up timely after the lock installed to guard against any insecurity factors.

★ Accurate replacement of each button should be ensured after the system was set up.

★ Number 01, 02, 03fingerprints registered by the system are the masters' fingerprints, others are the common users. Only the managers' fingerprints have the rights of registering or deleting the fingerprints of normal users. Normal users' fingerprints can only be used to open the lock. For ensuring the security of the system, the managers' fingerprints should be registered to those in charge of the lock.

Ⅴ **System operation**

★ The setting password should be recorded so that it can be used to in case of any emergency.

★ The registered fingerprints and the set passwords should be tested to confirm the correctness of settings.

★ Take out the inside batteries and connect outside batteries, then open the lock with password to confirm the proper operation of the outside back up power supply.

POLYMath™

1. Open the lock with fingerprint system

1). Press the button "Start", to activate the whole system.

2). The sound "Di" beeps, then the yellow light shining and the scanner light flashing. Now press the fingerprint on the scanner.

3). If the verification is successful, the green light turns on ,then you can turn the outside handle to open the lock.

4). If the verification failed, the yellow light is off, then four sounds "Di-Di-Di-Di" beeps and the red light flashing. At this time, you should check if the fingerprint has been registered or your pressing method is correct, then repeat the operation.

2. Open the lock with password system

Input the set password, then press button "#" to open the lock. For example, if the password is "123456", input "123456", then press the button "#" and turn the outside handle to open the lock.

3. Open the lock with secure key (LP-802A)

Insert the key vertically in the key hole, turning the key for 90°, meanwhile turn the key in the direction of the handle to open the lock. The key must be turned back to the initial direction when take it out.

4. Open the lock indoors

Turn the inside knob, then turn the inside handle to open the lock.

5. Dead-bolt function

Turn the inside knob indoors, the big square tongue springs out, then reverse locking complete.

6. Emergency handling

1). Open the lock with the password: Open the password keypad cover while fingerprint system disabled. If inside power supply is normal, input the password to open the lock. If inside power supply breakdown, connect 9 volt outside battery with the outside power supply socket, then input the password to open the lock.

2). Open the lock with the secure key: Use the secure key to open the lock. The key must be turned back to the initial direction when take it out. (LP-802A)

Ⅵ **System maintenance and troubleshooting**

1. **System maintenance**

Daily maintenance can extend its durability, lower breakdown-rate and improve reliability of the lock.

1). Replace the battery right away when the system shows weak power.

2). The password system is used to meet an emergency, protected it with keypad cover.

3). Use high energy batteries for steady power supplying for a longer time.

4). Pay attention to replace correctly.

5). Aperiodically register and change the users' fingerprints and passwords to meet the security demand of the lock.

6). Don't use gasoline or acetone or other volatile gases to contact with the locks. When cleaning the lock, please wipe the lock with flannelette, which bedewed with litmusless soap-water. At the same time, for protecting the lock, make sure install the lock in a dry environment. (Please see the humility data on page 20).

POLYMath™

2. Troubleshooting

Misuse and mis-operation of the lock may cause some break downs. Solve problem as the table suggests.

Serial Number	Breakdowns	Reason for breakdowns	Handling ways
1	The door lock can't be locked after opening.	• Low power • The electric-mechanical clutch damaged • Circuit parts damaged	• Replace batteries • Mend the clutch • Mend or replace the circuit parts
2	When starting system, the red light shining with the sound "Di" beeping.	• Low power • Installation problem • Circuit parts damaged	• Replace batteries • Check installation • Mend the electronic parts
3	The lock has been opened but the system repeat the operations.	The start button keeps working	Press the start button to reposit it.
4	The system can't be started after pressing the start button.	• Lowe power • Circuit parts damaged	• Replace the batteries • Open the door lock with password system and mend the circuit parts.
5	Sometimes the lock can be opened with fingerprints but sometimes not.	The fingerprint is too blur to be identified and compared.	Input another fingerprint.
6	Fingerprint deletion failed.	• Lowe power • Input the manager's fingerprint falsely. • The reset button is not connected well	• Replace the batteries • Repeat the operation • Mend the circuit parts

7	After the door lock installed, the tilted tongue pop-up but the height is nadequate.	• The width of the installing hole is not enough • Turning of the handle blocked.	Finish off the installing hole fix mechanical parts of the lock-core.
8	Registering fingerprint failed	• Lowe power • The setting buttons is not well connected • Error with the manager's fingerprint or fingerprint pressing method.	• Replace the batteries • Check the circuit parts • Confirm the manager's fingerprint and press it correctly • Reset whole system to try again.
9	The fingerprint can't be identified and compared after the system	• Lowe power • Batteries damaged	Replace the batteries
10	After the batteries replaced, the identified and compared after the system started.	• Breakdown with the electric-mechanical clutch. • Battery voltage over-high	Replace the batteries
11	When opening the lock, the handle and the clutch can't mesh well.	• The clutch-trough of the handle damaged low power • The clutch can't get into position	• Replace the handle • Replace the batteries

