



Automated Hematology Analyzer
XN-L series

XN-550/XN-450 /XN-350

Basic Operation

Read this manual to operate the instrument.
The explanations in this manual assume that you have already read "General Information".

The following manuals are provided as Instructions for Use:

- General Information
 - Basic Operation
 - Troubleshooting
-
-

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Changes are listed below:

Revised section	Page
1.8.1 Control menu	23
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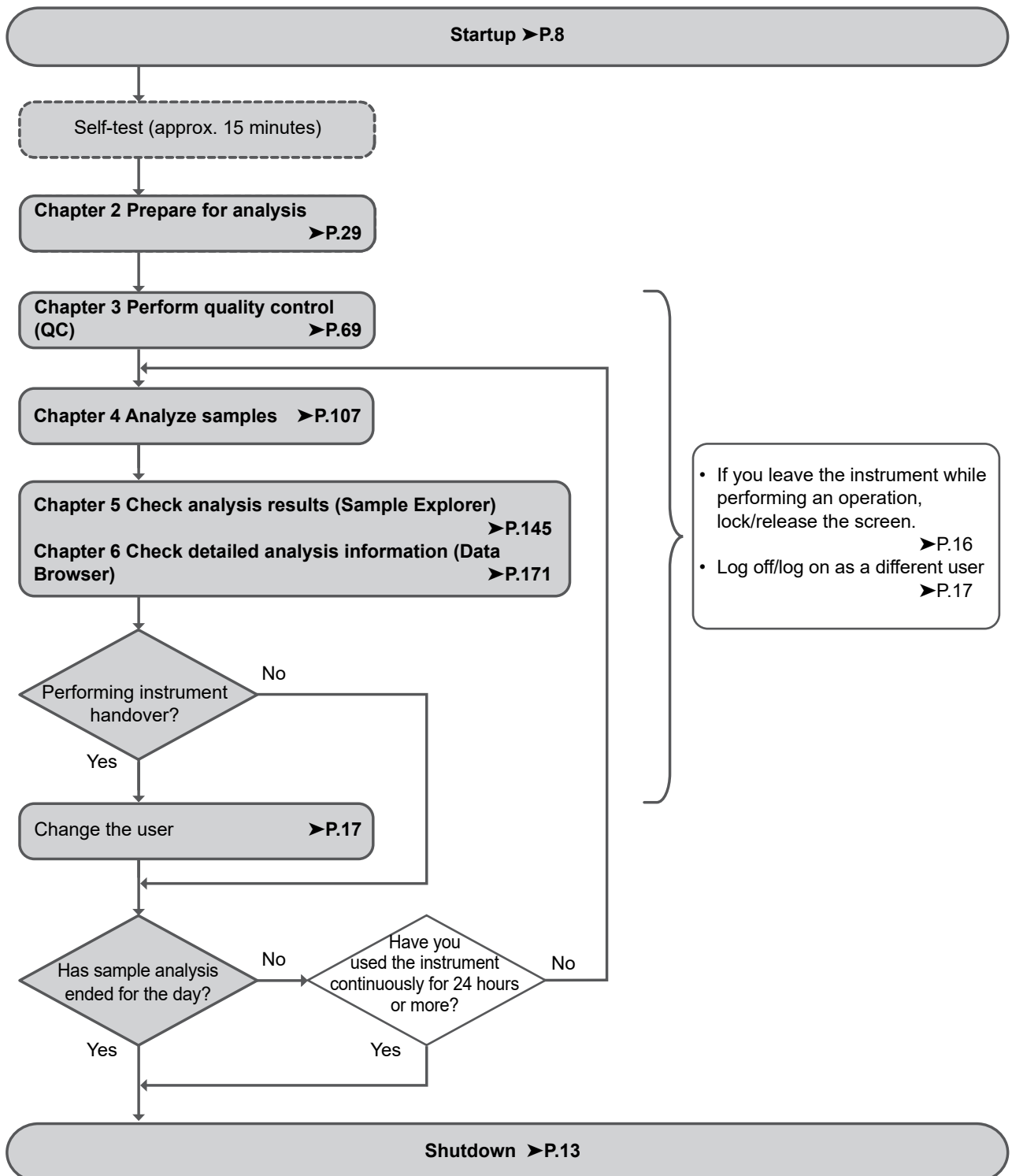
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Chapter 1 Basic Operation

1.1 Overall flow of operation

The flow chart below shows the sequence of operation of the instrument. The typical flow is shown in gray.



1.2 Startup

1.2.1 Inspection prior to turning ON the power

Before turning ON the instrument power, check the following.

● Instrument inspection

- Check tube and cable connections.
- Check if there are any bent tubes.
- Check if there are any objects on the instrument.
- When connected to a network, make sure that the network devices (hubs and network converters) are all powered ON.
- Discard any waste fluid in the waste container (if applicable).

● Reagent inspection

Make sure there is a sufficient supply of reagents for the number of samples to be processed that day. Reagent amounts needed vary by analysis mode. Ready a supply that is slightly greater than the amount you think you will need that day.

If a reagent runs out during analysis, the instrument will automatically stop. Replace the reagent. Analysis cannot be resumed until replacement finishes.

Volume of reagent used per analyzed sample (in continuous analysis)

The list below shows examples. For details, please contact your local Sysmex representative.

