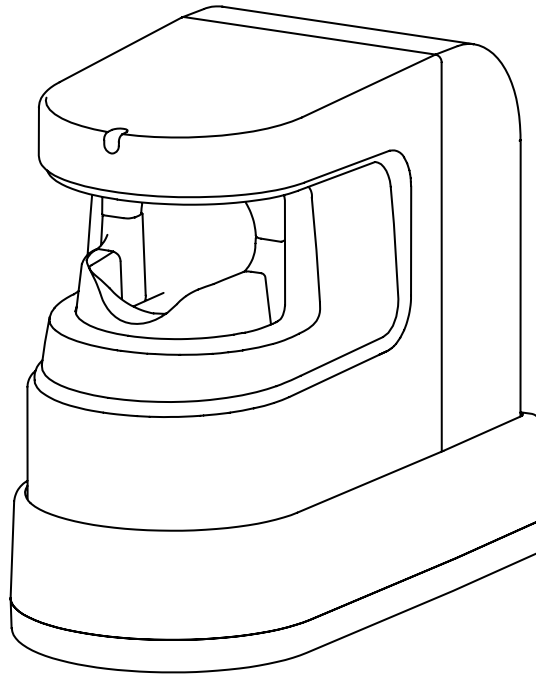


Operation Manual

SecuaVeinAttestor[®] Finger Vein Enrollment Device (FVN600E)



Hitachi Information & Control Solutions, Ltd.

Please read this [Operation Manual] carefully before operating and do the operation correctly.

Please keep this [Operation Manual] with caution.

— NOTICE —

- Please be sure to read this manual carefully and understand the instruction and notice before using this Product.
- Please keep this Manual near at hand that can be used soon when you need.
- Please feel free to contact the distributor, if there are any unclear points or questions for this manual.
- We are not responsible for any accidents, damages that are caused by the mis-handling of you.
- Please do not operate/ handle of no description in this manual. And also please do not dismount/ re-create by those parts that not provided by us and the operation should follow this manual. The action mentioned above might cause the device faulty and fatal accident. We are not responsible for any accidents, damages that are caused by the reason above.
- Please turn off the power and contact the distributor if noticed the failure or abnormal (stench or heat from device).
- Please do not use this device in the environment which under extremely high or low temperature, has wide temperature swings, high humidity level, noisy, and place might be bath by water and chemicals.
- The finger insert position might reduce the authentication rate. Please have a fully practice before enrolling a finger.
- The part or this entire manual is not allowed to reprint or copy without our permission.
- Due to the upgrading of the device, the description of this manual might be changed without any announcement.
- 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.
- Change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Hitachi Information & Control Solutions, Ltd.

PRECAUTIONS

Please be sure to read this manual carefully and understand the instruction and notice before using this Product.

In this manual, precautions are classified in [High-Danger], [Danger], [Notice].

Definition



High-danger

: Extremely danger occurred and severe injury or death might happen by mis-handling.




Danger

: Danger occurred and severe injury or death might happen by mis-handling.

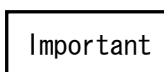


Notice

: Extremely danger occurred and moderate or light injury might happen by mis-handling. And device faulty might happen also.

But, the item that described as  **Notice** also might bring important consequences depend to the situation. All of the instructions are important, please make sure to follow them.

* The severe injury mentioned above includes injury such as blindness, burn injury (both high and low temperature), shock, broken bone, intoxication and also those that need to be hospitalized or has the ambulant treatment for long period. And also, injuries such as those do not need to have the ambulant treatment, burn injury, shock, the moderate injury and light injury, and expanded damage such as physical damage, property damage, device damage are included in moderate and light injury.




Important

: The descriptions to prevent the device damage and to operate normally are included in Important. Please follow the all the descriptions.

All precautions are important to ensure the security of this finger vein access system.


