

# BoviLab Blood analyzer

BA-100A

## User Guide



- Please read this manual for its proper use.
- Store this manual in a safe place.
- You can also check the latest User Guide at the following Support site: <https://ib-holdings.com/en/bovilab-support/>

# Get started

## Before use

Thank you for purchasing this product.

This user guide describes basic operation procedures and precautions for the safe use of this product. Be sure to read this instructions carefully prior to operate this product and please store this product in a safe place.

You can also check the latest User Guide link at the following:

Support link: <https://ib-holdings.com/en/bovilab-support/>

Before using this, please register your user information on the below link. After registering as a user, you can confirm the product warranty.

User registration: <https://bovilab.ib-holdings.com/register-device>

Illustrations and screens in this manual are examples and they may differ from the actual display.

Please note that the design and product specifications are subject to change without any notice.

## Product features/purpose of use

Federal law restricts this device to sale by or on the order of a licensed veterinarian.

This device can analyze bovine animal blood samples with a simple touch panel operation. Due to the lightweight and its compact design, this product is portable.

This device is intended and designed for the analysis of bovine animal blood components recommended to be operated by licensed veterinary personnel and it is not intended to be used in human.

When using this device, please read the relevant manuals to understand and confirm the explanations.

Furthermore, the basic technical knowledge about the product may be required for its maintenance and troubleshooting.

Please perform the maintenance and troubleshooting as described in the user guide.

In case of additional troubleshooting, please contact your distributor. For the distributor's contact information, please refer to the back cover.

## Included items

Carefully remove the device out of the box and please check for any damage that may have occurred during its transport.

Make sure that the contents of the box match the contents described below.

If any items are missing or damaged, please contact your distributor. For the distributor's contact information, please refer to the back cover.

- **BoviLab Blood analyzer** (main unit) ×1
- **AC adaptor** ×1
- **Plunger** (spare) ×1
- **Hard case** ×1
- **Quick Start Guide** ×1

## Optional items

The following are optional items. Check and prepare what you need for analysis.

- **BoviLab Slide**
- **Plunger** \*
- **Diffusion plate** \*
- **Diffusion plate holder** \*

\*: These are standard items, however, additional item(s) can be purchased as a replacement when damaged or if interested in purchasing as additional spare item(s).

# Safety precautions

## Get started

This section describes precautions for safe and correct use of this device. Read and understand the following precautions before using this device.

### Device purpose of use

This device is only intended for cattle diagnostic testing.

Analysis with this device is performed using dedicated **BoviLab Slides**. You cannot use other slides.

**BoviLab Slides** are sold separately. For purchase inquiries, refer to the back cover.

### Intended users

This device is intended for use by veterinarians and workers under the guidance of a veterinarian.

### Use restrictions



This device is an analyzer for animals. It cannot be used for human analysis, diagnosis, or treatment.

Do not use outdoors in rain, snow, or direct sunlight. Maintain the following operating and storage environment conditions.


Operating environment	Temperature: –10°C to 40°C (5°C to 32°C: temperature range where analysis accuracy is guaranteed) Humidity: 20% RH to 80% RH (no condensation) Altitude: 2000 m or lower
Storage environment	Temperature: –20°C to 40°C Humidity: 5% RH to 90% RH (no condensation)

## Labels related to safety

The following labels indicate the severity of harm that will occur if not avoided.



Label	Description
 <b>WARNING</b>	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
 <b>CAUTION</b>	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

## Symbols related to safety

Symbol	Description
	Indicates that there is a risk of infection by blood samples. Always wear disposable gloves to avoid infection.

## Warnings and cautions

### Device and analysis

 <b>WARNING</b>	
	<b>Always wear disposable gloves when analyzing.</b> <b>There is a risk of infection by blood samples.</b>
<b>Do not disassemble, modify, or repair the device.</b> It may cause electric shock, smoke, or fire.	
<b>Do not touch the AC adaptor with wet hands.</b> It may cause electric shock.	
<b>Do not use adaptors other than the included AC adaptor.</b> It may cause smoke or fire in the device.	
<b>Do not use the USB port on the device to charge other devices.</b> It may cause malfunction, smoke, or fire.	

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**In the following cases, turn off the device and disconnect the power plug of the AC adaptor from the outlet.**

- The device abnormally generates heat
- The device does not operate normally

It may cause smoke or fire.

**Do not use in dusty areas.**

It may cause smoke or fire.

**When using the device, place it on a flat, even surface.**

The impact from falling may cause malfunction, smoke, or fire in the device.

**When carrying the device, be sure to put it in the hard case.**

The impact from falling may cause malfunction, smoke, or fire in the device.

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**Do not use except in the specified operating environment.**

It may cause erroneous analysis due to misoperation.

**Do not use the product if it is defective (deformed or corroded).**

It may cause erroneous analysis due to misoperation.

**Do not use in places that are directly exposed to water or moisture.**

It may cause malfunction or misoperation.

**Do not use the product if it is damaged.**

It may cut your hand and cause injury.

**Do not open the door of the device and insert your hands while the plunger is operating.**

It may pinch your fingers and cause injury.

**Do not open the door of the device and look directly at the LED light.**

It may affect your eyesight.

**Perform regular cleaning before and after analysis.**

It may cause erroneous analysis.

**When cleaning the device, do not use highly corrosive chemicals such as benzene and acetone.**

It may cause malfunction.

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## Blood samples and BoviLab Slides



When handling blood samples, be sure to wear disposable gloves to prevent contamination and infection.

Do not pipette by mouth.

Parts that come into contact with blood samples should be handled with care as there is a risk of infection in the same manner as the blood samples.

Do not touch the blood dripping area and reaction area of the **BoviLab Slide** directly with your hands to prevent contamination and infection.

Always wear disposable gloves.

When disposing of **BoviLab Slides**, take into account the risk of infection in accordance with local regulations.



Incinerate, melt, sterilize, or disinfect under the responsibility of relevant facilities.

\* For more details about **BoviLab Slide** specifications and handling, refer to the URL below.

<https://ib-holdings.com/en/bovilab-support/>

# Product warning labels and symbols

Warning labels and symbols are displayed on the device for matters that require attention. The descriptions are as follows.

	<p>This warning label indicates that there is a risk of infection by blood sample. Always wear disposable gloves when analyzing to avoid infection.</p>
	<p>This symbol indicates that attention is required when operating the device. Be sure to read the User Guide before operating.</p>



## **Do not remove the warning labels.**

If a warning label is peeled off, you will be unable to confirm the parts that require attention, which may result in an unexpected accident or injury.

If the warning label descriptions are difficult to see due to peeling or dirt on the label, please contact your dealer. For inquiries, refer to the back cover.



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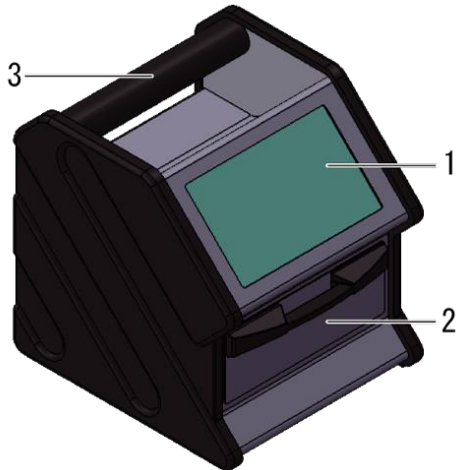
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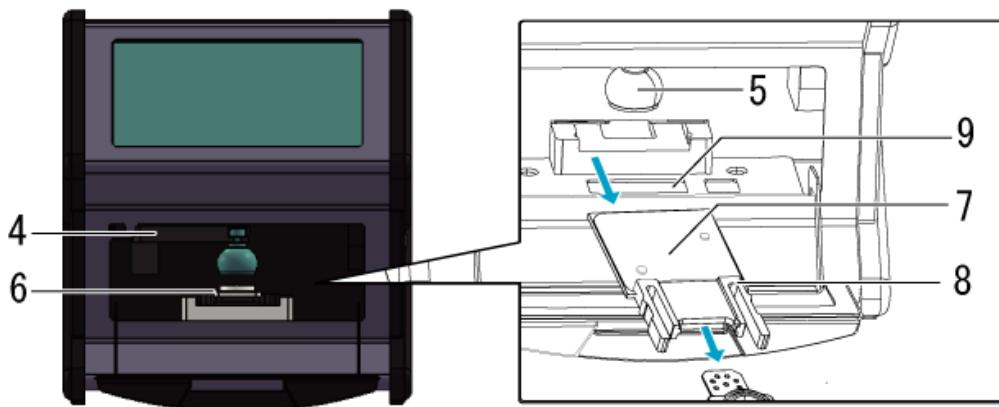
# Part names and functions

## Main unit

### Front



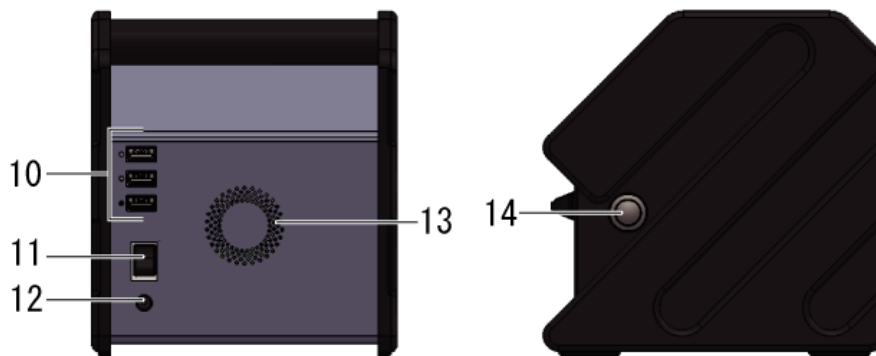
### Front (door opened)


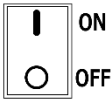



No.	Name	Description
1	<b>Touch screen</b>	Displays the operation screen and analysis results. When system startup is complete, then the home screen is displayed. For more details, refer to <a href="#">Touch screen (basic)</a> .
2	<b>Door</b>	Open and close when inserting a <b>BoviLab Slide</b> .
3	<b>Handle</b>	Used to carry the device.

4	<b>Plunger arm</b>	Moves the <b>plunger</b> vertically.
5	<b>Plunger</b>	Transfers the blood sample on the <b>BoviLab Slide</b> to the reaction area by applying pressure.
6	<b>Slide inserting portal</b>	Insert the <b>BoviLab Slide</b> to be used for analysis. * <b>BoviLab Slides</b> are sold separately.
7	<b>Diffusion plate</b>	Casts light onto the <b>BoviLab Slide</b> to analyze the blood sample.
8	<b>Diffusion plate holder</b>	Fixes the <b>diffusion plate</b> in place.
9	<b>QR code reader</b>	Scans QR information on the back of the <b>BoviLab Slide</b> .

## Back/side



No.	Name	Description
10	 <b>USB port</b> (2.0 Type A x3)	Used when connecting devices that connect via USB.
11	<b>Main power switch</b> 	Turns this device on / off.
12	<b>DC jack</b>	Connects the <b>AC adaptor</b> to supply power to the device.
13	<b>Vent</b>	Discharges exhaust air from the device.
14	<b>Power button</b> 	Turns the device system on / off.

# Touch screen (basic)

## Home screen

After system startup, then the home screen is displayed.

### Important







- Use your fingers to operate the **touch screen**. The screen may get damaged if you use a sharp or hard object instead of your fingers.



Name	Description
[Log In]	Sets a User ID or Farm ID registered in advance. For ID registration, refer to <a href="#">ID management</a> .
[Result]	Displays the analysis results in a list. For details, refer to <a href="#">Check and save analysis results</a> .
[Analysis]	Analyzes blood samples. For details, refer to <a href="#">Analysis procedure (basic)</a> .
[Setting]	Configures various settings for this device. For details, refer to <a href="#">Settings</a> .

## Control buttons

This section describes the basic control buttons on the **touch screen**.

Button icon	Button name	Description
	Back	Goes back to the previous or corresponding screen.
	Cancel	Goes back to the previous or corresponding screen without applying settings.
	OK	Applies settings and goes back to the previous or corresponding screen.
	Page up / down	Press $\triangle$ to go up one page. Press $\nabla$ to go down one page.
	Page left / right	Press $\triangleleft$ to go left one page. Press $\triangleright$ to go right one page.
	Checkbox (unselected / selected)	Pressing the checkbox turns it on and selects the item.

# Basic preparation and settings

## Conditions for installing this device

For accurate analysis, please maintain the operating environment of the device and per our suggestions.

If the conditions below are not met, problems may occur with analysis and the device.

### ■ When installing

- Always install the device in a well-ventilated, clean, and dry area.
- Install the device on a flat surface away from any vibration and shock.
- Install the device away from products that radiate heat (such as heaters).
- The operating environment where analysis accuracy is guaranteed is 5°C to 32°C and humidity: 20% RH to 80% RH (no condensation).
- Do not place objects onto the device.
- Do not block the vent by placing objects at the back of the device.
- Allow a space at least 5 cm from the back of the device to prevent the rising temperature inside the device.

### ■ When moving

- When moving the device, be sure to hold the **handle** and the device to avoid falls and shock.
- Press the **power button** to turn off the device. After the **touch screen** turns off, then turn off the **main power switch**.

Please make sure to disconnect the **AC adaptor** from the device before moving.

### ■ Before use

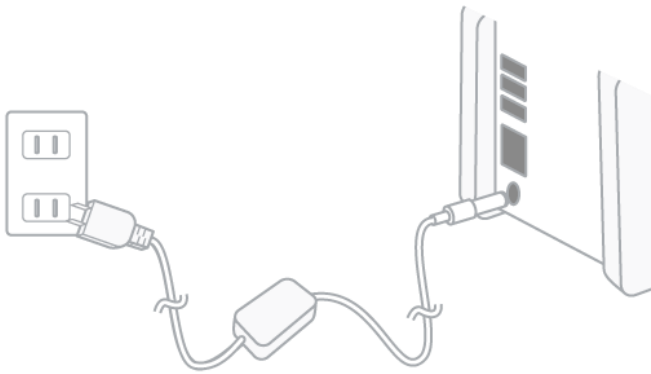
- Check regularly for any accumulation of dust and any other foreign matter. For details about maintenance, please refer to [Cleaning and storage](#).

## Connect the AC adaptor

Be sure to use the included **AC adaptor** and at the appropriate voltage.

- 1** Insert the power plug of the **AC adaptor** into an outlet.
- 2** Connect the plug of the **AC adaptor** to the **DC jack** on the device.  
→ Insert the plug straight and make sure that it is inserted all the way in.





## Analysis procedure (basic)

The basic analysis procedure is as follows.

For details about operation, refer to each step.