Reagent	[Whole Blood] mode			[Body Fluid] mode*
	CBC	CBC+DIFF	CBC+DIFF+RET*	CBC+DIFF
CELLPACK DCL	Approx. 33.0 mL	Approx. 33.0 mL	Approx. 46.0 mL	Approx. 36.0 mL
SULFOLYSER	Approx. 0.5 mL	Approx. 0.5 mL	Approx. 0.5 mL	-
Lysercell WDF	Approx. 2.0 mL	Approx. 2.0 mL	Approx. 3.0 mL	Approx. 2.0 mL
Fluorocell WDF	-	Approx. 20 µL	Approx. 20 µL	Approx. 20 µL
CELLPACK DFL	-	-	Approx. 2.0 mL	-
Fluorocell RET	-	-	Approx. 20 µL	-
Total volume of reagent	Approx. 35.0 mL	Approx. 35.0 mL	Approx. 51.0 mL	Approx. 38.0 mL

* The availability of analysis function depends on your system configuration.

Others

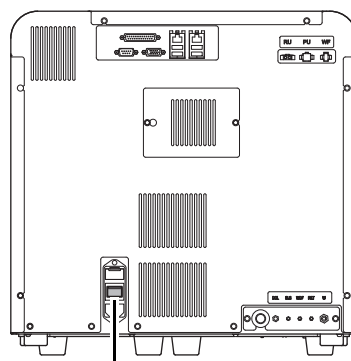
	CELLPACK DCL	SULFO LYSER	Lysercell WDF	Fluorocell WDF	CELLPACK DFL	Fluorocell RET	Total volume of reagent
Startup (When starting up within one hour of the previous shutdown. Includes one background check.)	Approx. 141.0 mL	Approx. 1.0 mL	Approx. 6.0 mL	Approx. 40 µL	Approx. 4.0 mL	Approx. 40 µL	Approx. 152.1 mL
Startup (When starting up after one hour of the previous shutdown. Includes one background check.)	Approx. 187.0 mL	Approx. 1.5 mL	Approx. 9.0 mL	Approx. 60 µL	Approx. 6.0 mL	Approx. 60 µL	Approx. 203.6 mL
Shutdown	Approx. 15.0 mL	-	-	-	-	-	Approx. 15.0 mL
Routine cleaning	Approx. 62.0 mL	-	-	-	-	-	Approx. 62.0 mL

1.2.2 Turning ON the power

Follow the steps below to turn ON the instrument power.

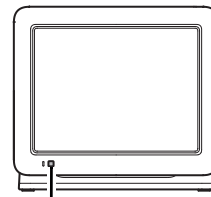
1 Make sure that the main power switches of the instrument and connected devices are in the ON position.

The main power switch of the analyzer can be kept ON.



Main power switch

Analyzer (Common)

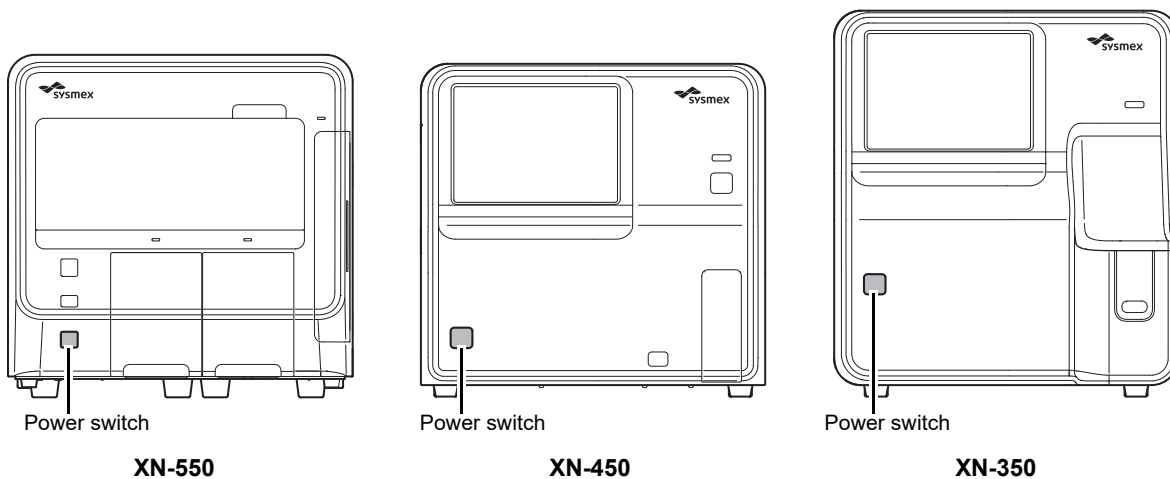


Power switch

Monitor (XN-550)

2 Press the power switch.

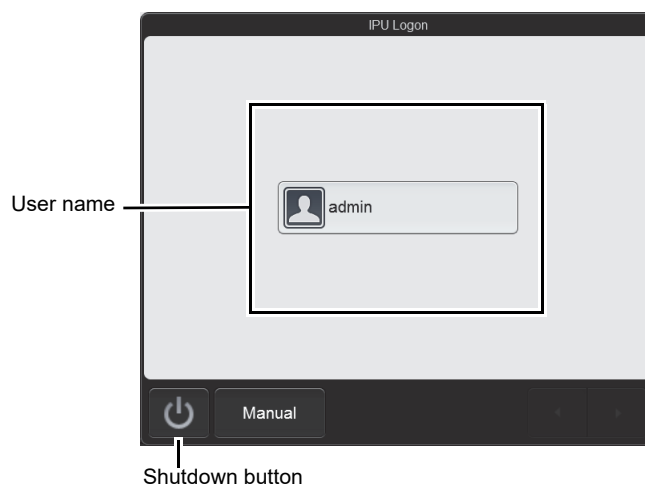
The instrument power turns ON and the analyzer runs a self-test. (►P.12 "1.2.3 Executing a self-test")



Note:

If an error occurs (for example a reagent runs out) during startup, the operator must log on to the instrument to resolve the error.