PRECAUTIONS (Continue)

 Danger	Page
<ul style="list-style-type: none"> ● Please do not insert or remove USB cable and AC adapter by wet hand. <ul style="list-style-type: none"> ● It might be the reason of getting shock. 	3
<ul style="list-style-type: none"> ● Use only power supplies in the instruction, There is fear of a fire when it is not possible to use it by any chance. 	3
<div style="border: 3px double black; padding: 10px; text-align: center;"> <p>認可された有限電源をお使いください。</p> <p>Use only power supplies listed in the instructions.</p> </div>	
<p>※Please note the label mentioned above.</p>	

PRECAUTIONS (Continue)

The following precautions are related to the finger vein access system. The moderate or light injury, physical damage might occur if did not follow them.

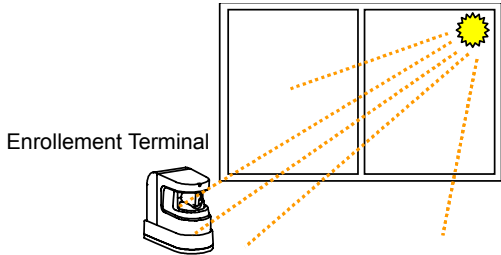
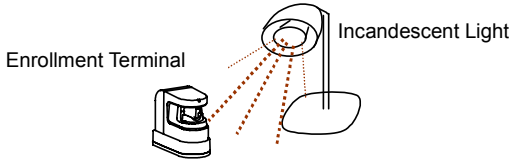
And, all the items are important; the level of importance is not related to the order.

 Notice	Page
<ul style="list-style-type: none"> ● Please note that the following items might be the reasons that unable to use this Product. <ul style="list-style-type: none"> (1) Finger with paint, chemicals, mud (2) Finger with artificial/ decorated nail (3) Deformed finger by injury (4) Gloved or bandaged finger (5) Person who has low blood pressure. (Who need medical treatment) (6) Finger in extremely unhealthy or abnormal condition. Etc. ● Please do not dismount/ re-create this Product. It might be the reason of device faulty, heat and fire. ● Please do not insert other things than finger into this Product. The device might get damage if pushed the scanning switch strongly by sharp and hard things. ● Please make sure to plug in the USB cable and AC adapter into connector and outlet correctly. It might be the reason of device faulty, heat and fire. ● Please do not use at the unfirm place. It might be the reason of injury and damage when fell. ● Please hold the plug of the USB cable and AC adapter when insert and remove them. It might be the reason of shock and fire if pulled the cable directly. And also cable disconnection might be the reason of mis-operation. ● Please be careful of the location of USB cable and AC adapter. It might be the reason of injury and device damage. ● Please do not use the AC adapter and USB cable that are not attached with this Product. The use of attachment that excluded with this Product might be the reason of device faulty, heat and fire. 	<div>vi</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>—</div> <div>3</div>

PRECAUTIONS (Continue)

The following precautions are related to the finger vein access system. They are required items to prevent device faulty and operate normally.

And, all the items are important; the level of importance is not related to the order.

Important	Page
<ul style="list-style-type: none"> The mis-authentication might occur in this finger vein authentication. Finger vein authentication belongs to biometric authentication, and the mis-authentication might occur. Mis-authentication includes, [FRR] that means reject the access of user and [FAR] that means accept the unenrolled person as a user. Please note that this device might be disable if used in the environment shown below <ul style="list-style-type: none"> • Disable to use at the place direct under sunlight.  <ul style="list-style-type: none"> • Disable to use the directly under incandescent light.  • Disable to use in the environment not included at Environment Spec. 	<p>—</p> <p>—</p>
<ul style="list-style-type: none"> Please clean the finger guide of enrollment device periodically. <ul style="list-style-type: none"> The authentication might be disabling if the finger guide is full of dust or mud. The finger guide is fragile, please handle it carefully. Please remove the USB cable and AC adapter during doing the cleaning. 	6
<ul style="list-style-type: none"> Please clean the scanning switch area of enrollment device periodically. <ul style="list-style-type: none"> The authentication might be disabling if the finger guide is full of dist or mud. The finger guide is fragile, please handle it carefully. Please remove the USB cable and AC adapter during doing the cleaning. Use only power supplies listed in the instructions 	7

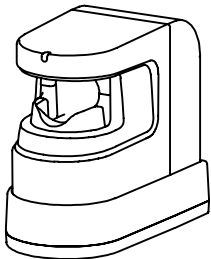
Introduction

This manual describes the handling method of the finger vein enrollment device. It is targeted to those who operate this device by using Server Software.