<b>! WARNING</b>	
	<b>Always wear disposable gloves when analyzing.</b> <b>When direct skin contact, there is a risk of infections by blood samples.</b>

**STEP 1** Start the device

(log in or not)

**STEP 2** Input a Cow ID

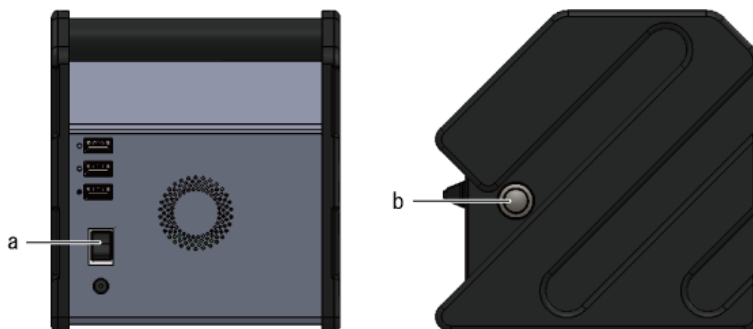
**STEP 3** Prepare a slide

**STEP 4** Start analysis

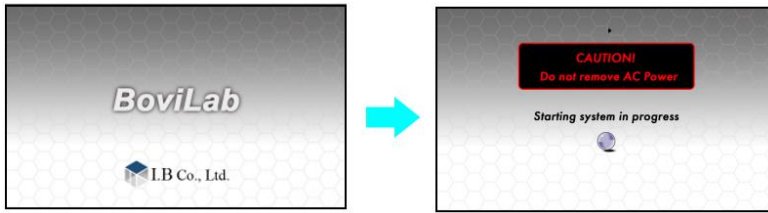
**STEP 5** Finish analysis

### STEP 1 Start the device

- 1 Turn on the **main power switch** (a) that is on the back of the device, and then press the **power button** (b) that is on the side of the device.



- 2 The initial screen is displayed on the **touch screen**, and then it switches to the startup screen after approximately 1 minute.

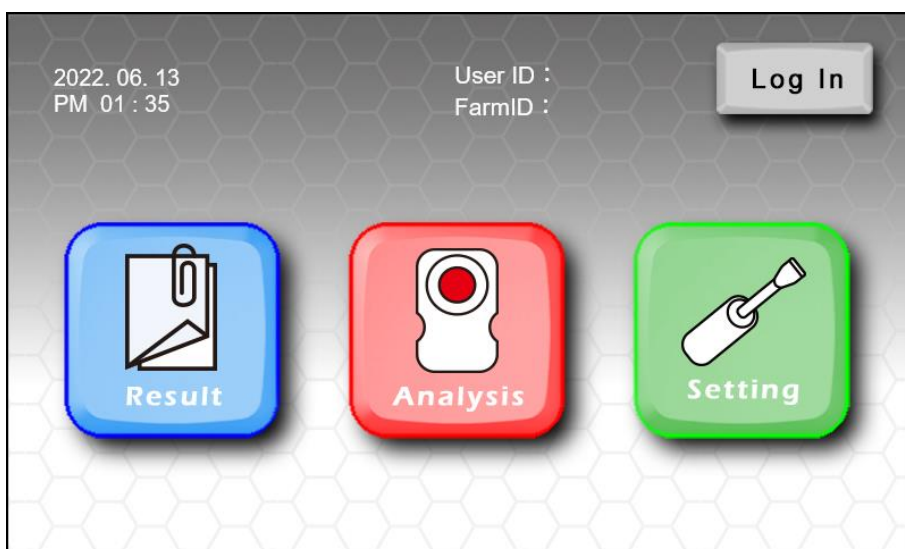


- 3 When system startup is complete, the the home screen is displayed.



## STEP 2 Input a Cow ID

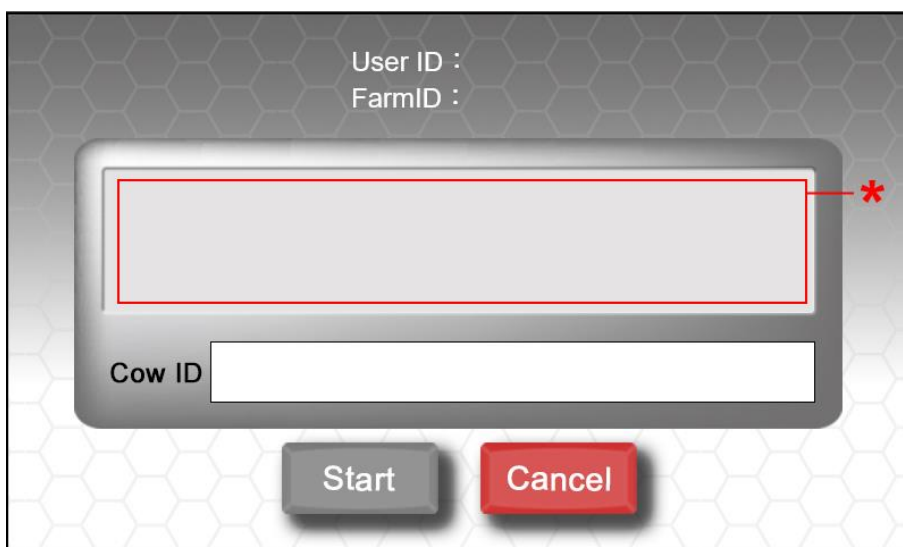
- 1 Press [**Analysis**] on the home screen.  
→ An error message will be displayed if a problem occurs with the temperature inside the device.  
Follow the message.



### Tip

- You can also set an ID and analyze by pressing [**Log In**]. Setting IDs makes data management and searching after analysis easier. For details, please refer to [Log in to analyze](#).

- 2 Input the Cow ID into the Cow ID input field.
  - To analyze without inputting the Cow ID, leave the Cow ID field blank and go to STEP 3.
  - You can input up to 16 single-byte characters for the Cow ID.
  - You can switch between the numeric keypad or keyboard on the input screen.



\*: A message is displayed. Follow the on-screen instructions.

### STEP 3 Prepare a slide

#### WARNING



**Always wear disposable gloves when analyzing.  
There is a risk of infection by blood samples.**

#### Important

- Please Handle the **Bovilab Slide** appropriately for the accurate analysis results.

- 1 Prepare the **Bovilab Slide** to be used for analysis.
  - For details about **Bovilab Slide** preparation, please refer to [Prepare a Bovilab Slide](#).
- 2 Open the device's **door** and set the **Bovilab Slide** with the blood sample into the **slide inserting portal**.

Be sure to close the **door** after inserting the **Bovilab Slide**. The device will start scanning the QR information on the **Bovilab Slide** upon closing the **door**.

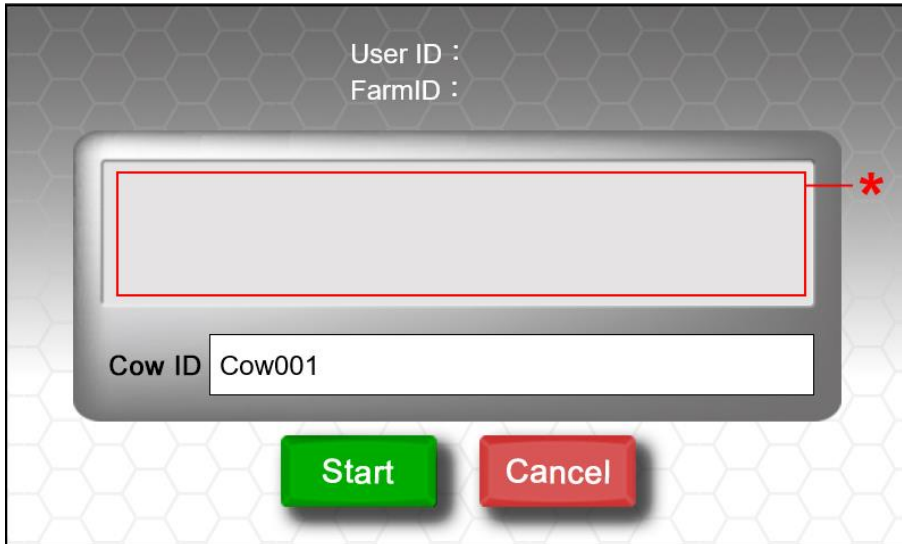


**3** When the QR information on the back of the **BoviLab Slide** has been scanned, [**Start**] will change from gray to green.

→ If [**Start**] does not change from gray to green, it may be due to the following.

For details about solutions, refer to “[**Analysis**] screen” in [Error message list](#).

- The inserted **BoviLab Slide** has already been analyzed
- The position of the **BoviLab Slide** is incorrect
- The QR information of the **BoviLab Slide** could not be read



\*: A message is displayed. Follow the on-screen instructions.

## STEP 4 Start analysis

**1** Press [**Start**] to start analysis.

→ An error message will be displayed if a problem occurs during analysis. For details, please refer to [Error message list](#).

→ To check the past analysis results during measurement, press [**Result**].

→ To change the Cow ID during analysis, press [**Cow ID**].



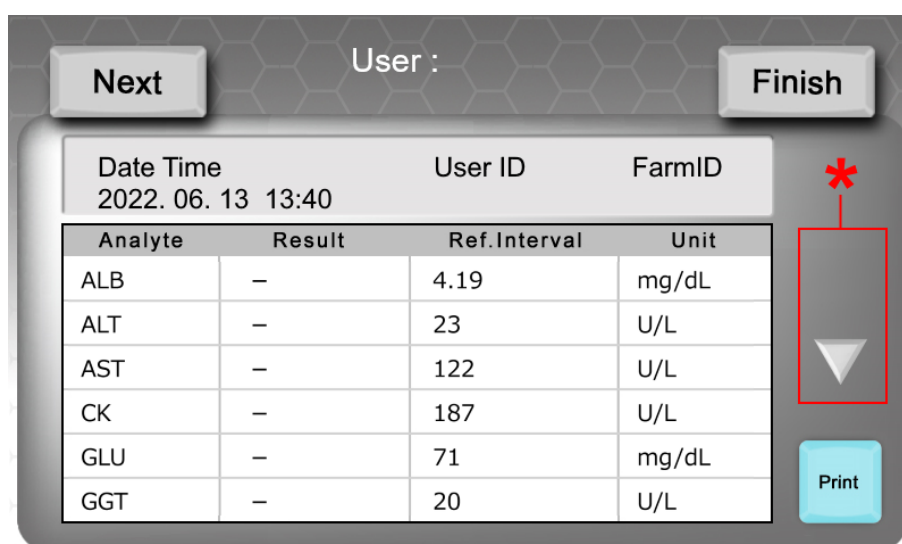
## STEP 5 Finish analysis

- 1** When blood sample analysis is complete, the [Result] screen is displayed.  
→ The descriptions of the display in the [Result] column are as follows.

Display	Description
<	It is higher than the maximum limit of the analysis.
()	Preliminary Data. It is lower than the minimum limit of the analysis.
*	Preliminary Data. Bubbles or contaminants detected in the blood sample.
Err	Device could not proceed with analyzing the blood sample.
N/A	Could not calculate the analysis value.

### Tip

- r-GT, ug, umol, and uEq represent  $\gamma$ -GT,  $\mu\text{g}$ ,  $\mu\text{mol}$ , and  $\mu\text{Eq}$  respectively.



\*: Press  $\blacktriangle$ / $\blacktriangledown$  to scroll through screens. The display depends on the details of the analysis results.

1st page: $\blacktriangledown$	7 or more items for analysis results
1st page: $\blacktriangle$	Info about analysis abnormalities on the 2nd page
2nd page: $\blacktriangledown$	Go back to the 1st page

- 2 If there are any notes on the analysis results, the following will be displayed in the notes column on the second page of the [Result] screen.

■ **Hemolysis**

Depending on the analyzed value of Hb concentration, it will be displayed as follows.

Hb concentration (mg/dL)	notes
0 - 100	No display
100 - 300	Hemolysis AN1
300 - 500	Hemolysis AN2
500 <	Hemolysis AN3

■ **Analysis at non-recommended temperature**

If analyzed at a temperature outside the recommended range, the following will be displayed.

\* The recommended environment where analysis accuracy is guaranteed: 5°C to 32°C

Temperature	notes
- 10°C to 5°C	Temperature lower
32°C to 40°C	Temperature higher

■ **Door was opened during analysis**

notes
Door opened

- 3 Press [Next] to continue analysis or press [Finish] to finish it.

→ After analysis, be sure to remove the **BoviLab Slide**.

→ You cannot reuse **BoviLab Slides** that have been analyzed.

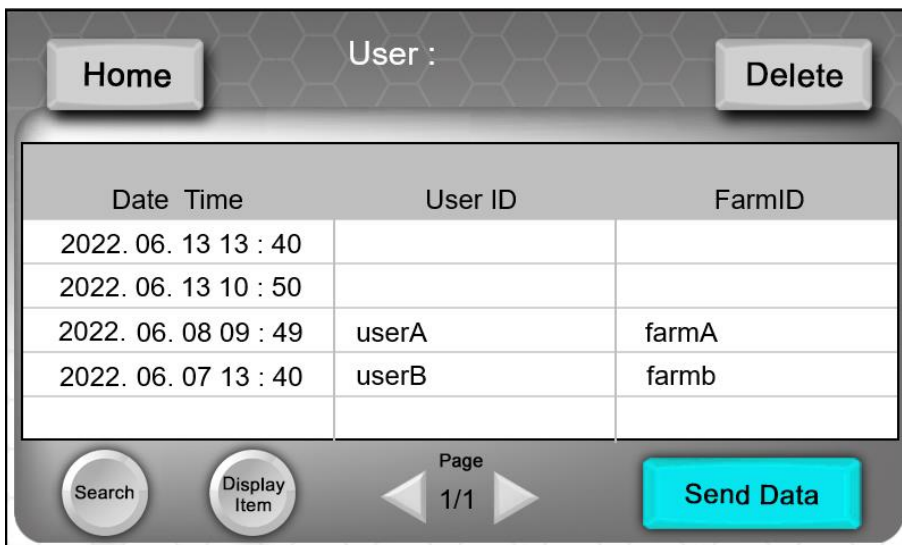
→ Dispose the used **BoviLab Slide** properly and per user's instructions. When disposing of BoviLab Slides, please follow the risk of infection and incinerate, melt, sterilize, or disinfect under the responsibility of relevant facilities in accordance with the local regulations.

## STEP 6 Check analysis results from the home screen

- 1 Press [**Result**] on the home screen.



- 2 A list of analysis results is displayed. For details, please refer to [Check and save analysis results](#).





# Log in to analyze

This section describes how to set up an ID to analyze.

Setting up User IDs and Farm IDs makes data management and searching after analysis easier.