The [IPU Logon] dialog box appears.



[IPU Logon] dialog box



Information

In the factory default state, the only user name that appears is [admin] (instrument administrator). The factory default password for [admin] (instrument administrator) is "m145m". The administrator should log on as the [admin] and promptly register the users of the instrument and set their permissions. In addition, change the [admin] password. For details, see Chapter 7. (►P.217 "Chapter 7: 7.8.1 User information management (user registration)")

**Note:**

- If [Auto Logon] is enabled, the [IPU Logon] dialog box does not appear.
- Display of user names varies depending on the number of users.
- Touch the shutdown button to shut down the instrument.
- Touch [Manual] to display the dialog box to directly enter characters instead of selecting a user name.

3 Touch the name of the user to be logged on.

The software keyboard appears.

To select a different user, touch [Cancel] to return to the [IPU Logon] dialog box of step 2.

4 Enter the password and touch [OK].

For the software keyboard operation, see the following.

(▶P.20 "1.7 Buttons common to multiple screens")

The [Menu] screen appears in the environment of the logged on user.

For the [Menu] screen, see the following.

(▶P.24 "1.8.2 [Menu] screen")

1.2.3 Executing a self-test

When the instrument power turns ON, a self-test automatically runs for approx. 15 minutes to verify that there are no abnormalities in the instrument. The self-test consists of the following tasks.

● Initializing the mechanical parts

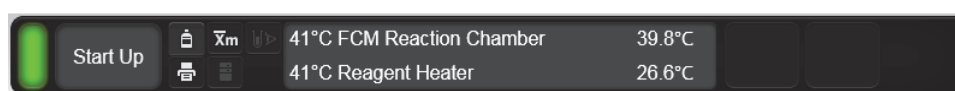
The mechanical parts move to their initial positions, and the hydraulic parts are initialized and checked.

● Rinsing hydraulic parts

Rinsing is performed 1 to 2 times, depending on how much time has elapsed since the previous rinsing.

● Waiting for temperature stabilization

The temperature status of each unit appears in the center of the control menu (bottom of screen) while the temperature stabilizes. When the temperature stabilizes, this display is cleared.



Units and specified temperature

Units	Target temperature
[41°C FCM Reaction Chamber]	41°C
[41°C Reagent Heater]	Varies depending on the air temperature

● Background check

Analysis is performed without sample aspiration to check the effectiveness of rinsing. This is repeated up to 3 times. The analysis results can be checked in the [Data Browser] screen and [Sample Explorer] screen. The background check data is displayed in [BACKGROUNDCHECK] of the sample number. An analysis value that is not within the allowable range is marked with [!].

Background check parameters and background limits

Checked parameters	Background limits	Remarks
WBC-C ^{*1}	0.30 x 10 ³ /μL or less	The white blood cell count measured from the forward scattered light and the side scattered light of the WDF channel
WBC-D ^{*2}	0.10 x 10 ³ /μL or less	The white blood cell count measured from the WDF channel
RBC	0.02 x 10 ⁶ /μL or less	The red blood cell count measured from the RBC/PLT channel
HGB	0.1 g/dL or less	-
PLT-I ^{*3}	10 x 10 ³ /μL or less	The platelet count measured from the RBC/PLT channel (PLT distribution)
PLT-O ^{*1}	10 x 10 ³ /μL or less	The platelet count measured from the RET channel

*1 This is not displayed in the analysis results.

*2 Displayed as [WBC] in the analysis results.

*3 Displayed as [PLT] in the analysis results.

If the background check results are not within the allowable range after 3 analyses, a background check error occurs. See "Troubleshooting". (►Troubleshooting, "Chapter 1: 1.1 Error message list (in alphabetical order)")

1.3 Shutdown

Shutdown consists of turning OFF the instrument power.

When you finish analysis work for the day, always perform shutdown. If analysis work will continue more than 1 day, perform shutdown once a day.

Follow the steps below to perform shutdown.

1 Make sure the instrument is in the ready state.

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

2 Make sure that no sample tube remains in the sample tube holder. (XN-550/XN-450)

On the XN-350, this step is not necessary. Go to step 3.

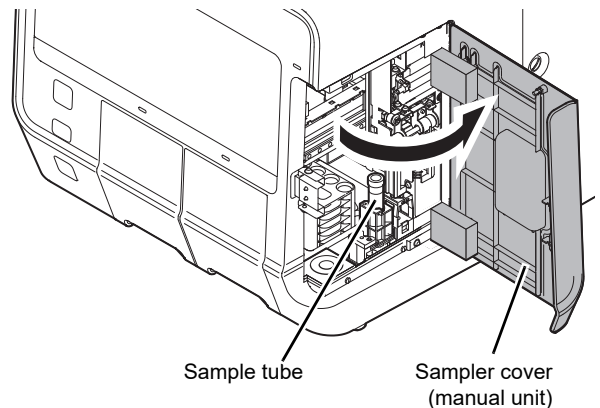


Information

The sample tube holder retracts immediately before the power turns OFF. The sample tube in the sample tube holder cannot be removed while the power is OFF.

● XN-550

1 Open the sampler cover (manual unit).



2 If a sample tube remains, remove it.

3 Close the sampler cover (manual unit).

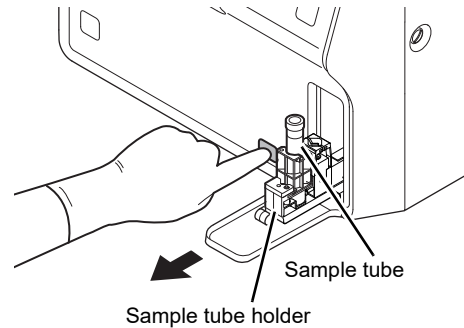


Note:

If a sample tube remains in the sampler adapter holder, remove it.