Notice: *If the problem can't be solved, please contact with franchiser or customer service hot line of Polymath..*

Ⅶ Notice for order

Please confirm the following items when placing the order:

◆ Door opening and lock handle orientations
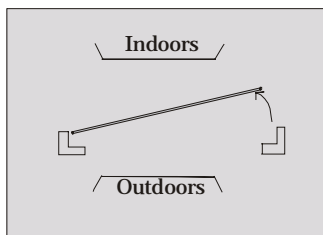
★*Left-handle Push*
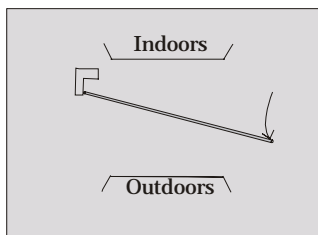
★*Left-handle Pull*
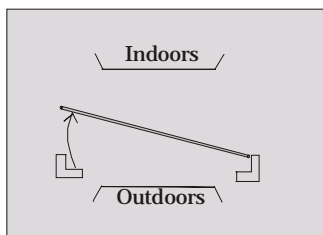
★*Right-handle Push*

★*Right-handle Pull*

POLYMath™
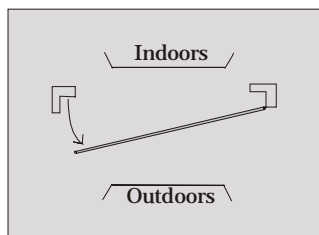
Appendix: Right ways of pressing finger

◆ Proper ways
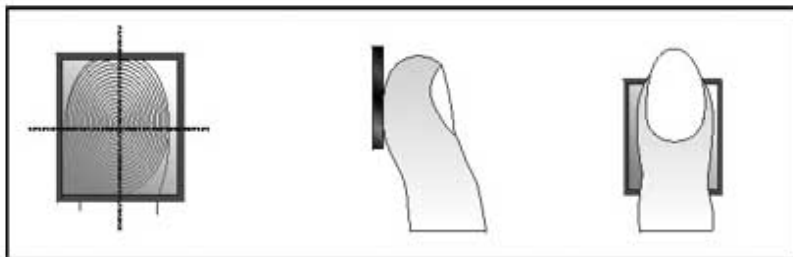
◆ Improper ways
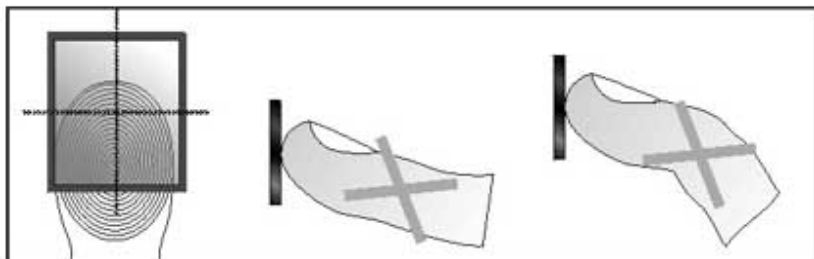
◆ Press the finger on the central part of the scanner.

POLYMath™

Ⅷ Technical reference data

ITEM	CONTENTS
Size	Inside: 226(L)*80(W)*25(H) mm Outside: 226(L)*80(W)*23(38)(H)mm
Registration Capacity	Standard capacity 30 fingerprints
False Refection Rate	0.01%
False Acceptance Rate	0.0001%
Processing Time	1-2 seconds
Lock Controlling Ways	Clutch
Dynamic Power-Consumption	70mA-220mA
Static Power-Consumption	$< 30\mu A$
ESD Anti-pressure Ability	$> 15000V$
Battery Life	4000-5000 times
Power Required	5 pcs "AA" alkaline batteries
Materials	Stainless steel
Working Temperature	-20 — 50℃
Working Moisture	20% — 80%

Fingerprints registration records

Name	Fingerprint Code	Fingerprint				
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger

POLYMath™

Fingerprints registration records

Name	Fingerprint Code	Fingerprint				
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	①	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
	②	Left: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger
		Right: ☐ Thumb	☐ Forefinger	☐ middle finger	☐ Ring finger	☐ little finger