## Tip

- This procedure requires ID registration in advance. For details about ID registration, refer to [ID management](#).

## Set a User ID

Set a registered User ID to analyze.

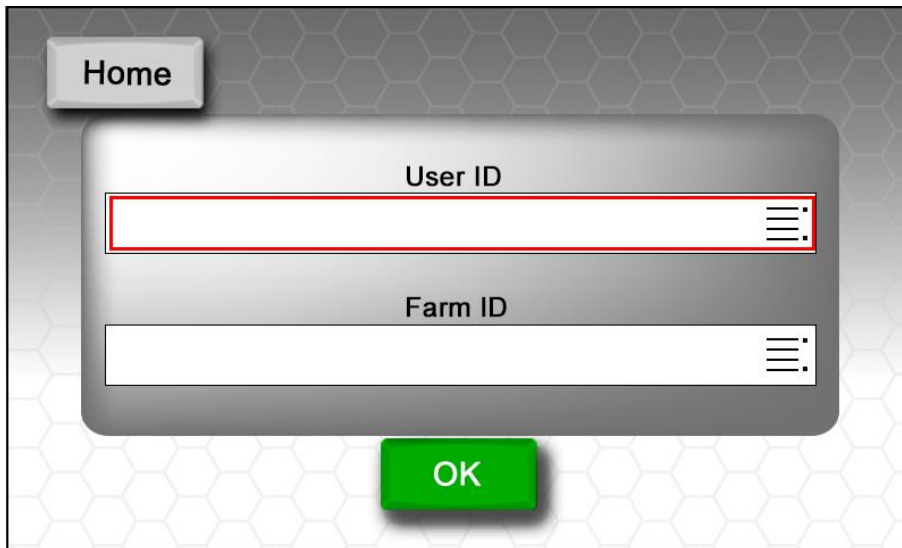
- 1 Press [**Log In**] on the home screen.



**2** Press the [**User ID**] field.

Registered User IDs will be displayed in a list. Select the desired User ID.

→ For details about User ID registration, refer to [Manage User IDs](#).

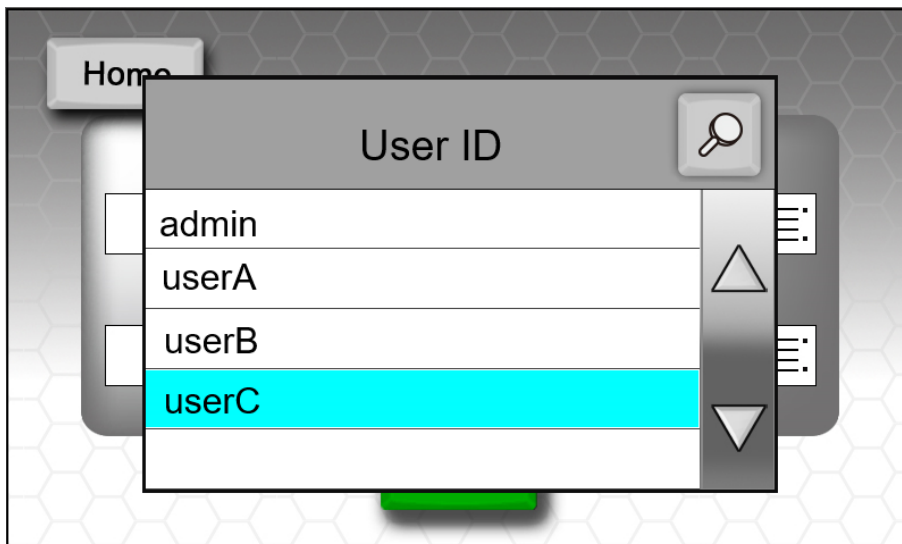


**3** When the selected User ID is highlighted in blue, press the User ID again to confirm.

→ [**admin**]: Log in as an administrator.

→ You can search for an ID by pressing the "Q" icon and inputting the ID.

Searching is case-sensitive. Input the ID correctly.



- 4 If you selected [admin] or a User ID set with a password, input the password on the [Enter Password] screen and press [OK].
- An error message will be displayed if the password is incorrect.
  - If you set a password for analysis, you can restrict access to the analysis data.



## Set a Farm ID

Set a Farm ID to analyze. There are two ways to set a Farm ID.

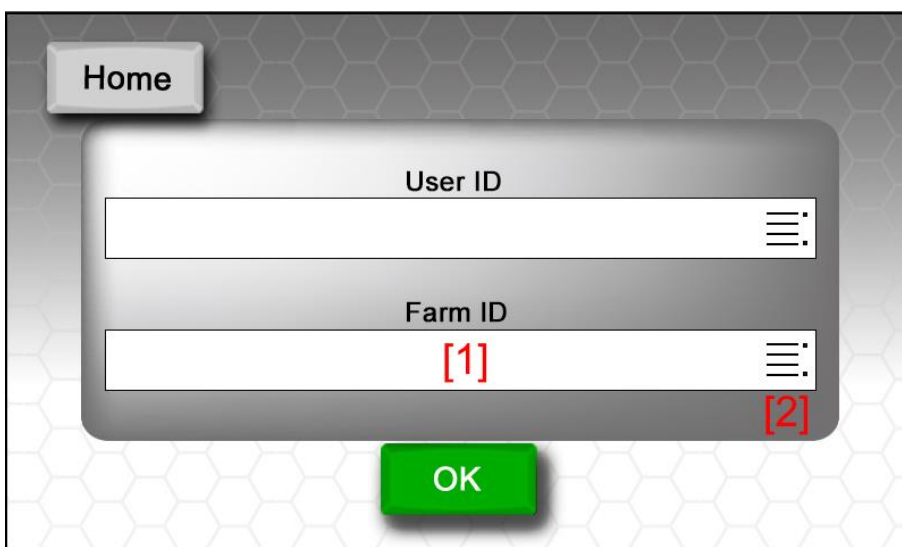
- Input any Farm ID
- Select a registered Farm ID

- 1 Press [1] or [2] in the [Farm ID] field.

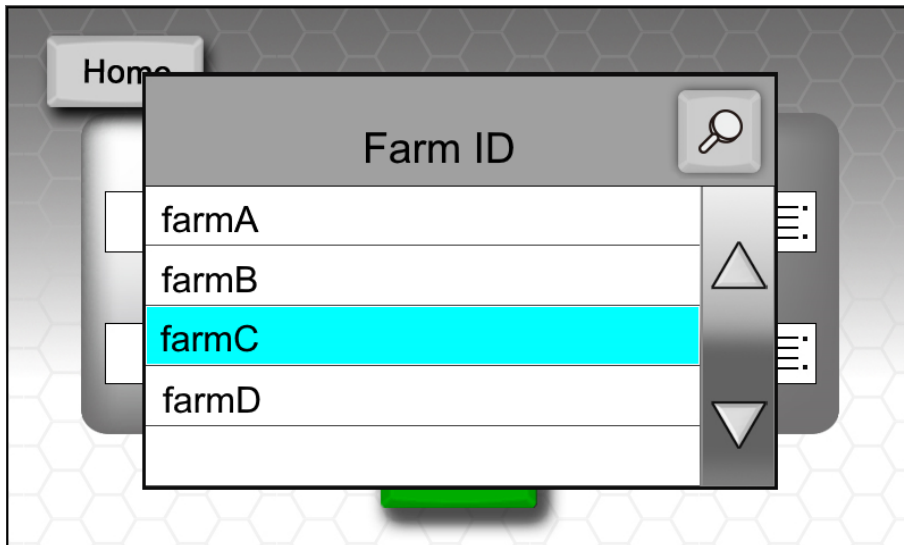
[1]: Input any Farm ID. You can input up to 16 single-byte characters. Go to step 3.

[2]: Registered Farm IDs will be displayed in a list. Select the desired Farm ID. Go to step 2.

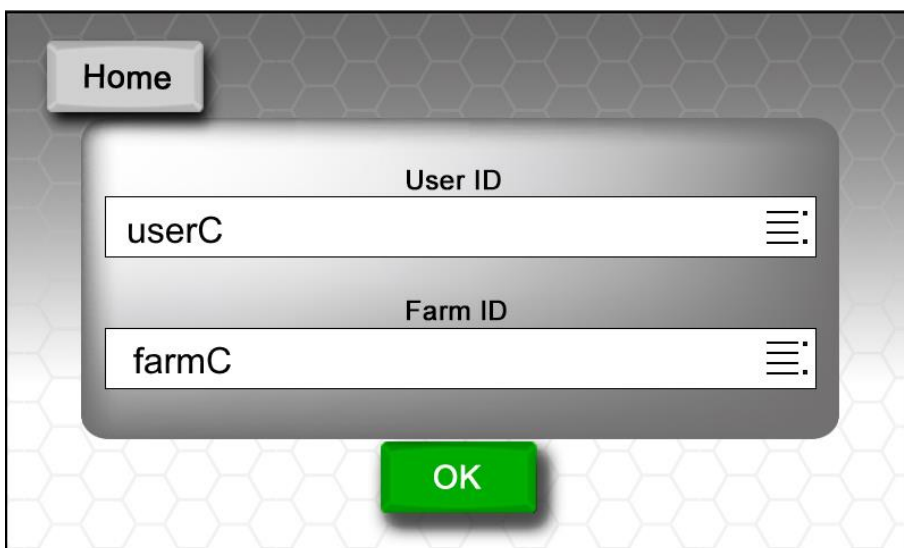
→ For details about Farm ID registration, refer to [Manage Farm IDs](#).



- 2** When the selected Farm ID is highlighted in blue, then press the Farm ID again to confirm.  
→ You can search for an ID by pressing the “Q” icon and inputting the ID.  
The search is case-sensitive. Input the ID correctly.



- 3** Press [OK] to log in.



## Log out

- 1 Press [**Log Out**] on the home screen.

→ Logout is complete when the button at the top right of the screen changes from [**Log Out**] to [**Log In**].



# Prepare a BoviLab Slide

Prepare the **BoviLab Slide** to be used for analysis.

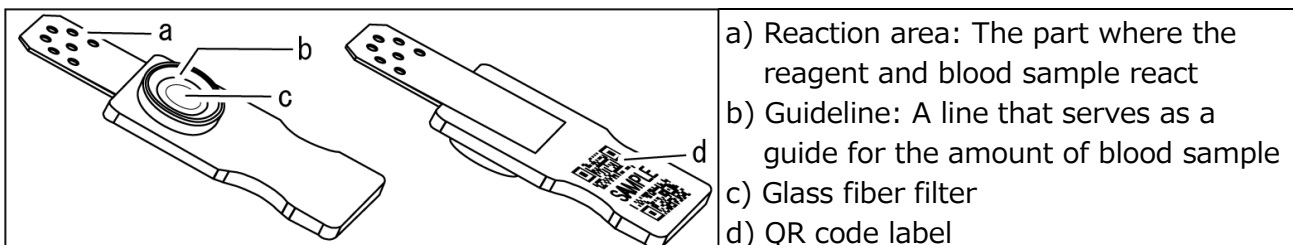
 <b>WARNING</b>	
	<b>Always wear disposable gloves when analyzing.</b> <b>When direct skin contact, there is a risk of infections by blood samples.</b>

## Important

- Handle the **BoviLab Slide** correctly for the proper analysis results. For details about **BoviLab Slides**, please refer to the URL below.  
<https://ib-holdings.com/en/bovilab-support/>

## Tip

- **BoviLab Slides** are sold separately. For purchasing BoviLab Slides, please contact the distributor. Please refer to the back cover of the product for the distributor's contact information



- 1 Return the aluminum bag that contains the **BoviLab Slide** to an ambient temperature.
  - Do not use if the aluminum bag is damaged.
  - Be sure to return the aluminum bag to an ambient temperature prior to opening it. Removal of the **BoviLab Slide** from the aluminum bag while it is still cold may cause condensation and it will result in incorrect analysis.



- 2 Remove the **BoviLab Slide** from the aluminum bag.
  - **BoviLab Slides** removed from aluminum bags deteriorate by ultraviolet rays. Use them for analysis immediately.
  - You cannot store and reuse **BoviLab Slides** once they are taken out of the aluminum bag.
  - Use a new **BoviLab Slide** after every analysis. It cannot be reused once a blood sample is dropped.
  - Do not touch or soil the blood dripping area of the **BoviLab Slide** directly with your hands.
  - Do not soil the QR code label on the back of the **BoviLab Slide**.



- 3** Drop the blood sample on the **BoviLab Slide**. Drop the blood sample and wait for about 5 seconds, and then check if the blood sample is in the proper amount.
- The proper amount of blood sample is 120  $\mu$ L to 150  $\mu$ L. Drip within the guideline.
  - You can also use serum and blood sample plasma. When using refrigerated or frozen blood sample, be sure to invert it after returning it to an ambient temperature.



Appropriate (OK)	Insufficient (Not OK)	Excessive (Not OK)
		



- 4** Open the device's **door** and insert the **BoviLab Slide** into the **slide inserting portal**. Be sure to close the **door** after inserting the **BoviLab Slide**.



- 5** After analysis, remove the **BoviLab Slide** from the device.  
→ When disposing of **BoviLab Slides**, please follow the risk of infection and incinerate, melt, sterilize, or disinfect under the responsibility of relevant facilities in accordance with the local regulations.

# Operation procedures (advanced)

## Advanced operations

Refer to the table below for advanced operations, and check the devices and settings that correspond to the feature that you would like to use.

Item	Required options	Required settings	Internet access
Print analysis result	•USB-supported printer (Supports USB Type A connection)	–	Not required
	•USB Bluetooth adaptor (Supports 4.0) •Bluetooth-supported printer (Supports 4.0)	•Bluetooth-supported printer and pairing	Not required
Send analysis result to <b>BoviMemo</b>	•USB wireless adaptor	•[ <b>Network</b> ] settings	Required
	•USB ethernet adaptor •LAN cable (CAT.5 or higher)	•[ <b>Network</b> ] settings	Required
Save analysis result to USB memory	•USB memory (cannot use USB memory with a password lock feature) •USB 2.0 or higher	–	Not required

Other

Item	Required options	Required settings	Internet access
Manage User IDs and Farm IDs (add or delete IDs)	Not required	•[ <b>User</b> ] settings •[ <b>Farm</b> ] settings	Not required

### Tip

**BoviMemo** is recommended for managing analysis result data. For details about **BoviMemo**, refer to the back cover.

- A csv file is saved in the USB memory.

### Tip

Pairing with Bluetooth devices

- You can pair this device with a printer that supports Bluetooth 4.0.
- The Bluetooth printer is assumed to be a mobile printer.
- For details about pairing with a supported printer, please refer to the printer's manual.