Please read carefully the description in this manual.

To use this device, it is needed to connect with computer. This enrollment device is needed to use Server Software installed in PC and to be connected to the PC.

Below is the model that described in this manual.

No	Model	Name	Remarks
1	FVN600E	Enrollment Device 	

**Notice**

- Please note that the following items might be the reasons that unable to use this Product.
 - (1) Finger with paint, chemicals, mud
 - (2) Finger with artificial/ decorated nail
 - (3) Deformed finger by injury
 - (4) Gloved or bandaged finger
 - (5) Person who has low blood pressure. (Who need medical treatment)
 - (6) Finger in extremely unhealthy or abnormal condition. Etc.

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1. Product Outline

1.1 Purpose of Enrollment Device

Enrollment device is the device to extract finger vein data to use in finger vein authentication terminal.

The system configuration is shown in Fig 1.

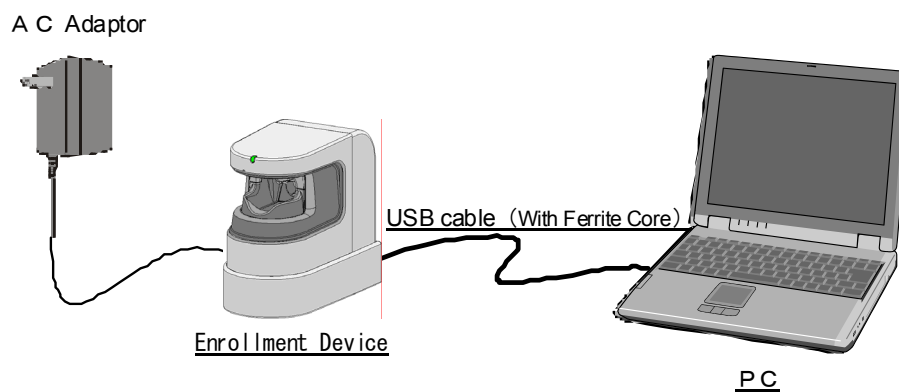


Fig 1 System Configuration

1.2 Confirmation of Package

This Product is included the following parts. Please inform the distributor if any of them is not included.

▪ Enrollment Device(FVN600E)	1
▪ 5V output AC Adaptor(With Ferrite Core)	1
▪ USB Cable(With Ferrite Core)	1
▪ Operation Manual (this Manual)	1

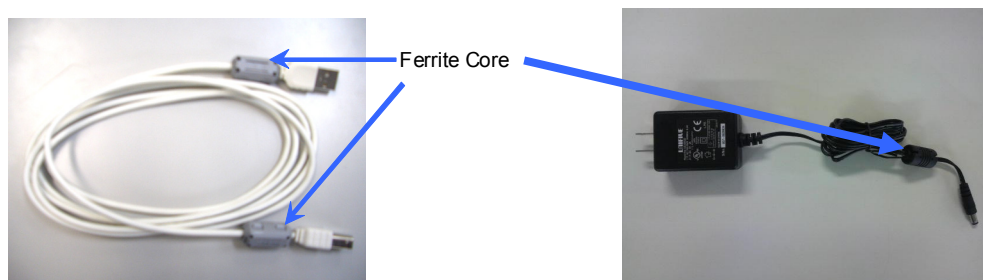


Fig 2 Ferrite Core



Notice

The attached AC Adaptor and USB Cable with ferrite core must be used for RF interference suppression.