● **XN-450**

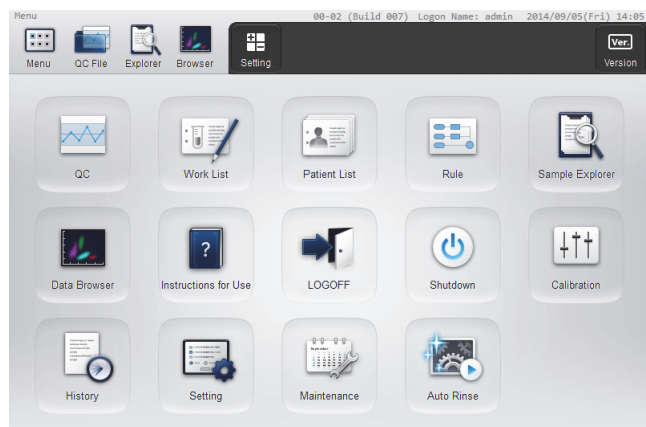
- 1 If the sample tube holder is not ejected, press the sample tube holder open/close switch.**



- 2 If a sample tube remains, remove it.**

- 3 Touch the [Menu] button on the toolbar.**

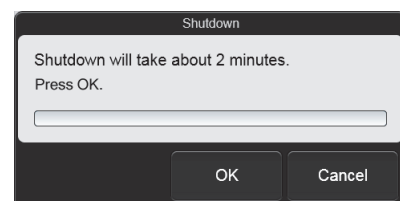
The [Menu] screen appears.



[Menu] screen

- 4 Touch the [Shutdown] icon.**

The [Shutdown] dialog box appears.



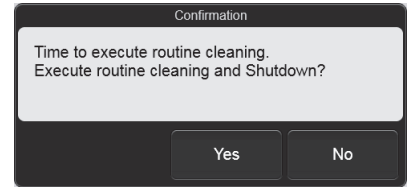
[Shutdown] dialog box

**Note:**

If routine cleaning has not been performed for more than a week, the dialog box on the right appears. Touch [Yes] to execute routine cleaning.

For the routine cleaning procedure, see "Troubleshooting".

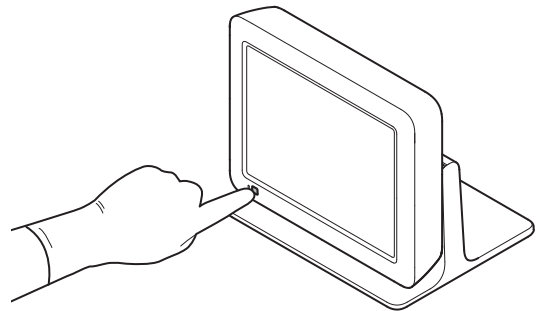
- XN-550
 (▶ Troubleshooting, "Chapter 2: 2.4 Executing routine cleaning (XN-550)" Step 4 and following steps)
- XN-450
 (▶ Troubleshooting, "Chapter 2: 2.5 Executing routine cleaning (XN-450)" Step 4 and following steps)
- XN-350
 (▶ Troubleshooting, "Chapter 2: 2.6 Executing routine cleaning (XN-350)" Step 4 and following steps)

**5 Touch [OK].**

The instrument power automatically turns OFF.

6 Turn the power of the monitor OFF. (XN-550)

Press the power switch of the monitor to turn the power OFF.



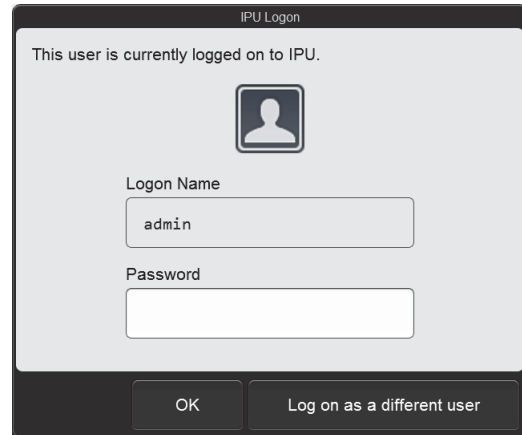
1.4 Screen lock

This function is used to prevent others from using the instrument when the operator leaves the instrument. When the touchscreen is not used for the specified time, the screen lock function automatically activates and puts the instrument in the state below.

- The screen changes to the [Menu] screen.
- The dialog box on the right appears.
- Switches on the analyzer cannot be operated.

For the screen lock function settings, see Chapter 7.

(►P.234 "Chapter 7: 7.9.3 Security settings")



Information

If a dialog box appears, the screen lock function does not activate after the specified time elapses.

1.4.1 Releasing the screen

Follow the steps below to release the screen.

1 Touch the [Password] field.

The software keyboard appears.

2 Enter the password and touch [OK].

3 Touch [OK].

The screen is released.



Note:

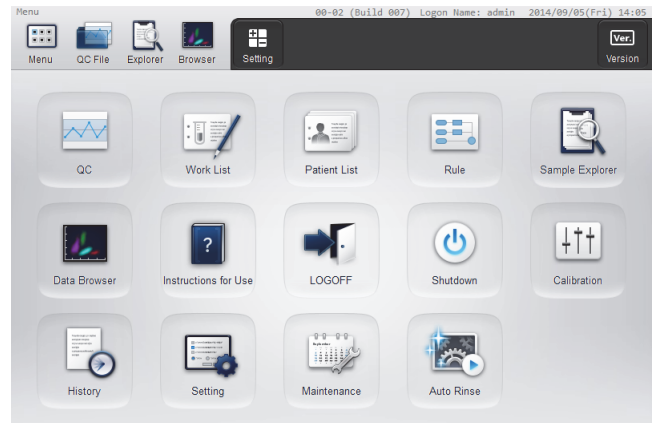
To log off and then log on as a different user, touch [Log on as a different user].