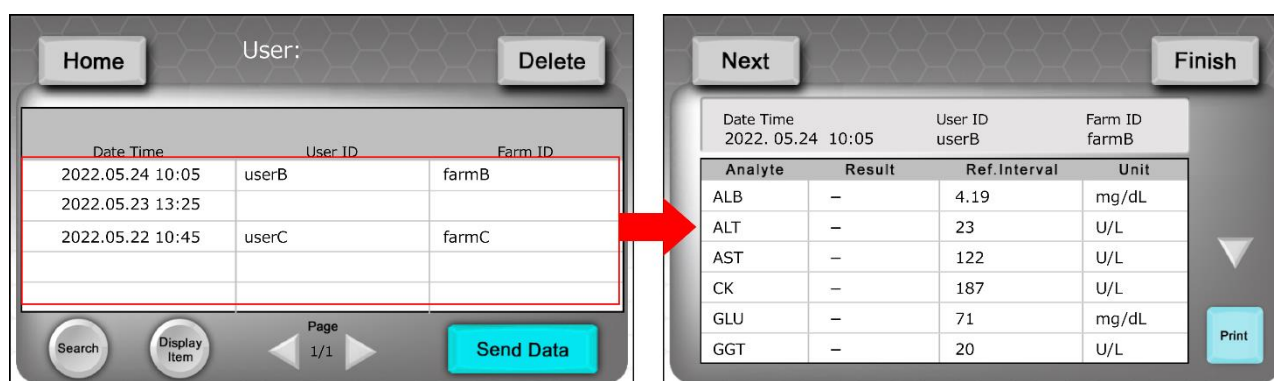
# Check and save analysis results

You can do the following with the analysis results.

- Print
- Save data to USB memory
- Send data to **BoviMemo**

**BoviMemo** is recommended for checking and saving analysis result data.

## Screen description

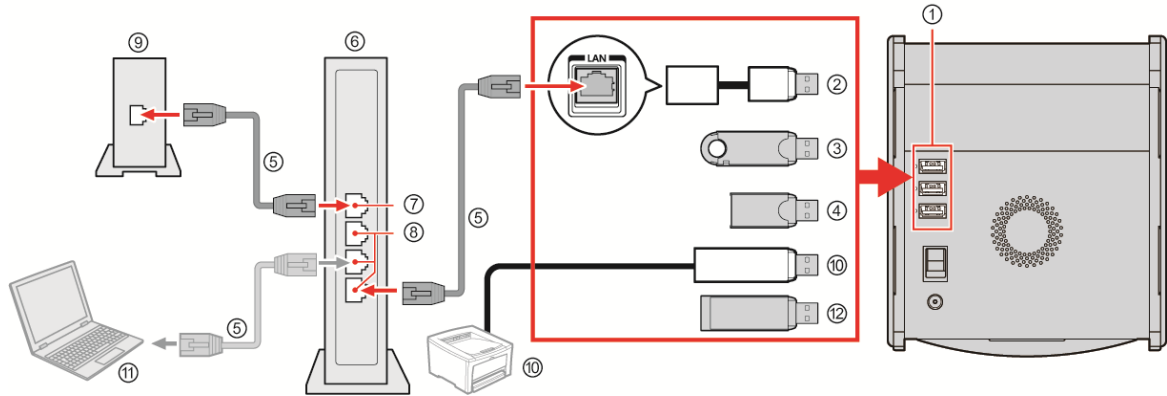


\* The right screen is details of the analysis result

Item	Description	Related item
[Home]	Returns to the [Home] screen.	–
[Delete]	Deletes analysis results.	<a href="#">Delete analysis results</a>
[Search]	Search for analysis results by specifying conditions.	<a href="#">Search analysis results</a>
[Display Item]	Set your preferred header items displayed on the screen.	<a href="#">Edit the analysis results screen</a>
[Send Data]	Sends analysis results to <b>BoviMemo</b> .	<a href="#">Save analysis results</a>
[Modify]	Edit analysis results.	<a href="#">Edit analysis results</a>
[Print]	Prints analysis results.	<a href="#">Print analysis results</a>

## Connect an external device

You can connect the devices below to the USB ports on the back of this device at ①. Connect the device based on the intended use.



No.	Name	No.	Name
①	<b>USB ports</b> on the back of this device (supports 2.0)	⑦	Router WAN port
②	USB ethernet adaptor	⑧	Router LAN port
③	USB wireless adaptor	⑨	Internet modem
④	USB Bluetooth adaptor (supports 4.0)	⑩	Applicable printers below <ul style="list-style-type: none"> <li>• Supports USB cable connections (USB Type A)</li> <li>• Supports Bluetooth connections (supports 4.0)</li> </ul>
⑤	LAN cable (CAT3, Category 5 or higher)	⑪	Supported computers (wired LAN/wireless LAN (Wi-Fi)/Bluetooth)
⑥	Router	⑫	USB memory

### Tip

- The above is done with the assumptions that you are able to connect this device to your existing Internet environment.
- If the device is not connected as shown in the manual, then a normal communication may not be possible.
- The modem and router may be integrated. Read the manual for each device carefully.
- If you connect to a line, such as a router, that is not set correctly, then this device may not operate normally.
- You cannot use this device to set a router or modem built into a router. You may have to configure settings on the computer depending on the network devices.
- This device cannot use the Internet on dial-up connections or ISDN lines.
- You can also tether with mobile devices. To tether, please refer to the manual of the mobile device.

## Print analysis results

You can print analysis results.

### Tip

Make sure in advance that the printer's paper is.

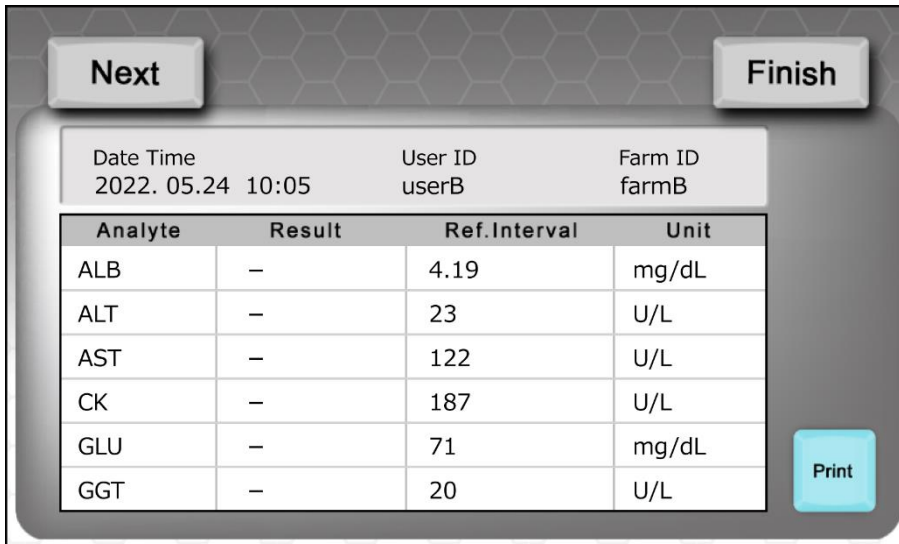
### Reference

- For details about required devices, refer to [Advanced operations](#).
- For details about required device connections, refer to [Connect an external device](#).

## If a Bluetooth-supported printer is connected

- 1 Select the desired analysis result.

The details of the selected analysis result are displayed.

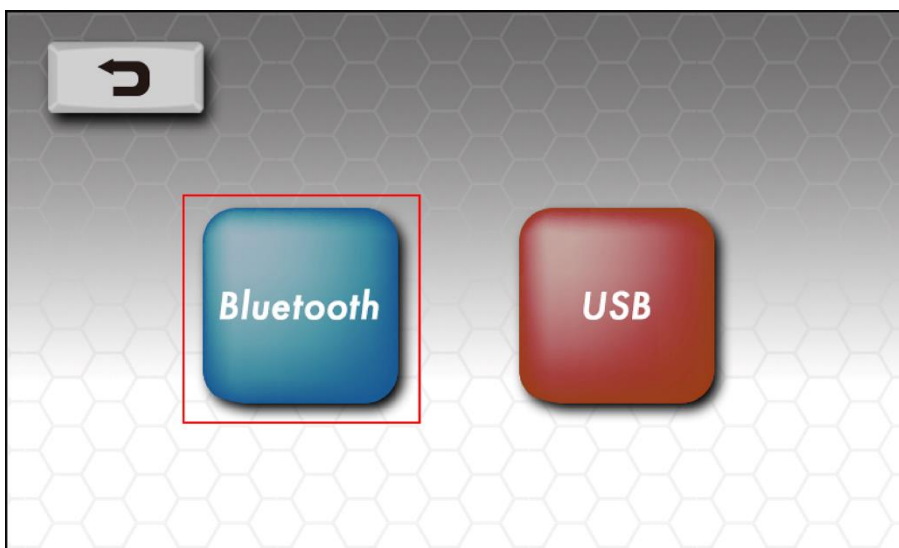


Date Time	User ID	Farm ID
2022. 05.24 10:05	userB	farmB

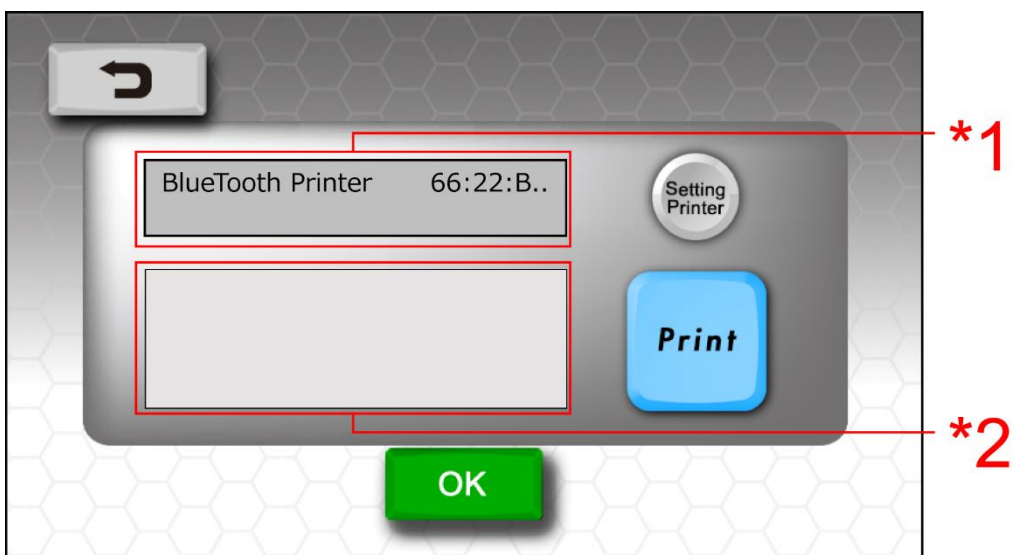
  

Analyte	Result	Ref.Interval	Unit
ALB	–	4.19	mg/dL
ALT	–	23	U/L
AST	–	122	U/L
CK	–	187	U/L
GLU	–	71	mg/dL
GGT	–	20	U/L

- 2 Press [**Print**].  
A device selection screen is displayed.  
→ Select [**Bluetooth**].



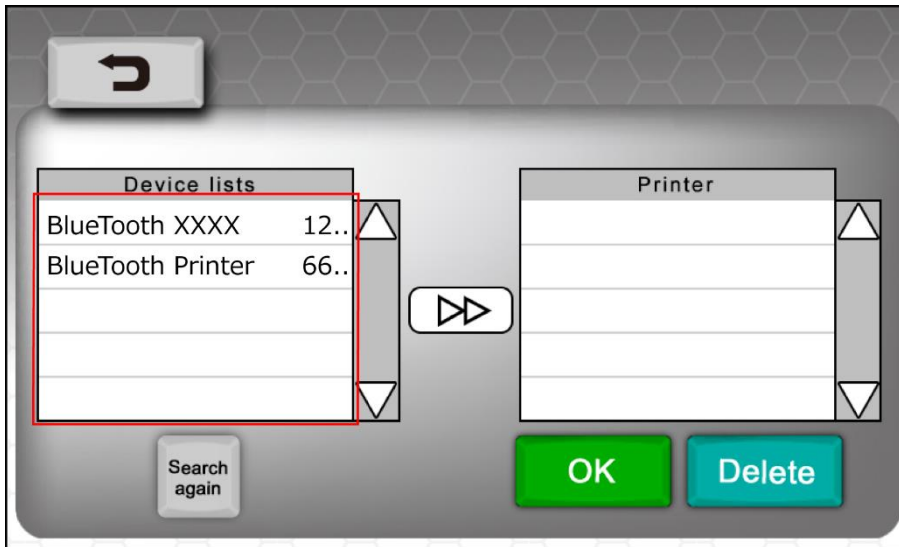
- 3 The status of the connection with the Bluetooth-supported printer is displayed.  
\*1: Information such as the name of the Bluetooth paired printer is displayed.  
\*2: Relevant messages are displayed.  
Message example: Please select the correct Bluetooth printer device by pressing "Setting Printer"  
→ [**Setting Printer**]: Display a list of printers that can print.



- 4 Press [**Print**].  
The analysis result is sent to the paired printer and then printed.

## To change the connection setting with a Bluetooth-supported printer

- 1 Press [**Setting Printer**] in step 3.



- 2 Select a printer displayed in [**Device lists**].  
→ Press [**Search again**] to search for printers again.
- 3 Press [**▶▶**] to add it to [**Printer**].
- 4 Select the printer and press [**OK**].  
The printer is selected.  
→ If you select a printer and then press [**Delete**], the printer and connection will be removed.

### Tip

If a printer is not displayed in [**Setting Printer**]

If a printer is not displayed, check the following.

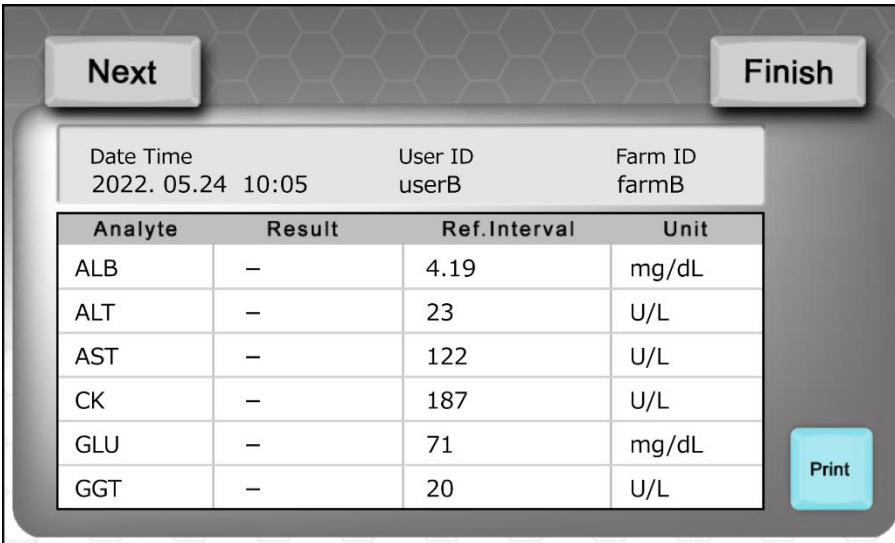
- Is the printer on?
- Is it ready to print without any errors displayed?
- Is the Bluetooth adapter properly connected to this device?