1.3 Prerequisite

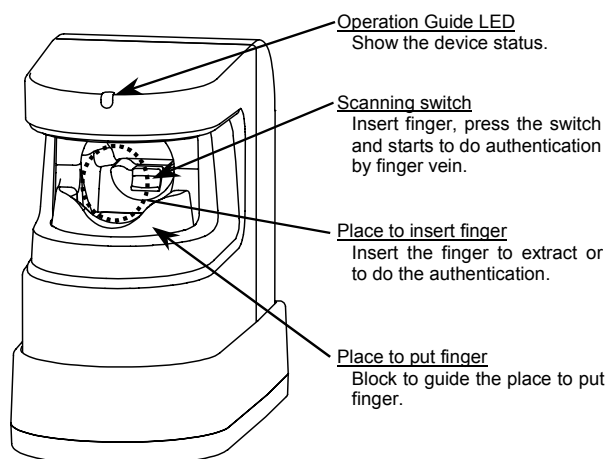
The computer that satisfied following spec is required to use this device.

Table 1 Required System

Item	Spec
CPU	Pentium□ more than 1GHz
Memory	More than 256Mbyte
HDD	Free area more than 10Mbyte
OS	Windows XP (English version/ Simplified Chinese)
USB	USB1.1 or USB2.0
Other	Display with resolution higher than VGA, CD-ROM

The required memory might be different depends to the computer environment.

1.4 Name of Each Part



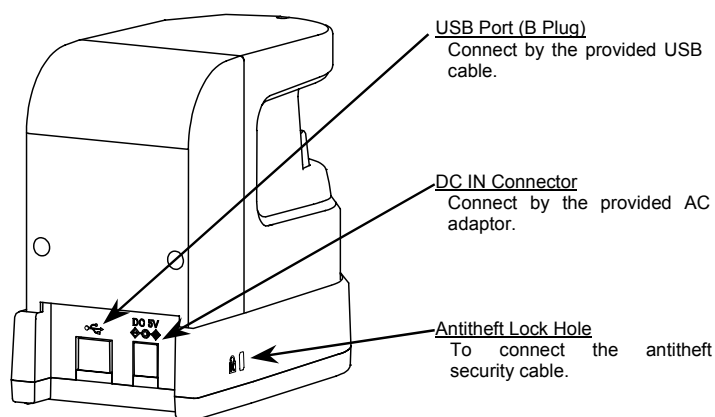
Enrollment Device(Front)

• Operation Guide LED

Operation Guide LED	Device Status
Red -> Green -> Yellow -> Light off -> Beep	Enrollment terminal starts to operate while on the power (when connected with AC adapter). The start-up of device is completed when LED turn off, and beeps.

• Internal Buzzer

Buzzer	Device Status
Beep (1 time)	FV scanning completed
Beep (3 times)	FV scanning failed. Please press the scanning switch until it beeps.
High beep (1 time)	FV scanning failed. The light might be the reason.



Enrollment Device(Back, Side)

Fig 3 Part names

1.5 Connection

The connection by provided USB cable and AC adapter with computer and outlet is shown in Fig 4.

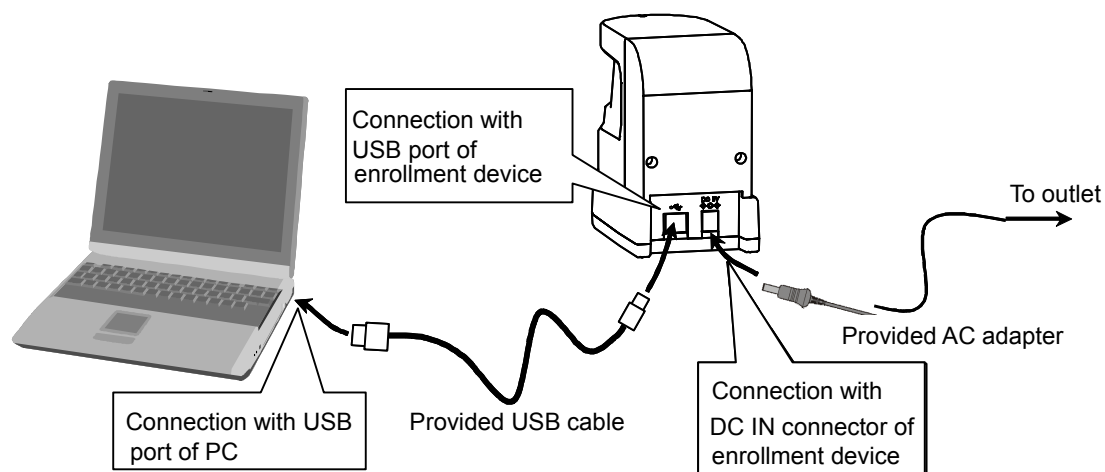
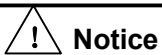


Fig 4 Connection Diagram



Danger

- Please do not insert or remove USB cable and AC adapter by wet hand.
- It might be the reason of getting shock.
- Use only power supplies in the instruction,
There is fear of a fire when it is not possible to use it by any chance.