1.5 Logging off

To change the logged on user, follow the steps below to log off.

1 Touch the [Menu] button on the toolbar.

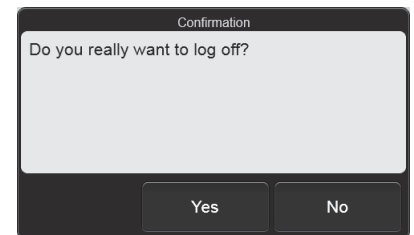
The [Menu] screen appears.



[Menu] screen

2 Touch the [LOGOFF] icon.

The dialog box on the right appears.



3 Touch [Yes].

The currently logged on user is logged off.

After logoff, the [IPU Logon] dialog box appears. (►P.9 "1.2.2 Turning ON the power")



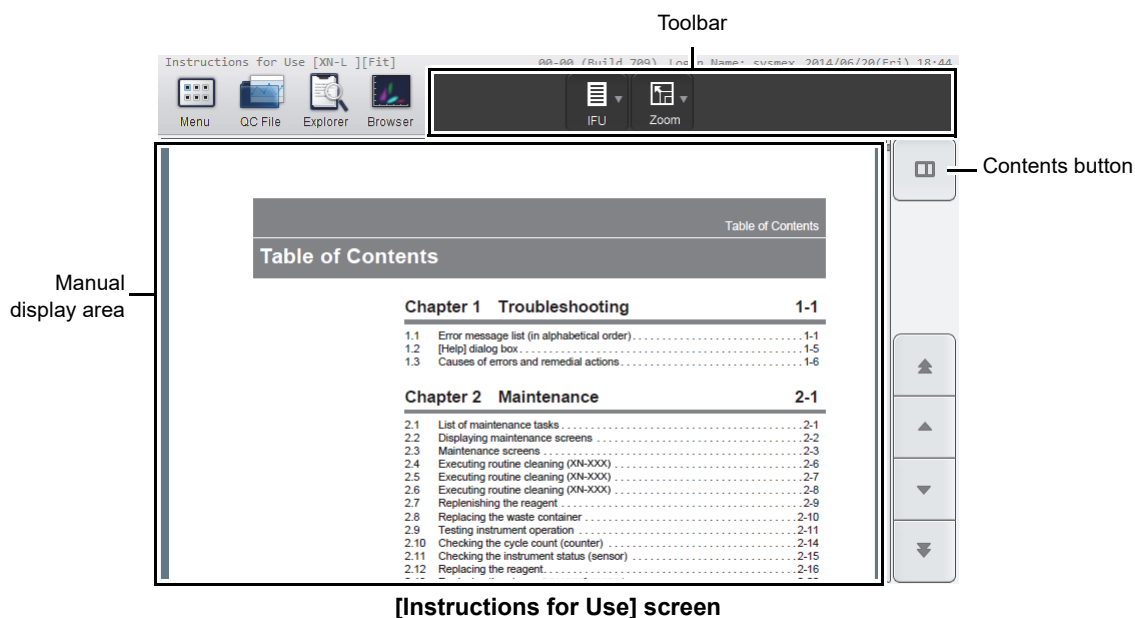
Note:

Logoff cannot be executed when the instrument is running.

1.6 Viewing the online manuals

To enable quick access to information, the online manuals can be viewed.

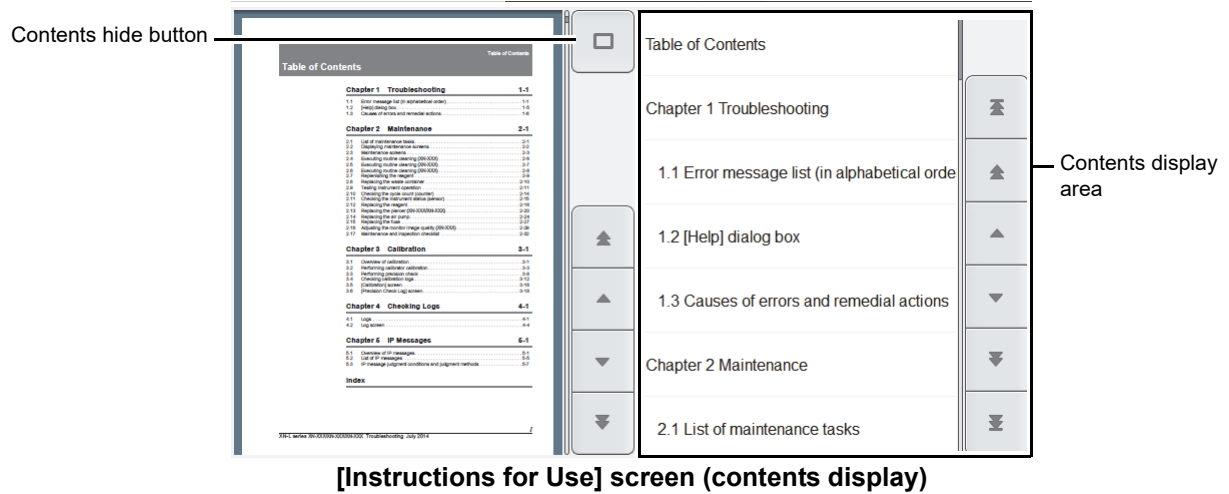
Touch the [Instructions for Use] icon in the [Menu] screen to display the [Instructions for Use] screen.