→ Check if it is already connected in the pairing settings of the Bluetooth printer.

## If a USB printer is connected

- 1 Select the desired analysis result.

The details of the selected analysis result are displayed.



Date Time	User ID	Farm ID
2022. 05.24 10:05	userB	farmB

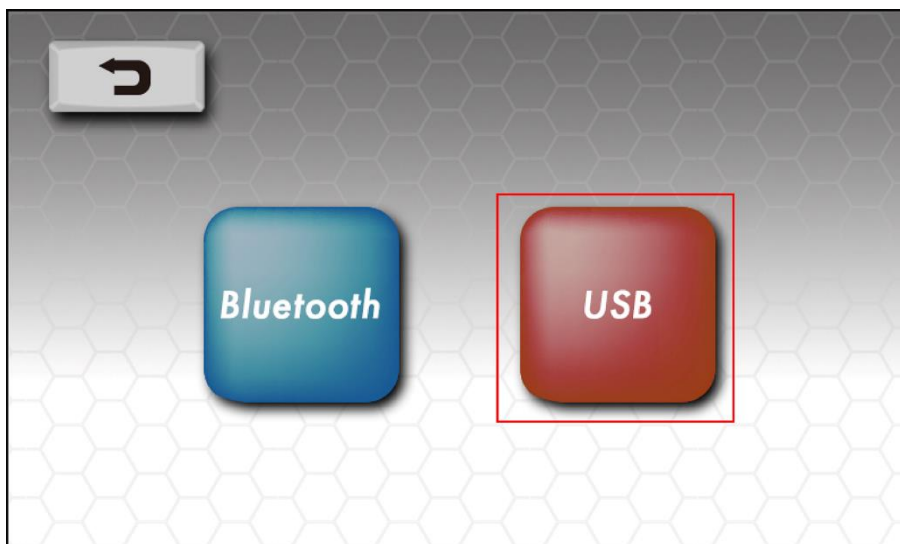
  

Analyte	Result	Ref.Interval	Unit
ALB	–	4.19	mg/dL
ALT	–	23	U/L
AST	–	122	U/L
CK	–	187	U/L
GLU	–	71	mg/dL
GGT	–	20	U/L

- 2 Press [**Print**].

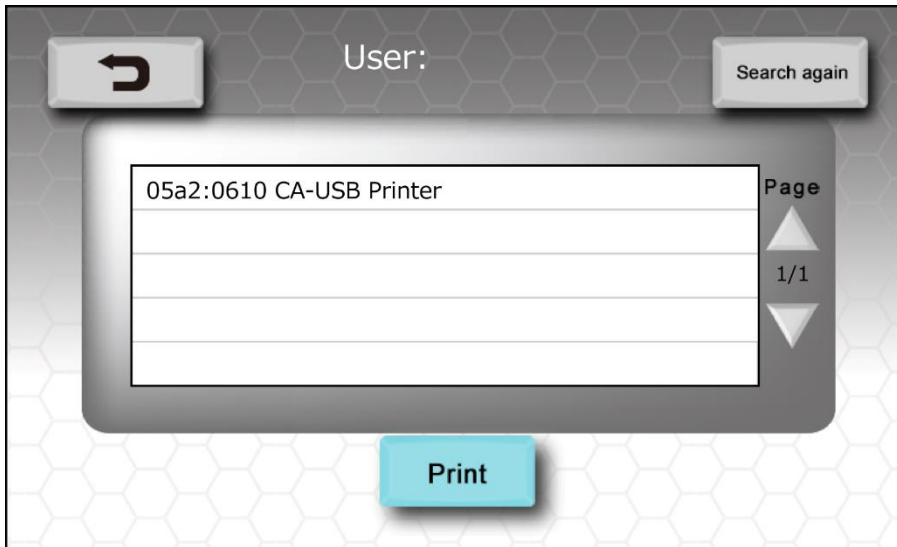
A device selection screen is displayed.

→ Select [**USB**].





- 3** Select a printer.  
→ Select an available printer from the list.  
→ [**Search again**]: Search for available printers again.



- 4** Press [**Print**].  
The analysis result is sent to the selected printer and printed.

**Tip**

If a printer is not displayed in [**Setting Printer**]

If a printer is not displayed, check the following.

- Is the printer on?
- Is it ready to print without any errors displayed in the printer?
- If connected to a USB printer, is the USB cable and this device properly connected?

→ Also check if the cable is damaged.

## Save analysis results

You can save analysis results with the following methods.

Destination	Sending/saving procedure	Related item
<b>BoviMemo</b>	Send directly to <b>BoviMemo</b> from the device	<ul style="list-style-type: none"> <li>• <a href="#">Connect an external device</a></li> <li>• [<b>Network</b>] settings</li> </ul>
	Send to <b>BoviMemo</b> via USB memory <ol style="list-style-type: none"> <li>1. Save to USB memory from the device</li> <li>2. Connect USB memory to a computer with Internet access</li> <li>3. Send to <b>BoviMemo</b> from the computer</li> </ol>	<a href="#">Connect an external device</a>
Computer	Save on computer via USB memory <ol style="list-style-type: none"> <li>1. Save to USB memory from the device</li> <li>2. Connect USB memory to a computer</li> <li>3. Copy data from USB memory to the computer</li> </ol>	<a href="#">Connect an external device</a>

### Tip

#### About **BoviMemo**

The dedicated app is required to send to **BoviMemo** and to manage the data.

For details about getting the dedicated app and about **BoviMemo**, please refer to the back cover.

### Tip

Analysis results that are sent to **BoviMemo** are the ones that have not yet been sent to **BoviMemo**.

The analysis results that are sent (saved) depend on the login type and status.

Status	Login type	Sent (saved) analysis results
Logged out	–	Analysis results without user ID password
Logged in	User ID without password	* Applies to all analysis results.
	User ID with password	<ul style="list-style-type: none"> <li>• Analysis results without user ID password</li> <li>• Analysis results of the logged in User ID</li> </ul> * Applies to all analysis results.
	admin	All analysis results

### Save to BoviMemo: send data directly

- 1 Connect this device to the Internet.
- 2 Configure this device's [**Network**] settings.
- 3 Select [**Send Data**] on the analysis result screen, and then press [**Cloud**].

### Save to BoviMemo: send data via USB memory

- 1 Connect USB memory to this device.
- 2 Select [**Send Data**] on the analysis result screen, and then press [**USB**].
- 3 Connect the USB memory with the stored data to a computer installed with the dedicated app.
- 4 Send the analysis result data in the USB memory through the dedicated app.

### Save to USB memory

- 1 Select [**Send Data**] on the analysis result screen, and then press [**USB**].

#### Tip

You cannot select data you want to save.

#### Tip

Unnecessary analysis results

- Delete unnecessary analysis results before saving. However, note that deleted analysis results cannot be recovered.

#### Tip

A csv file is saved in the USB memory.

#### Tip

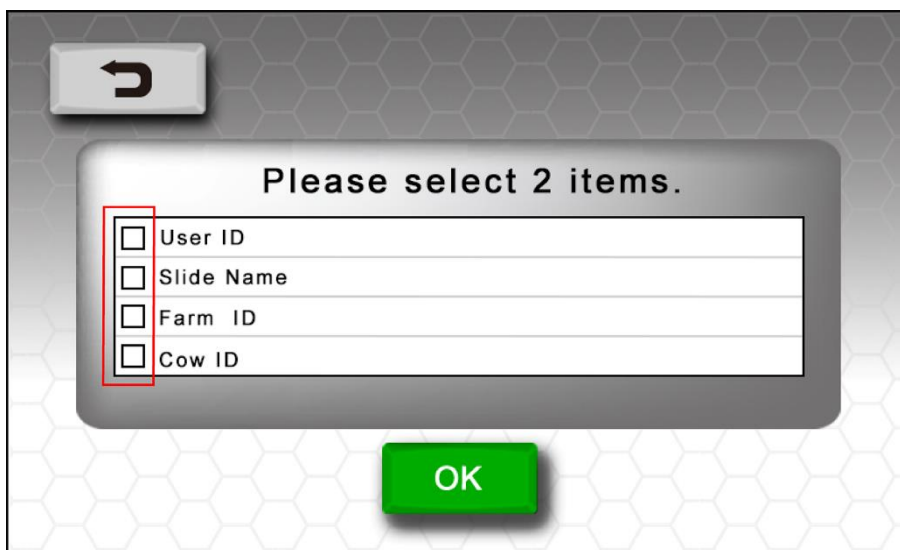
For details about getting the dedicated app, refer to the back cover.

## Other (display/search/edit/delete analysis results)

### Edit the analysis results screen

Set your preferred header items displayed on the screen.

- 1 Press [**Display Item**].  
A selection screen is displayed.  
→ Select two items.



- 2 Press [**OK**].  
The header items displayed on the analysis results screen change.

### Edit analysis results

You can edit analysis results.

#### Tip

You can edit the following.

- [**User ID**]: Select from the User ID registration information.
- [**Farm ID**]: Select from the Farm ID registration information or input an ID with the keyboard.
- [**Cow ID**]: Input a Cow ID with the keyboard.

- 1 Press the desired analysis result.  
The details of the analysis result are displayed.

Date Time	User ID	Farm ID
2022. 05.24 10:05	userB	farmB

Analyte	Result	Ref.Interval	Unit
ALB	-	4.19	mg/dL
ALT	-	23	U/L
AST	-	122	U/L
CK	-	187	U/L
GLU	-	71	mg/dL
GGT	-	20	U/L

- 2 Press [**Modify**].  
Select an item to edit.

Date Time	User ID	Farm ID
2022. 05.24 10:05	user B	farmB

Cow ID

Farm ID

User ID

**OK**

## Search analysis results

Search for analysis results by specifying conditions.

The analysis results that are searched depend on the login type and status.

Status	Login type	Searched analysis results
Logged out	—	Analysis results without user ID password * Applies to all analysis results.
Logged in	User ID without password	* Applies to all analysis results.
	User ID with password	<ul style="list-style-type: none"> <li>Analysis results without user ID password</li> <li>Analysis results of the logged in User ID</li> </ul> * Applies to all analysis results.
	admin	All analysis results

### Tip

You must set one of the following as a search condition.

- [Slide]: Select from slide information analyzed in the past.
- [Cow ID]: Input an ID with the keyboard.
- [Farm ID]: Select from the Farm ID registration information.
- [User ID]: Select from the User ID registration information.
- [Date]: Input the analysis date with the numeric keypad.

### Tip

Use upper and lower cases when inputting keywords as the This search is case-sensitive.

Ex) "F" and "f" are considered distinct characters.

Please pay special attention to case-sensitive when inputting keywords.

**1** Press [Search].

A search screen is displayed.

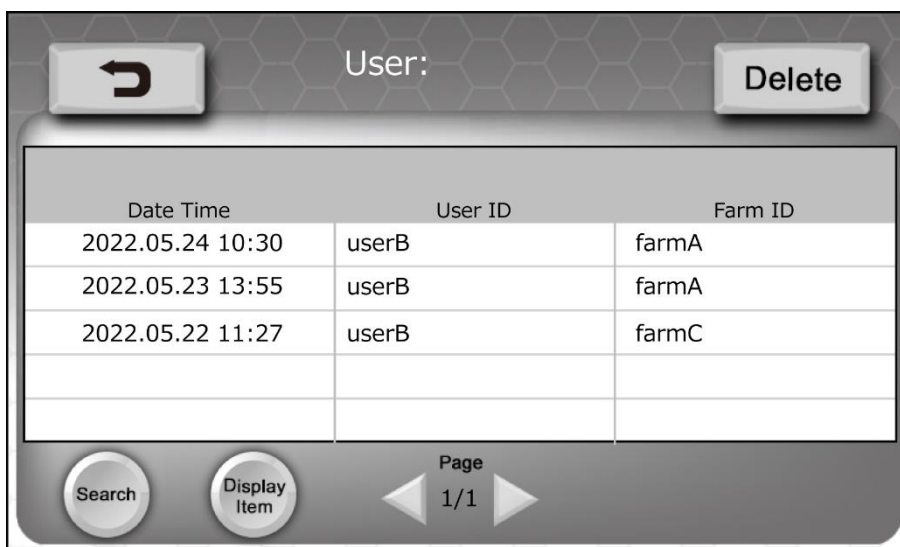
→ Specify a keyword of the desired test result.

The screenshot shows a search interface with a grey background and a white hexagonal pattern. At the top left is a grey button with a white arrow pointing left. Below it is a white rounded rectangle containing five input fields:
 

- Slide: A white text box with a three-line menu icon on the right.
- Cow ID: A white text box.
- Farm ID: A white text box with a three-line menu icon on the right.
- User ID: A white text box with a three-line menu icon on the right.
- Date: Two white text boxes separated by a tilde (~) symbol.

 A red rectangular box highlights the entire search form area. At the bottom center of the screen is a green button with the text "OK" in white.

- 2 Press [OK].  
The search results are displayed.



Date Time	User ID	Farm ID
2022.05.24 10:30	userB	farmA
2022.05.23 13:55	userB	farmA
2022.05.22 11:27	userB	farmC

## Delete analysis results

You can delete analysis results.

- 1 Press [Delete].  
A message about the deletion is displayed.  
→ Follow the on-screen instructions.
- 2 Select the desired analysis result.  
→ Press  to change to .
- 3 Press [Delete].  
A message about the deletion is displayed.  
→ Follow the on-screen instructions.  
→ The selected items are deleted.

# ID management

This is to manage User IDs and Farm IDs that are registered in this device.  
Press [**Setting**] in the [**Home**] screen, and then select [**User/Farm**].

## Screen description



Item	Description
[ <b>User</b> ]	Displays a list of User IDs registered in this device.
[ <b>Farm</b> ]	Displays a list of Farm IDs registered in this device.



## Analysis and analysis results

The analysis results that you can check depend on the login type and status.

Status	Login type	Analysis results that you can check
Logged out	–	Analysis results without user ID password * Applies to all analysis results.
Logged in	User ID without password	• Analysis results without user ID password • Analysis results of the logged in User ID * Applies to all analysis results.
	User ID with password	• Analysis results without user ID password • Analysis results of the logged in User ID * Applies to all analysis results.
	admin	All analysis results

### Tip

You can also assign a User ID to analysis results from the logged out status later. For details, refer to [Edit analysis results](#).