Notice

- Please do not use the AC adapter and USB cable that are not attached with this Product. The use of attachment that excluded with this Product might be the reason of device faulty, heat and fire.

2. The right way to insert finger

Precautions when insert finger while doing the enrollment and authentication are described in this chapter.

Please follow the procedure below.

2.1 Procedure to insert finger

Fig 6 shows the right way to insert finger.

Next, the procedure to insert finger into enrollment device is described.

- (1) Relax your hand, and insert the finger follow the finger guide that matched with the center axis.
- (2) Insert your finger horizontally until reach the scanning switch.
- (3) Press the scanning switch lightly.
- (4) Do not move your finger until the buzzer [Beep].
- (5) Please remove your finger from the device.

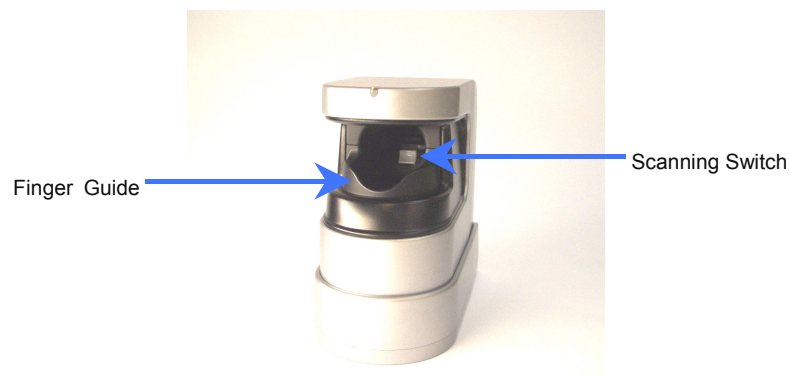


Fig 5 Position of scanning switch

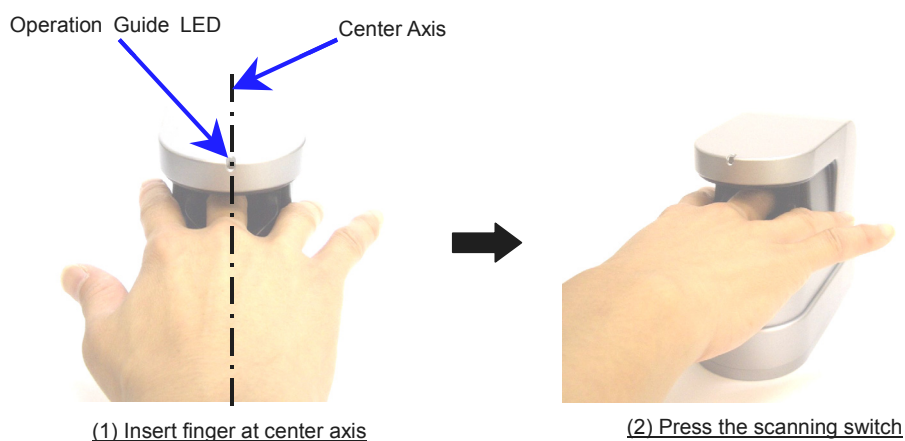


Fig 6 The right way to insert finger

2.2 Precautions when insert finger

Below describes the precautions when insert finger.

Please be sure to keep the same posture when you doing both finger vein capture and authentication.

- (1) Finger is not matched with the center axis (Fig 7)
- (2) Finger is rotated. (Fig 8)
- (3) The injury at finger, mud by pen, etc. might cause the enrollment/ authentication unstable.
- (4) Please do not insert the wet finger or with glove.
- (5) Please keep your finger straight when you inserting the finger.
- (6) It is unable to do the authentication at outdoors or under the location with strong light.