[Instructions for Use] screen

Toolbar	Displays the function buttons.
[IFU]	Touch to open a submenu that allows you to change the manuals to be displayed. The type of the manual currently displayed appears next to the screen name in the upper left corner of the screen.
[Zoom]	Touch to open a submenu that allows you to change the zoom for viewing manuals. [Fit]: Fits the page width to the width of the manual display area. [100%]: Displays the manual at a zoom of 100%. [75%]: Displays the manual at a zoom of 75%. [50%]: Displays the manual at a zoom of 50%. The current zoom is shown next to the manual type in the top left corner of the screen.
Manual display area	Displays the manual.
Contents button	Touch to display the contents display area. (▶P.19 "● Manual contents display")

● Manual contents display











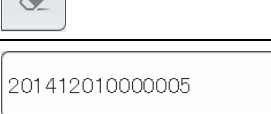
[Instructions for Use] screen (contents display)

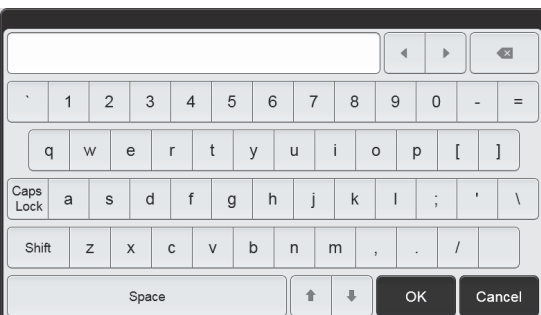
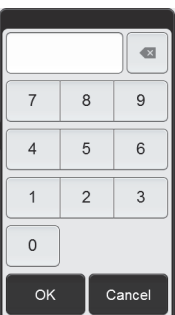
Contents hide button Touch to hide the contents display area.

Contents display area Displays the contents of the displayed manual.
Touch the title to display the corresponding page of the manual.

1.7 Buttons common to multiple screens

Several screens of the instrument have the same buttons.
The functions of these buttons are explained below.

Button	Function
	Touch to change the screen to the left or right page.
	Touch to move the selected part of a list or the cursor left or right.
	Touch to move the selected part of a list or the cursor all the way to the left or to the right.
	Touch to change the screen to the upper or lower page.
	Touch to move the selected part of a list or the cursor up or down.
	Touch to move the selected part of a list or the cursor to the top line or the bottom line.
	Touch to open a calendar that allows you to select a date.
	Touch to reset entered content.
	Touch an entry field to display a software keyboard or numeric keypad that allows you to enter characters or numbers.

1.8 Main screen

The main screen layout is as follows.

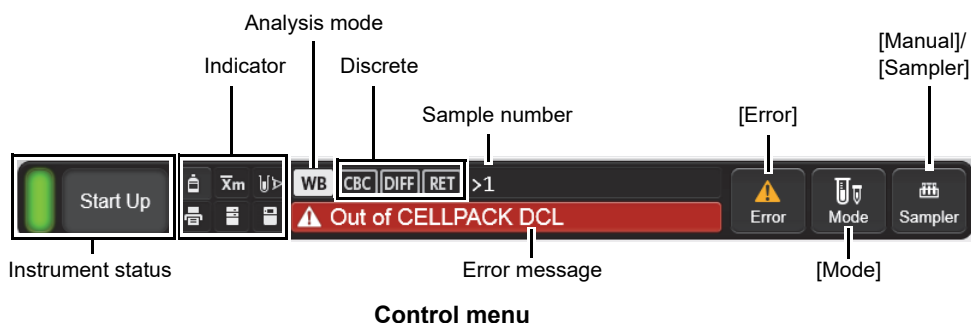


Example: [Menu] screen

Toolbar (fixed)	The following frequently-used function buttons are always displayed.
[Menu]	Touch to display the [Menu] screen. (▶P.24 "1.8.2 [Menu] screen")
[QC file]	Touch to display the [QC File] screen. (▶P.98 "Chapter 3: 3.11 [QC File] screen")
[Explorer]	Touch to display the [Sample Explorer] screen. (▶P.161 "Chapter 5: 5.11 [Sample Explorer] screen")
[Browser]	Touch to display the [Data Browser] screen. (▶P.173 "Chapter 6: 6.3 [Data Browser] screen")
Toolbar (variable)	The buttons that appear depend on the screen that is displayed.
Window (view)	Various tasks are performed and analysis results appear in this area. In the initial state, the [Menu] screen appears.
Control menu	Shows the status of the instrument. Analysis, maintenance, or other tasks are performed. (▶P.22 "1.8.1 Control menu")

1.8.1 Control menu

The layout of the control menu is as follows.



Instrument status

Displays the status of the instrument with colors and messages.

The indicated colors have the following meanings.

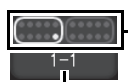
- Green/Orange* : Ready (for analysis) state
- Green/Orange blinking* : The instrument is starting up, analyzing, changing analysis modes, or shutting down.
- Green: Waiting to execute maintenance
- Green blinking: Executing maintenance
- Red: Error (alarm does not sound), initializing system, emergency stop, inactive
- Red blinking: Error (alarm sounds)

* Green in normal conditions, orange when an error that does not require stopping occurs.

Messages are displayed as follows according to the status of the instrument.

- Starting up: [Start Up]
- Shutting down: [Shutdown]
- During maintenance: [Maintenance]

For the sampler analysis mode on the XN-550, the following is shown in addition to the above.












The starting sample tube position of the next analysis is shown visually. The rectangle with rounded corners shows the sampler adapter, and the position is indicated by a white circle.

The starting sample tube position (adapter number and sample tube position) of the next analysis is shown.