### Tip

About the [**admin**] ID

- **admin** can check all analysis results.
- **admin** is registered by default.
- **admin** cannot be deleted.
- The default password is “admin”.

### Tip

Sharing this device with a number of people

If a number of people will use the device while logged out, logging in with User IDs is recommended because the analysis results will get mixed.

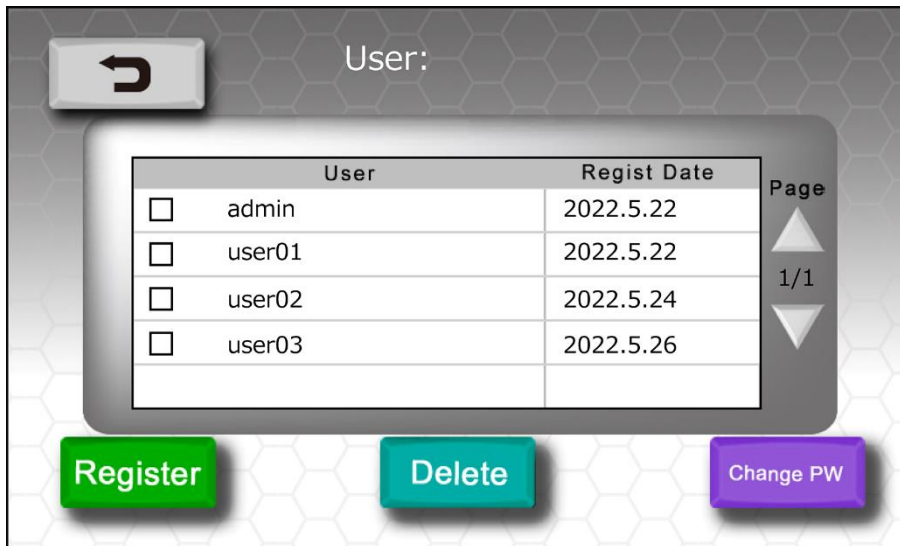
### Tip

If a User ID is set with a password, other users cannot view the analysis results.

## Manage User IDs

Manage User IDs.

### Screen description



Item	Description
[User]	Displays registered User IDs.
[Regist Date]	Displays the date when the User ID was registered.
[Register]	Registers a new User ID.
[Delete]	Deletes a registered User ID.
[Change PW]	You can do the following with User IDs. <ul style="list-style-type: none"><li>• Assign a new password</li><li>• Change a password</li><li>• Delete a password</li></ul>

## Register a new User ID

**1** Press [**User**].

**2** Press [**Register**].

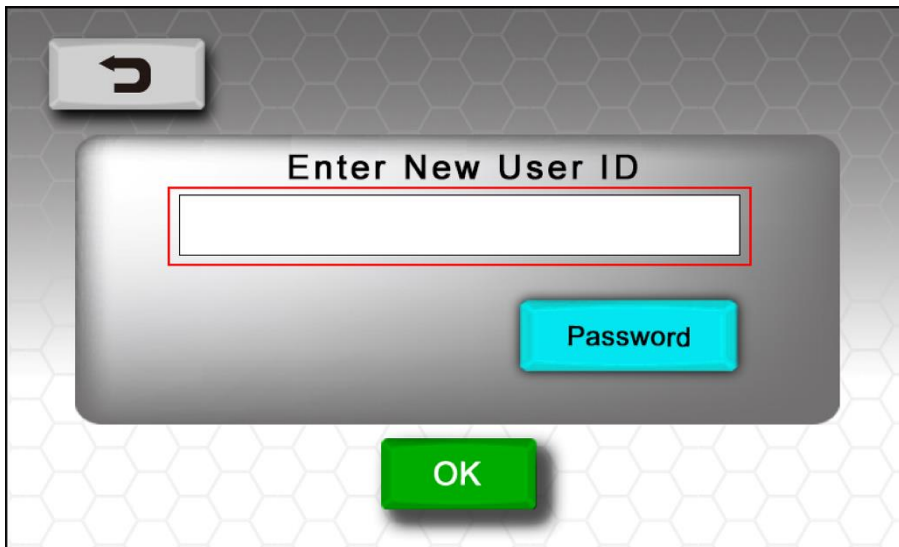
A User ID input screen is displayed.

→ Press the input field to display the keyboard. Input a User ID.

→ You can register up to 1000 User IDs in this device.

→ To assign a password to a User ID, input the User ID and then press [**Password**].

Follow the on-screen instructions to input your password.



**3** Press [**OK**].

## Delete a User ID

**1** Press [**User**].

**2** Select the desired User ID, and then press [**Delete**].

A message about deletion is displayed.

→ Follow the on-screen instructions.

→ To delete a User ID assigned with a password, you must input the password.

### Tip

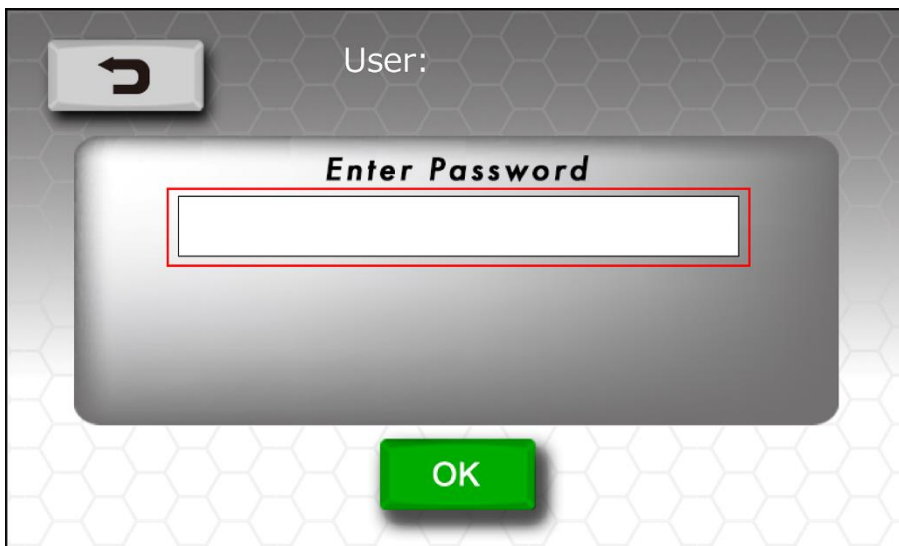
- Analysis results will not be deleted even if you delete a User ID.
- If you delete a User ID assigned with a password, other users will be able to check the analysis results.

## Assign a password to a User ID

- 1 Press [**User**].
- 2 Select the desired User ID, and then press [**Change PW**].  
A message about passwords is displayed.  
→ Follow the on-screen instructions.  
→ If the User ID is already assigned a password, you must input the current password.

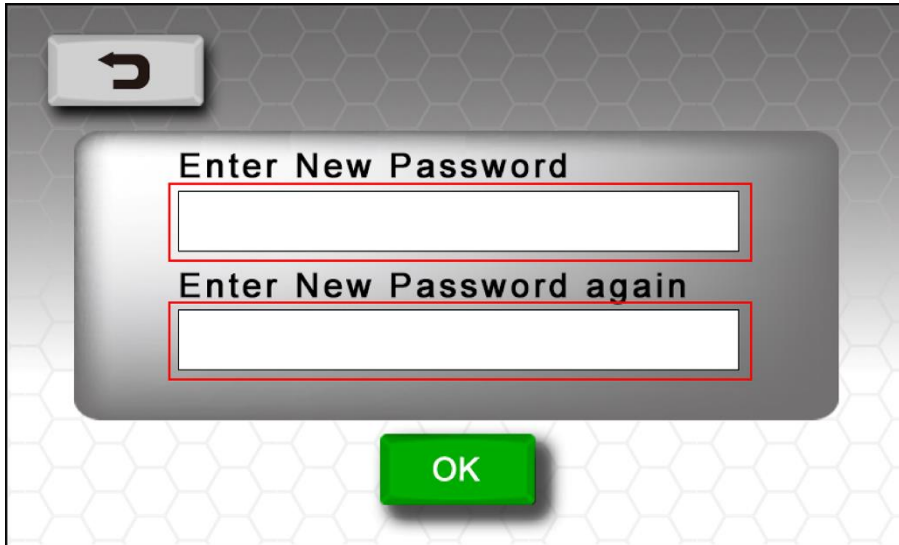
## Change a User ID password

- 1 Press [**User**].  
Select the desired User ID, and then press [**Change PW**].  
→ You must input the current password to change it.



- 2 Confirm the message, and then press [**OK**].

**3** Input a new password.

A screenshot of a password entry dialog box. The dialog has a grey background with a hexagonal pattern. In the top-left corner, there is a grey button with a curved arrow icon. The main area contains two text input fields, each with a red border. The first field is labeled "Enter New Password" and the second is labeled "Enter New Password again". Below the input fields is a green button with the text "OK".

**4** Press [**OK**].

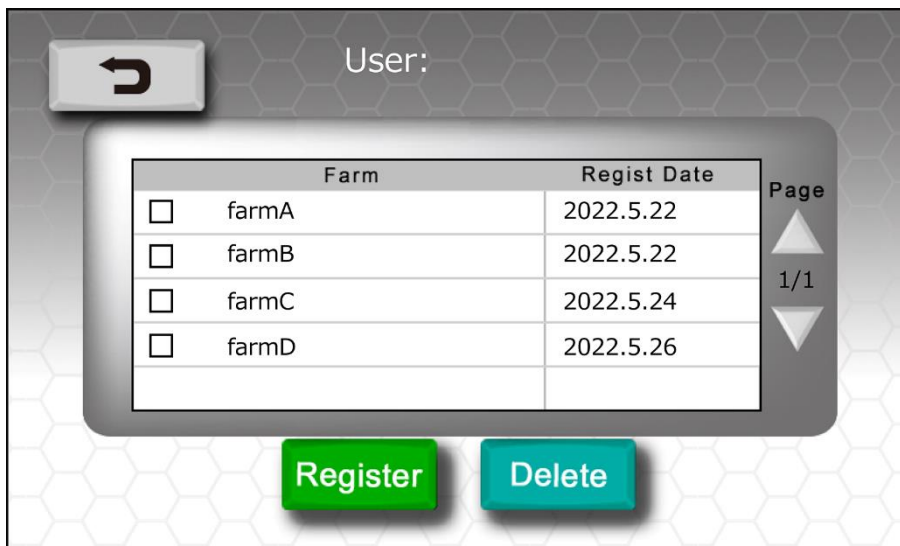
**Tip**

If you leave the password input field blank and press [**OK**], changes will be canceled.

## Manage Farm IDs

Manage Farm IDs.

### Screen description



Item	Description
[Farm]	Displays registered Farm IDs.
[Regist Date]	Displays the date when the Farm ID was registered.
[Register]	Registers a new Farm ID.
[Delete]	Deletes a registered Farm ID.

## Register a new Farm ID

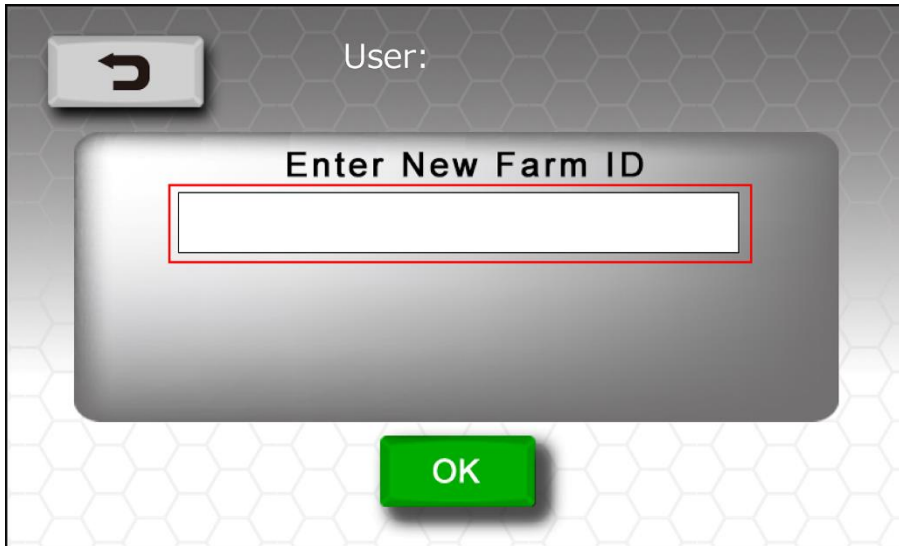
**1** Press [**Farm**].

**2** Press [**Register**].

A Farm ID input screen is displayed.

→ Press the input field to display the keyboard. Input a Farm ID.

→ You can register up to 1000 Farm IDs in this device.



**3** Press [**OK**].

## Delete a Farm ID

**1** Press [**Farm**].

**2** Select the Farm ID, and then press [**Delete**].

A message about deletion is displayed.

→ Follow the on-screen instructions.

### Tip

Analysis results will not be deleted even if you delete a Farm ID.

# Settings

## About settings

Configure basic and advanced settings when using this device.

Press [**Setting**] in the [**Home**] screen.

### Screen description





Item	Description	Related item
[ <b>User/Farm</b> ]	Manages IDs such as addition and deletion. For details about settings, refer to <a href="#">ID management</a> .	<a href="#">Log in to analyze</a>
[ <b>Analysis</b> ]	Sets the display units and the reference range for analysis results.	<a href="#">Check and save analysis results</a>
[ <b>Network</b> ]	Sets the IP address and network related settings of this device. For details about connections, refer to <a href="#">Advanced operations</a> .	<a href="#">Save to BoviMemo: send data directly</a>
[ <b>Language</b> ]	Sets the language displayed on this device's <b>touch screen</b> . You can set the language suited to your operating environment.	General operation
[ <b>System</b> ]	Check and set the following items.	
	•This device's system information	
	•Device reset	<a href="#">When disposing of this device or transferring it to another person</a>
	•Update the software of this device	<a href="#">Advanced operations</a>
[ <b>Machine</b> ]	Check and set the following items.	General operation
	• <b>Touch screen</b> brightness	
	•Volume of system and notification sounds	
	•This device's power off settings	
[ <b>Time</b> ]	Sets this device's date and time. The set date and time is saved in the analysis results. Set an accurate date and time to improve the accuracy of the analysis results.	General operation
[ <b>Plunger</b> ]	Used when removing the <b>plunger</b> .	Analysis

## [Analyte]

You can set the following.