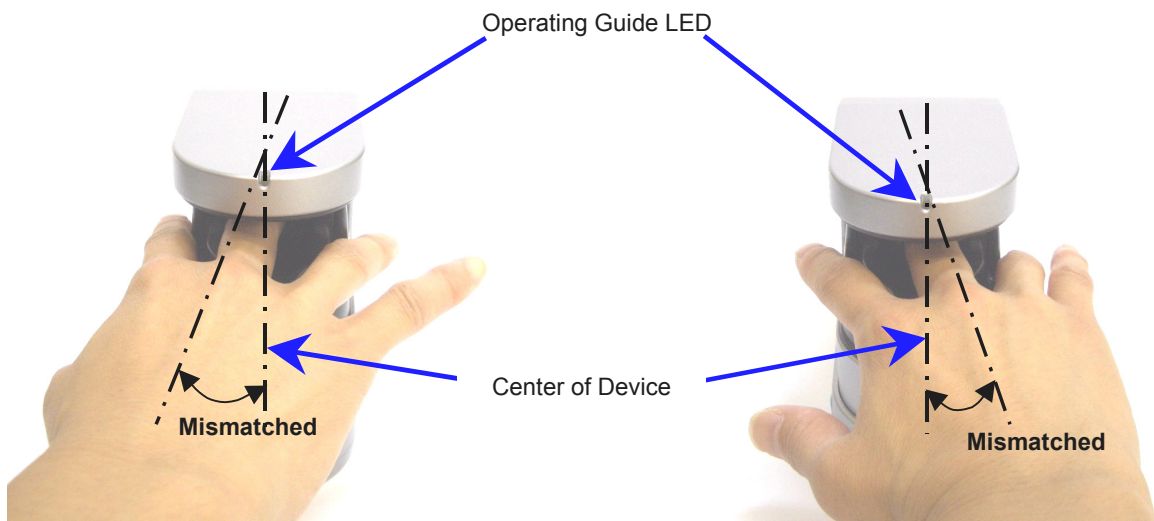


Fig 7 Wrong example (Not matched with the center axis)

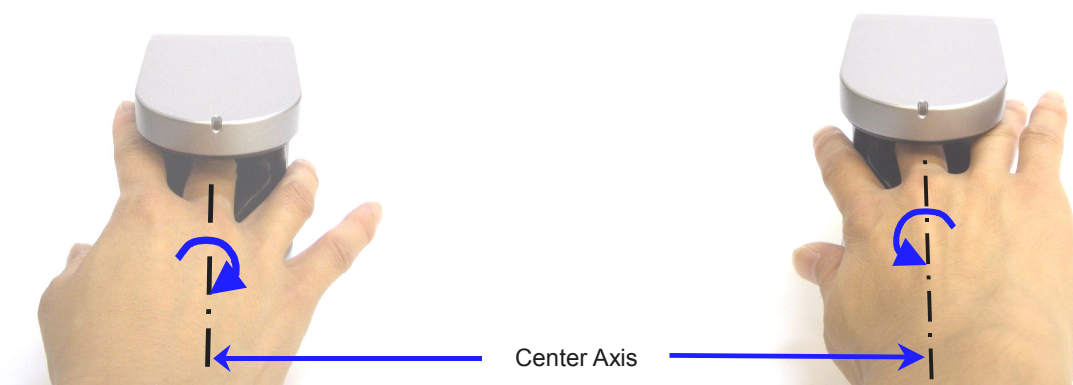


Fig 8 Wrong example (Rotation of finger)

3. Maintenance

3.1 Cleaning Camera Lens

The camera lens is located at the bottom of the finger guide. The authentication cannot operate correctly if camera lens is dirty. Please clean it by the soft cloth when it is dirty. But do not use any chemicals such as cleaner.