Indicator

The status of the instrument is indicated by icons.

	Reagent status	Displays the status of the reagents connected to the instrument. Becomes red if any one of the connected reagents has run out. Touch to display the [Reagent Replacement] dialog box.
	Xm status	This icon appears when X-barM is ON.
	Aspiration sensor status	This icon appears when the aspiration sensor is ON.
	Printer status	Displays the printer status. The indicated colors have the following meanings. Green: Connected Red: Printing not possible

	Host computer status	Displays the status of the host computer connected to the instrument. Becomes orange blinking if a connection error occurs when the instrument is set to connect to the host computer. Becomes gray if the instrument is set to not connect to the host computer.
	RU status	Shows the status of the RU-20. Becomes red if an error occurs in the RU-20. Becomes gray if the instrument is set to not connect to the RU.
Analysis mode		Displays the selected analysis mode. [WB]: Whole Blood mode, [LW]: Low WBC mode, [PD]: Pre-Dilution mode, [BF]: Body Fluid mode
Discrete		Displays the selected discrete. However, this does not appear when the analysis mode is [BF].
Sample number		Displays the sample number. When [>] appears at the beginning of the sample number, the next sample can be aspirated. If the sample number was not successfully read, or if the sample number has not been entered manually, a message is displayed prompting you to input the number.
Error message		Displays the highest priority error among all current errors. The displayed error is categorized as one of the following error types. Orange background/black text: Caution Red background/white text: Warning Non-urgent information such as notices appear in white text.
[Error]		This appears when there is an error. Touch to display the [Help] dialog box.
[Mode]^{*1}		Touch to select the analysis mode. The [Change Measurement Mode] dialog box appears.
[Manual]/[Sampler]		Varies depending on the analysis method (manual analysis or sampler analysis ^{*2}) and the [Cap Open] ^{*3} setting in the [Manual Analysis] dialog box.  : Displayed when [Cap Open] is OFF in manual analysis mode.  : Displayed when [Cap Open] is ON in manual analysis mode.  : Displayed in sampler analysis mode. Touch to register sample information and the analysis method for a sample to be analyzed. When touched, the [Manual Analysis] dialog box or [Sampler Analysis] dialog box (when using sampler analysis mode on the XN-550) appears.

*1 This button does not appear in the sampler analysis mode on the XN-550.

*2 XN-550 only.

*3 [Cap Open] is used to specify whether analysis is performed with the sample tube cap open. On the XN-350, [Cap Open] is always ON.

1.8.2 [Menu] screen

Start up the instrument and log on, then the [Menu] screen appears.

Touch an icon* displayed in the window to execute the associated function.



[Menu] screen

* The icon that appears vary depending on the logged on user permissions.

Toolbar	The icons of each function are displayed.
[Setting]	Touch to show or hide the icons displayed in the [Menu] screen window. (▶P.26 "● Hiding icons in the [Menu] screen") The icons which are hid in the [Menu] screen do not appear on the toolbar.
[Version]	Touch to check the version of the instrument. (▶P.26 "● Checking the version")
Function category	Touch an icon to execute the associated function.
[QC]*	Touch to execute QC. Touch to display the [QC] menu screen. There are 3 icons in the window of the [QC] menu screen. For the functions selected with these icons, see the following. [QC analysis]: Touch to execute QC analysis. (▶P.77 "Chapter 3: 3.6 Performing QC analysis") [X-barM Setting]: Touch to turn X-barM control ON or OFF. (▶P.91 "Chapter 3: 3.9 Switching X-barM control ON/OFF") [QC File]: Touch to check the QC analysis results or manage QC files. (▶P.86 "Chapter 3: 3.7 Checking analysis results")
[Work List]	Touch to register an analysis order. (▶P.30 "Chapter 2: 2.2 Registering analysis orders (analysis registration)")

[Patient List]*	Touch to register patient, doctor, or ward information. (▶P.40 "Chapter 2: 2.3 Registering patient, doctor, or ward information (patient registration)")
[Rule]	Touch to set the rules. (▶P.249 "Chapter 7: 7.11 Rule settings")
[Sample Explorer]	Touch to check the analysis results. (▶P.146 "Chapter 5: 5.2 Checking analysis results")
[Data Browser]	Touch to check the details of analysis results. (▶P.172 "Chapter 6: 6.2 Checking detailed analysis information")
[Instructions for Use]	Touch to view the online manuals. (▶P.18 "1.6 Viewing the online manuals")
[LOGOFF]	Touch to change the logged on user. (▶P.17 "1.5 Logging off")
[Shutdown]	Touch to finish the operation of the instrument. (▶P.13 "1.3 Shutdown")
[Calibration]*	Touch to execute the calibration. (▶Troubleshooting, "Chapter 3: Calibration")
[History]*	Touch to check the history of the instrument. (▶Troubleshooting, "Chapter 4: Checking Logs")
[Setting]*	Touch to change the settings of the instrument. (▶P.188 "Chapter 7: 7.2 Changing instrument settings")
[Maintenance]*	Touch to execute the maintenance of the instrument. (▶Troubleshooting, "Chapter 2: 2.2 Displaying maintenance screens")
[Auto Rinse]	Touch to rinse the hydraulics of the instrument.

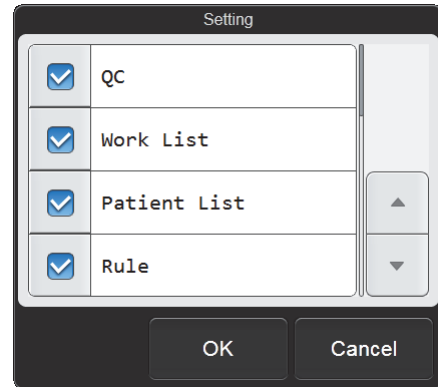
* Touch an icon to display the menu screen of that category. For details on the screen transition, see the following.
(▶P.27 "1.8.3 List of menu items")

● Hiding icons in the [Menu] screen

You can hide icons in the [Menu] screen window that you will not use.
Follow the steps below to show or hide an icon.