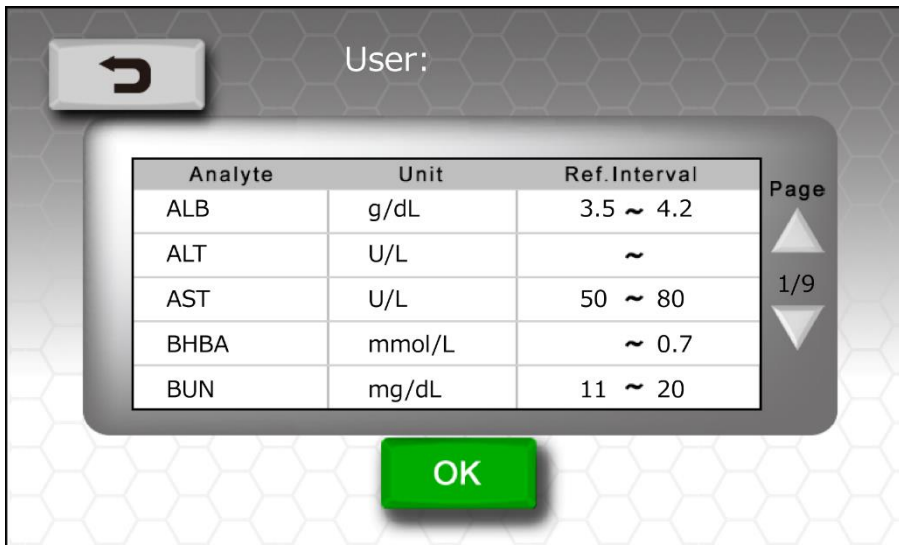
- [**Analyte**]: The analysis item selected in [**Analyte**] is displayed.
- [**Unit**]: Set the unit to be displayed for the analysis result.
- [**Ref. Interval**]: Set the appropriate range for analysis (4 digits from 0.001 to 9999).

1 Press [Analyte].

A list of settings is displayed.

→ The screen below is an example of [Ref. Interval] values.

→ Input reference values for [Ref. Interval].



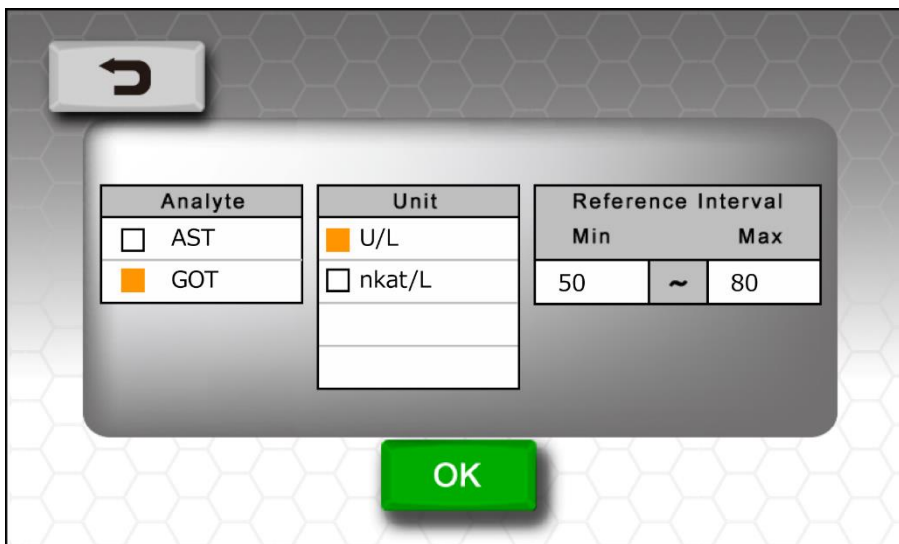
2 Select the desired item.

A setting screen is displayed.

→ [Analyte]: Select an analysis item.

→ [Unit]: Select a unit for the analysis result.

→ [Reference Interval]: Press the range setting field and input with the numeric keypad.



3 Press [OK].

## [Network]

Configure settings necessary to connect this device to a network.

- [**Wi-Fi**]: Connects this device to a network via Wi-Fi.
- [**Ethernet**]: Connects this device to a network via wired LAN.

### Tip

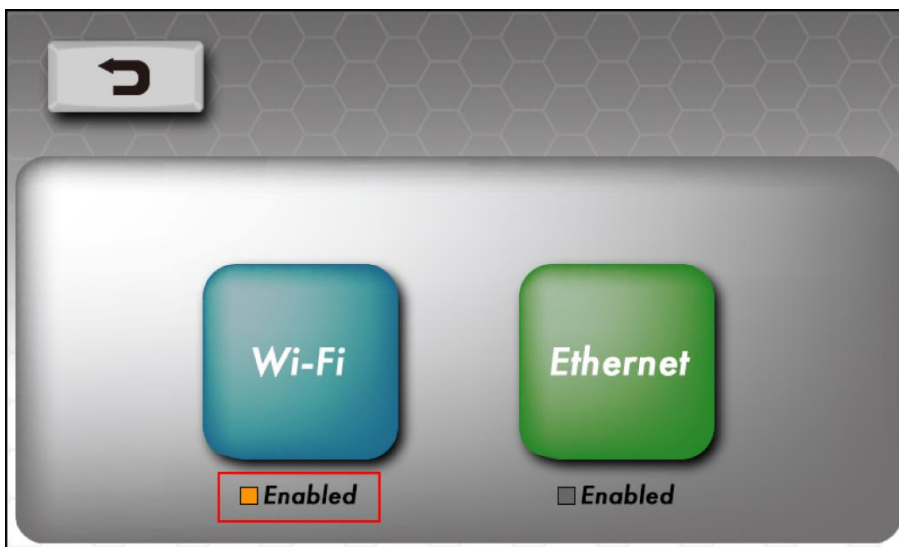
- For details about connecting with network devices, refer to [Connect an external device](#).

## Connect via Wi-Fi

- 1 Press [**Network**].

A connection type selection screen is displayed.

→ [**Enabled**]: Lights up in orange when pressed. You can change settings when it is on.



- 2 Press [**Wi-Fi**].

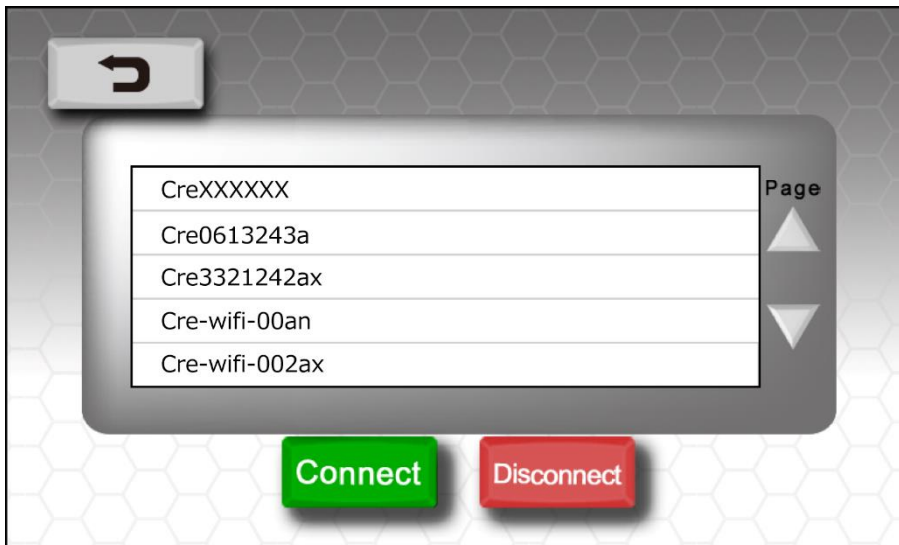
The [**Wi-Fi**] selection screen is displayed.

→ [**Access Point**]: Takes you to the Wi-Fi access point selection screen.

→ [**Property**]: Input TCP/IP directly. For details about input, refer to step 2 in [Connect via Ethernet](#).

**3** Press [**Access Point**].

An access point selection screen is displayed.



**4** Select an access point, and then press [**Connect**].

You will return to the [**Wi-Fi**] selection screen.

→ If the selected access point requires network security input, the keyboard is displayed.  
Input the security key.

**Tip**

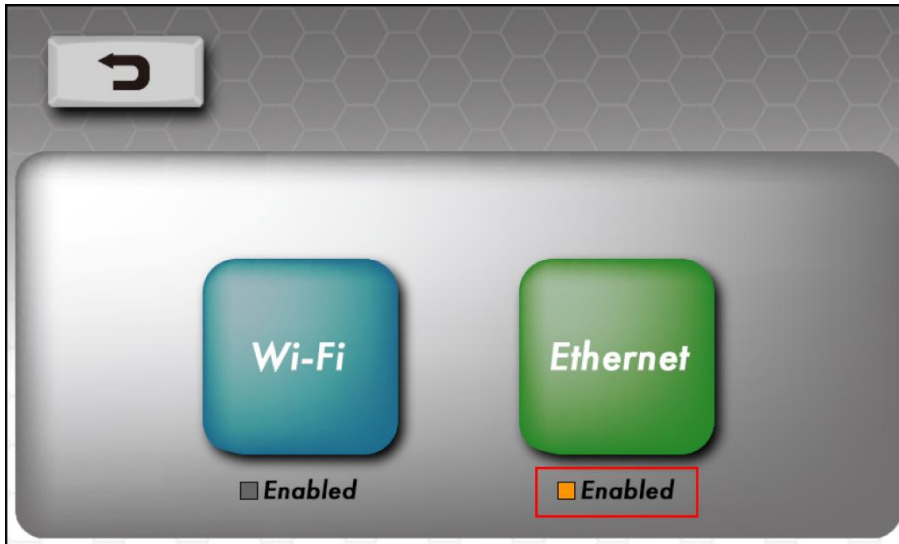
If you connect to an access point in step 4 and then press [**Property**], you can manually change the access point's network settings.

## Connect via Ethernet

- 1 Press [**Network**].

A connection type selection screen is displayed.

→ [**Enabled**]: Lights up in orange when pressed. You can change settings when it is on.



- 2 Press [**Ethernet**].

The TCP/IP input screen is displayed.

→ [**auto**]: Acquires network information automatically.

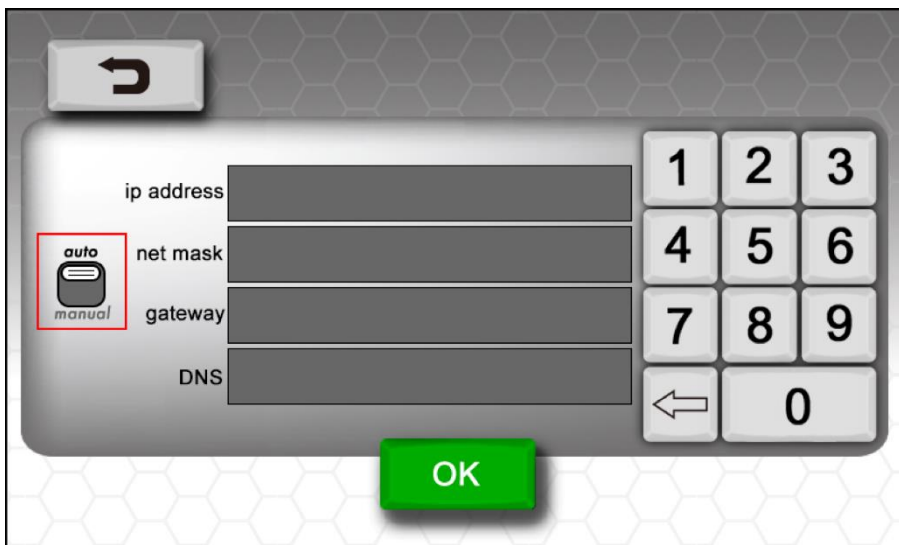
→ [**manual**]: Input network information manually. For direct input, switch to [**manual**].

→ [**ip address**]: Input an IP address directly with the numeric keypad.

→ [**net mask**]: Input a net mask directly with the numeric keypad.

→ [**gateway**]: Input a gateway directly with the numeric keypad.

→ [**DNS**]: Input a DNS directly with the numeric keypad.



- 3 Press [**OK**].

## [Language]

Sets the language displayed on this device's **touch screen**.

You can set the language suited to your operating environment.

→ [English]: Sets displayed messages to English.

→ [Japanese]: Sets displayed messages to Japanese.

**1** Press [Language].

A setting screen is displayed.

→ Set according to your operating environment.



**2** Press .

The selected language is set and you will return to the [Setting] screen.

## [System]

Check and operate the following for the device.

[Initialize] and [Update] are available only when logged in as [admin].

- [Information]: Displays information about the device, such as the software version.
- [Initialize]: Resets the device settings.
- [Update]: Updates the device software.

### Tip

[Update] requires one of the following conditions:

- The device is connected to the Internet
- USB memory with update software is connected to the device

## Connect via Wi-Fi

- 1 Press [System].

An item selection screen is displayed.

→ Select an item.



### If you selected [**Initialize**]

Follow the on-screen instructions.

The following information will be reset

- Analysis results
- Registered User/Farm information
- Slide usage history\*
- Values set in [**Reference Interval**]
- Wi-Fi registration information
- Bluetooth registration information
- admin ID password (reverts to the default password)
- Values set for [**LCD brightness**], [**Volume**], [**Power off time**], and [**Device preheating**] in [**Machine**]

\* Used to detect duplicate analyses.

### If you selected [**Update**]

A notification will be displayed based on the conditions for software update.

→ If the device is connected to the Internet

→ If USB memory with update software is connected to the device

#### Tip

If you press [**OK**] after the update is finishes successfully, then the device will restart.



## [Machine]

You can set the following:

- [LCD Brightness]: Sets the brightness of the touch screen.
- [Volume]: Sets the volume of system and notification sounds.
- [Power off Time]: Sets the power off setting of the device. If the device is not operated for the set time, then the device will turn off automatically.
- [Device preheating]: Temperature control operates when the **main power switch** is [ON]. If set [ON], then the device will start up faster when the **power button** is pressed.