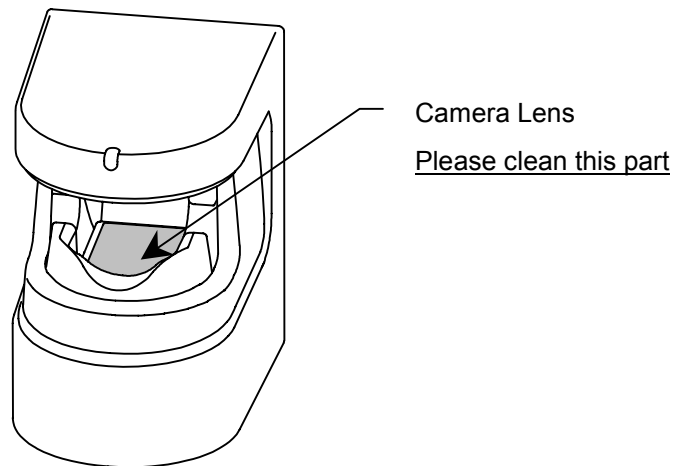


Fig 9 Position of Camera Lens

If it is difficult to clean, please remove the finger guide as shown in Fig 10 before doing the cleaning.

- 1) Remove the finger guide by pull up it.
- 2) Pull out the finger guide.

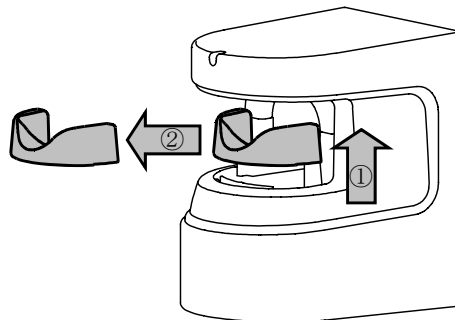


Fig 10 To remove the finger guide

Important

- Please clean the finger guide of enrollment device periodically.
 - The authentication might be disabling if the finger guide is full of dust or mud.
 - The finger guide is fragile, please handle it carefully.
 - Please remove the USB cable and AC adapter during doing the cleaning.

3.2 Cleaning of LED Lens

The IR LED lens is located at the top of the finger guide. The authentication cannot operate correctly if camera lens is dirty. Please clean it by the soft cloth when it is dirty. But do not use any chemicals such as cleaner.

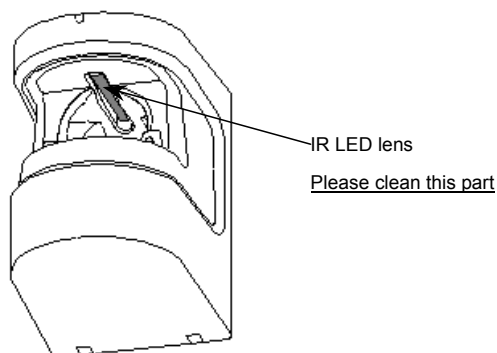


Fig 11 LED lens cleaning

If it is difficult to clean, please refer to [Fig 10 To remove the finger guide] before doing cleaning.

3.3 Cleaning of Scanning Switch

The scanning switch might be unable to press if the area is dirty. Please clean it by the soft cloth, soft brush, or air spray when it is dirty. But do not use any chemicals such as cleaner.

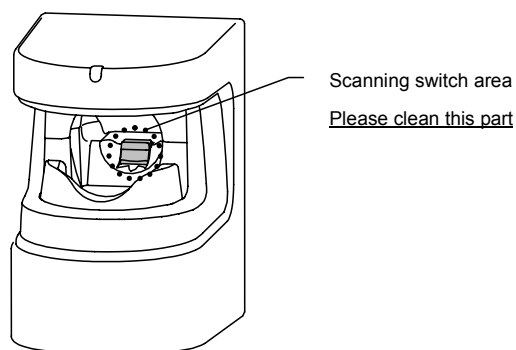


Fig 12 Scanning switch cleaning

If it is difficult to clean, please remove the finger guide before doing the cleaning. Please refer to [3.1 Cleaning Camera Lens] for the way to remove.

Important

- Please clean the scanning switch area of enrollment device periodically.
 - The authentication might be disabling if the finger guide is full of dust or mud.
 - The finger guide is fragile, please handle it carefully.
 - Please remove the USB cable and AC adapter during doing the cleaning.

4. When Faulty Occurred

4.1 Troubleshooting of each case

Case 1 Buzzer did not beep after pressing the scanning switch.

- * Please confirm whether the USB cable and AC adapter are connected correctly.
Please make sure the connector and outlet are plug in properly.
- * It might be the mis-operation such as transient noise.
Please remove the USB cable and AC adapter and re-connect them.
- * Please confirm the self-checking status when turn on the power (or when connect the AC adapter).
 Operation Guide LED Red -> Green -> Yellow Each light up around 0.5 sec
 Device The Operation Guide LED mentioned above only light up in [Blue]
 Buzzer The LED mentioned above turn off after [Beeped]
 Device might be faulty if any one of the self-checking that mentioned above is not operated.
 Please contact the distribution of this Product.

Case 2 Windows is not recognized even it is connected with PC

- * Please confirm whether the USB cable and AC adapter are connected correctly.
Please make sure the connector and outlet are plug in properly.
- * It might be the mis-operation such as transient noise.
Please remove the USB cable and AC adapter and re-connect them.
- * Please confirm the self-checking status when turn on the power (or when connect the AC adapter).
 Operation Guide LED Red -> Green -> Yellow Each light up around 0.5 sec
 Device The Operation Guide LED mentioned above only light up in [Blue]
 Buzzer The LED mentioned above turn off after [Beeped]
 Device might be fail if any one of the self-checking that mentioned above is not operated.
 Please contact the distribution of this Product.
- * The USB port mis-operation of your PC might be the reason. Please re-start the PC.

5. Product Spec

5.1 Main Spec

Table 2 Main Spec

Item		Enrollment Device
		FVN600E
Device Type		Desktop type
Dimension(mm)		72(W) X 119(H) X 132(D)
Weight		About 360g
External Interface		USB 2.0 (Type B Connector)
Power Supply		AC Adapter (I/P: AC 100-240V 50/60 Hz 0.3A) (O/P: DC 5V 0.6A)
Noise Strength	Electrostatic	Electrostatic (In air) 10kV Electrostatic (Contact) 5kV
	Radio Wave	Radio Wave Frequency Band:140MHz/400MHz/800MHz/900MHz/1.5GHz,Output:5W,Distant:1m
	Induction	0.6kV (No error)

5.2 Environment Condition

Table 3 Environment Spec

Item		Spec	Remarks
Running	Temperature	0~40 degree	Rate of change of temperature: Less than ± 10 degree/h
	Humidity	20~80%RH	No Condensation
Not run	Temperature	-10~60 degree	Rate of change of temperature: Less than ± 10 degree /h
	Humidity	20~80%RH	No Condensation
Ambient Light		Candescent light:500 lx、Sunlight: Less than 1000 lx	Sunlight does not enter camera directly
Atmosphere		No extremely dirt No corrosive gas No wet Indoor	

Notice) Please keep this device under the [Not run environment] that mentioned above.

6. Warranty

Please refer to the document related to warranty that issued from distribution or contact the distribution about the warranty of this Product.

7. Disclaimer

The Warranty does not cover the repair or exchange of a Product resulting from following items. Please acknowledge it beforehand.

- 1) The secondary faulty of our delivery system. (Recompense of production faulty, etc.)
- 2) The faulty that caused by re-creation excluding our company after our delivery.
- 3) The faulty that caused by software manufacture or modify by you.
- 4) The faulty that caused by illegal operation.
- 5) The faulty that caused by using unpermitted supplies/ replacement part.
- 6) The faulty that informed out of the warranty period.
- 7) The faulty that caused by illegal usage.
- 8) The faulty that caused by using out of the range of spec.
- 9) The not re-creation damage device that got the acceptance by you when the delivery.
- 10) The faulty that caused by the software/ data that prepared by you.
- 11) The faulty that caused by shared work with you.
- 12) The faulty design/ time schedule delay that caused by defect of providing info, data, etc. from you.
- 13) The faulty that caused by providence.

Operating Manual (SVA-SHP-FV-00073-2)

Finger Vein Enrollment Device

FVN600E

Issued Date 2008/05/29 First Issued

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Security System Division

Security Design Dept.

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