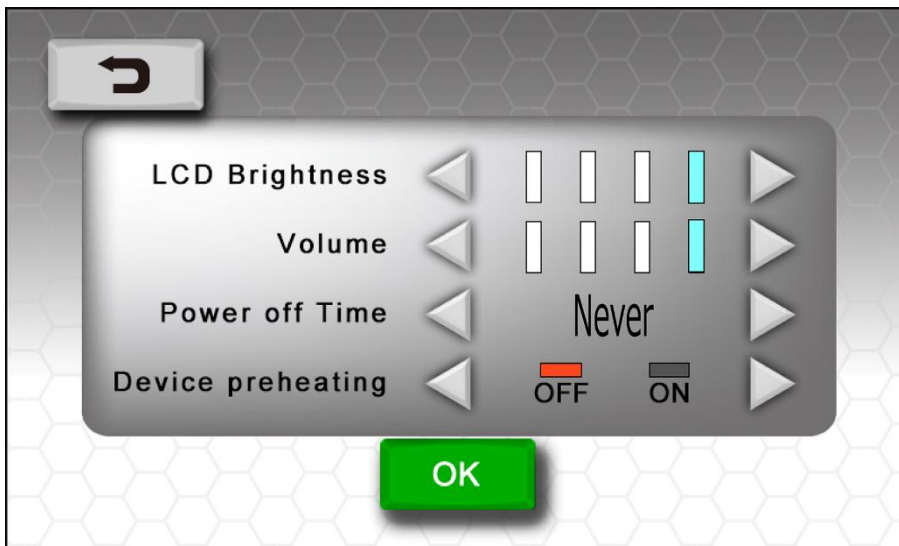
### 1 Press [Machine].

A setting screen is displayed.

→ Set according to your operating environment.

→ [Power off time]: Select [Never] (default), [1h], [3h], or [5h].

→ [Device preheating]: Select [OFF] (default) or [ON].



### 2 Press [OK].

## [Time]

Sets this device's date and time.

The set date and time is saved in the analysis results.

Sets an accurate date and time to improve the accuracy of the analysis results.

- [Date]: Set the current date.
- [Time]: Set the current time.

### Tip

The item under [Date]

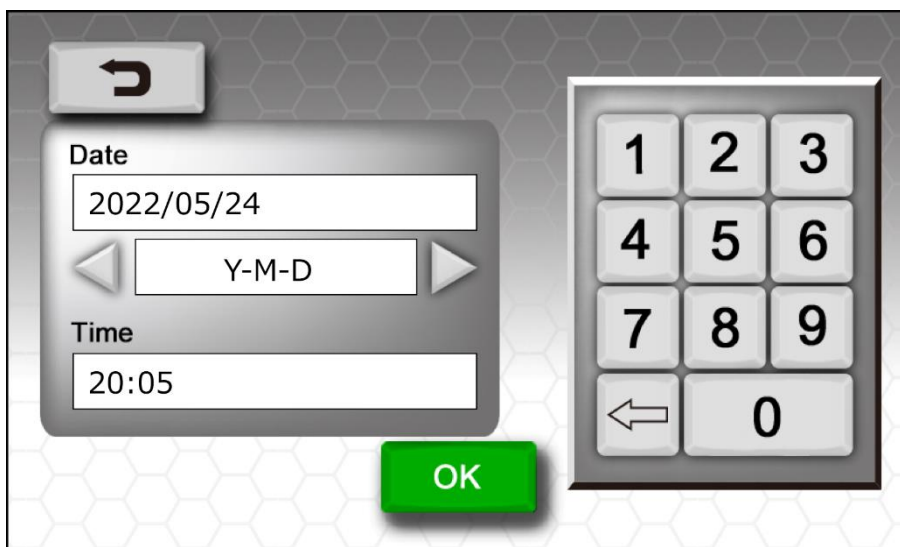
You can change the display order of the date as follows.

- [Y-M-D]: Year, Month, Day (default)
- [M-D-Y]: Month, Day, Year
- [D-Y-M]: Day, Year, Month

### 1 Press [Time].

A setting screen is displayed.

→ Set according to your operating environment.



### 2 Press [OK].

## [Plunger]

Used when removing the **plunger**.

- **Plunger** cleaning
- Replacing a worn or deteriorated **plunger**

**1** Press [**Plunger**].



A confirmation screen is displayed.


→ Follow the on-screen instructions.

### Important

Be sure to use [**Plunger**] when removing the **plunger**.

# Cleaning and storage

 <b>WARNING</b>	
	<b>Residues remained from the blood samples that are left on the plunger may cause an infection. Please wear gloves when handling the plunger.</b>

 <b>CAUTION</b>	Do not use highly corrosive chemicals such as benzene or acetone to clean the device because they may damage the device.
	Do not allow liquids to enter the device while cleaning. The internal parts may get damaged if liquids enter

## Daily cleaning

### Clean the plunger

Clean the **plunger** after each day of use.

- 1** Use [**System**].  
→ For details about [**System**], refer to [**Plunger**].
- 2** Open the **door** at the front of the device.
- 3** Remove the **plunger** from the **plunger arm**.
- 4** Gently wipe the **plunger** with a soft cloth moistened with 70% ethanol.  
→ Wipe off any residue.

#### Tip

If foreign matter such as dust gets on the **plunger**, then it may cause lower compressive performance and inaccurate results. Please remove all foreign matter from the **plunger**.

- 5** Wipe the **plunger** with a dry cloth.
- 6** Make sure that it is completely dry before attaching it to the **plunger arm**.

#### Important

If the **plunger** is not attached correctly, then the device may not be able to analyze correctly. Please attach the **plunger** to the **plunger arm** correctly for appropriate analysis results.

#### Tip

Replacing the **plunger** once a year is recommended, regardless of how frequent you use it.

Clean the QR code reader and LED window

The **QR code reader** scans QR codes on **BoviLab Slides** to acquire slide information. Always keep the **QR code reader** and **LED window** clean because if it is dirty, then you cannot scan QR codes properly and will cause errors.

- 1** Open the **door** at the front of the device.
- 2** Remove the **diffusion plate holder**.
- 3** Gently wipe the **QR code reader** and **LED window** with a soft cloth or cotton swab.

## Clean the main unit

If the surface of the device is dirty, then wipe off the dirt with a soft cloth.

When cleaning with water or detergent, wring the cloth firmly so that no excess liquid remains.

If the **touch screen** is dirty, then using a lens cleaner is recommended.

### Tip

- Use 70% ethanol, if necessary.
- When using 70% ethanol, apply it to a soft cloth and then wipe instead of applying directly onto the device.

## Maintain the slide inserting portal

If there is residue or contaminants in the **slide inserting portal** from the blood sample, then use a soft cloth to remove any contaminants.

### Tip

- Use 70% ethanol if necessary.
- When using 70% ethanol, apply it to a tissue and then wipe instead of applying directly onto the device.

## When storing the device

Make sure the device is clean when storing it.

Also, store it on a flat surface and away from any dust, moisture, chemical substances, flammable gas, and direct sunlight.

## When disposing of this device or transferring it to another person

If you will dispose of the device or transfer it to another person, please be sure to reset it to prevent any data leakage. For details about resetting, refer to [If you selected \[Initialize\]](#).

When disposing of it, please follow the rules for the disposal according to the local regulatory guidelines.

# Troubleshooting

## Before requesting repair

The device has a **main power switch** on the back and a **power button** on the side. The **power button** does not respond unless the **main power switch** is on.

If the device does not turn on when you press the **power button**, please make sure that the **main power switch** is on.

After checking the above, if the device does not turn on even when you press the **power button**, then please contact your distributor.

For the distributor's contact information, please refer to the back cover of the device.

## Error message list

Display	Solution	Location
The door is open.	Please close the <b>door</b> to continue.	Startup screen
The slide is already inserted.	Please open the <b>door</b> , remove the <b>BoviLab slide</b> , and close the <b>door</b> .	
The diffusion plate may not be set.	Press <b>OK</b> to shut down and turn off the <b>main power switch</b> . Make sure the <b>diffusion plate</b> is properly inserted. If the problem reoccurs after restarting, please contact the seller.	
The slide insertion port and/or the diffusion plate may be dirty.	Press <b>OK</b> to shut down and turn off the <b>main power switch</b> . Take out the <b>diffusion plate holder</b> and clean the <b>diffusion plate</b> . If the problem reoccurs after restarting, please contact the seller.	[Home] screen
This device is not connected to a network.	Please set the network connection. For details about settings, refer to <a href="#">[Network]</a> .	[Result] screen
Unable to send [B] out of [A] result data. Error code: E401	The software information has changed. Please update the software of the BoviLab to the latest version.	
Unable to send [B] out of [A] result data. Error code: E412	Please register the device serial number in your account on the support link.	
Unable to send [B] out of [A] result data. Error code: E429	The server is experiencing high traffic. Please resubmit again in a few minutes.	
Unable to send [B] out of [A] result data. Error code: E500	The server may be down or there may be a problem inside the server. Please contact the seller.	
Unable to send [B] out of [A] result data. Error code: E503	The network connection seems to be unstable. Please check the network environment and try again.	
Unable to save the data. Error code: E601	Check if the USB memory works properly; whether there is enough free space on the USB memory, it is damaged, and/or you are using an inappropriate USB memory with security functions.	

Incorrect security key.	Please enter the correct security key.	[Network] screen
The door is open.	Please close the <b>door</b> to continue.	[Analysis] screen
This slide has already been analyzed.	Please prepare and insert a new <b>BoviLab slide</b> .	
The slide insertion position is misaligned.	Please ensure the slide is aligned and reinsert the <b>BoviLab slide</b> .	
Failed to read the QR Code.	Clean the <b>QR Camera</b> and <b>LED Window</b> and reinsert the <b>BoviLab slide</b> . For details about cleaning, refer to <a href="#">Clean the QR code reader and LED window</a> .	
The QR Code could not be decrypted.	The version of the QR Code and the version of this unit are different. Please ensure that this unit is the latest version.	
Unable to detect the sample.	Clean the <b>plunger</b> and reattach to the <b>plunger arm</b> . Reinsert the <b>BoviLab slide</b> . For details about cleaning, refer to <a href="#">Clean the plunger</a> .	
Failed to reset to default setting. Error code: E602	Please reset from the beginning.	[System] screen
The version of the software in this USB memory is outdated and cannot be updated.	Please check the version of the software in the USB memory.	
Unable to download the software Error code: E603	Please download the software from the beginning.	
Failed to update Error code: E604	Please update from the beginning.	
Overcurrent is flowing through the USB. Error code: E101	Please eject the USB Device from the <b>USB port</b> .	All screens
The hardware is defective. Error code: E102	Press <b>OK</b> to shut down and turn off the <b>main power switch</b> . If the problem reoccurs after restating, press <b>OK</b> and shut down, take out the <b>AC Adaptor</b> and contact the seller.	
The board temperature is too high. Error code: E201 (The board temperature is too low. Error code: E211)	Press <b>OK</b> to shut down and turn off the <b>main power switch</b> . Restart at the specified temperature after about 30minutes. If the problem reoccurs after restarting, please contact the seller.	



<p>The heater temperature is too high. Error code: E202 (The heater temperature is too low. Error code: E212)</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b>. Restart at the specified temperature after about 30minutes. If the problem reoccurs after restarting, please contact the seller.</p>	<p>All screens</p>
<p>An abnormal temperature has been detected in the analyzing area. Error code: E203</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b>. Restart at the specified temperature.</p>	
<p>The hardware is defective. Error code: E301</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b> and turn on the switch again. If the problem reoccurs after restating, press <b>OK</b> and shut down, take out the <b>AC Adaptor</b> and contact the seller.</p>	
<p>The hardware is defective. Error code: E302</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b> and turn on the switch again. If the problem reoccurs after restating, press <b>OK</b> and shut down, take out the <b>AC Adaptor</b> and contact the seller.</p>	
<p>The hardware is defective. Error code: E303</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b> and turn on the switch again. If the problem reoccurs after restating, press <b>OK</b> and shut down, take out the <b>AC Adaptor</b> and contact the seller.</p>	
<p>The hardware is defective. Error code: E304</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b> and turn on the switch again. If the problem reoccurs after restating, press <b>OK</b> and shut down, take out the <b>AC Adaptor</b> and contact the seller.</p>	
<p>The hardware is defective. Error code: E305</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b> and turn on the switch again. If the problem reoccurs after restating, press <b>OK</b> and shut down, take out the <b>AC Adaptor</b> and contact the seller.</p>	
<p>The hardware is defective. Error code: E306</p>	<p>Press <b>OK</b> to shut down and turn off the <b>main power switch</b> and turn on the switch again. If the problem reoccurs after restating, press <b>OK</b> and shut down, take out the <b>AC Adaptor</b> and contact the seller.</p>	

# Other notifications

## Specifications

### Main unit specifications

Item		Specifications
Brand name		<b>BoviLab Blood analyzer</b>
OS		Linux 18.04
Dimensions	Width	150 mm
	Depth	168.7 mm
	Height	168.8 mm
Weight		2.2 kg
Power supply (AC adaptor rating)		DC 12V/24V (36W) DC jack input
Interface		USB 2.0 x3
Display		<b>Touch screen</b> (5-inch color LCD)
Controls		<b>Touch screen/main power switch/power button</b>
Display languages		English/Japanese

## System specifications

Item	Specifications
Photodetector for analysis	Monochrome CMOS sensor camera
Light source element for analysis	6 wavelength LED
Light source wavelengths for analysis	405/450/530/560/630/810 nm
Analysis part temperature control	Fixed at 37°C ± 0.1°C * The ambient temperature must be kept constant within 5°C to 32°C with a variation of ±2°C in a windless environment.
Number of simultaneous analyses	Up to 6 items
Analysis time	Analysis time of components + about 1 min.
Display items	Concentration of each blood component
Stored data	Up to 1000 items per user 1000 items without user ID * 1000 user registrations
Startup time	Within 2 minutes after startup Condition: Environmental temperature 5°C to 32°C

## Legal Information

### FCC Notice

#### CAUTION

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

#### 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.

## Trademarks

- Bluetooth is a trademark or registered trademark of Bluetooth SIG, Inc.
- Linux is a trademark or registered trademark of Linus Torvalds in the U.S. and other countries.
- QR code is a trademark or registered trademark of DENSO WAVE INCORPORATED.
- Wi-Fi is a trademark or registered trademark of the Wi-Fi Alliance.

## License Notification

You can find the full license on the distributor weblink.

## Limited Warranty

Before use, please register as a user on the link below. After registering as a user, then you can confirm the product warranty.

User registration: <https://bovilab.ib-holdings.com/register-device>

# For the distributor's contact information about the product

I.B Co., Ltd.

Address: 1-14-10 Ginza, Chuo-ku, Tokyo

URL: <https://ib-holdings.com/en/bovilab-support/>

## **For inquiries:**

Please contact the distributor from which you purchased the product.

## Links

• Website:

<https://ib-holdings.com/en/>

• BoviMemo Login page:

<https://bovilab.ib-holdings.com/login>

• Support page:

<https://ib-holdings.com/en/bovilab-support/>

• User registration:

<https://bovilab.ib-holdings.com/register-device>

• Registration rules:

<https://ib-holdings.com/en/user-registration-terms/>

• Privacy policy:

<https://ib-holdings.com/en/privacy/>

I.B Co., Ltd.

1-14-10 Ginza, Chuo-ku, Tokyo 104-0061