1 Touch the [Setting] button on the toolbar.

The [Setting] dialog box appears.
Displays a list of the items that can be shown in the [Menu] screen.



[Setting] dialog box

2 Select the checkboxes of the items you want to display.

Items with checkmarks will be shown in the [Menu] screen.
Each time you touch the checkbox, the checkbox is selected or unselected.

3 Touch [OK].

The contents of the [Menu] screen change according to your settings.

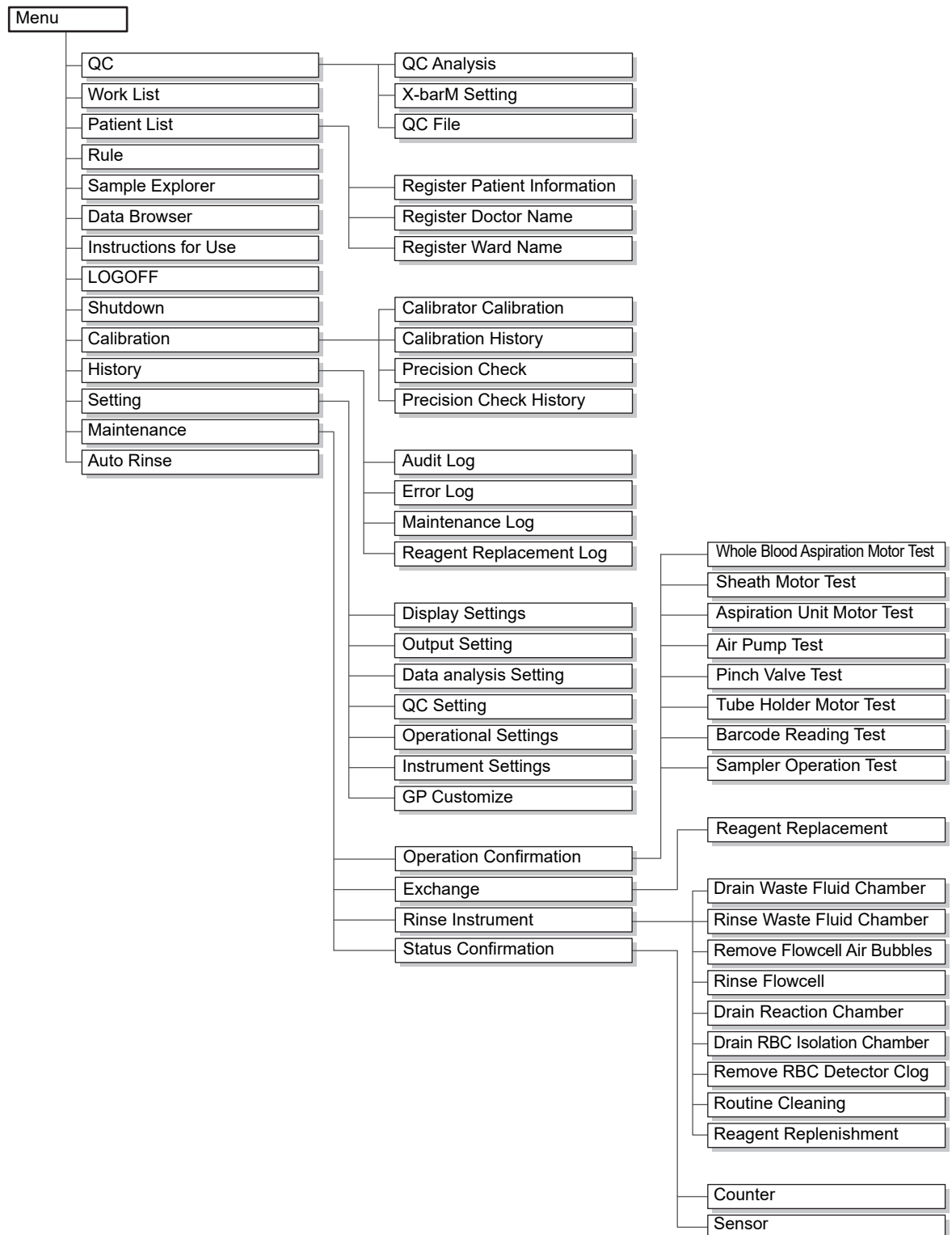
● Checking the version

Touch the [Version] button on the toolbar to display the [Version Information] dialog box.
The display contents are shown below.

Instrument name and serial No.	Shows the software version of the instrument.
[IPU]	Shows the version of the IPU.
[Device Control Manager]	Shows the version of the device control manager.
[Analysis Module]	Shows the version of the analysis module.
[Sequencer Module]	Shows the version of the sequencer module.
[Sequence Program]	Shows the version of the sequence program.
[FPGA]	Shows the version of the FPGA program.
[License]	Shows valid licenses. [RET]: RET channel analysis license [BF]: Body fluid analysis license [iRBC]: iRBC flag license [70/h]: High processing speed license [LW]: Low WBC analysis license [Inf]: Extended Inflammation parameter license
[Close]	The dialog box closes.

1.8.3 List of menu items

The screen structure is shown below.



Chapter 2 Preparation for Analysis (Registering Information)

This chapter explains how to register analysis orders and patient information in the instrument. If you will be connecting to the host computer and registering information in the host computer, the procedures in this chapter are not necessary.

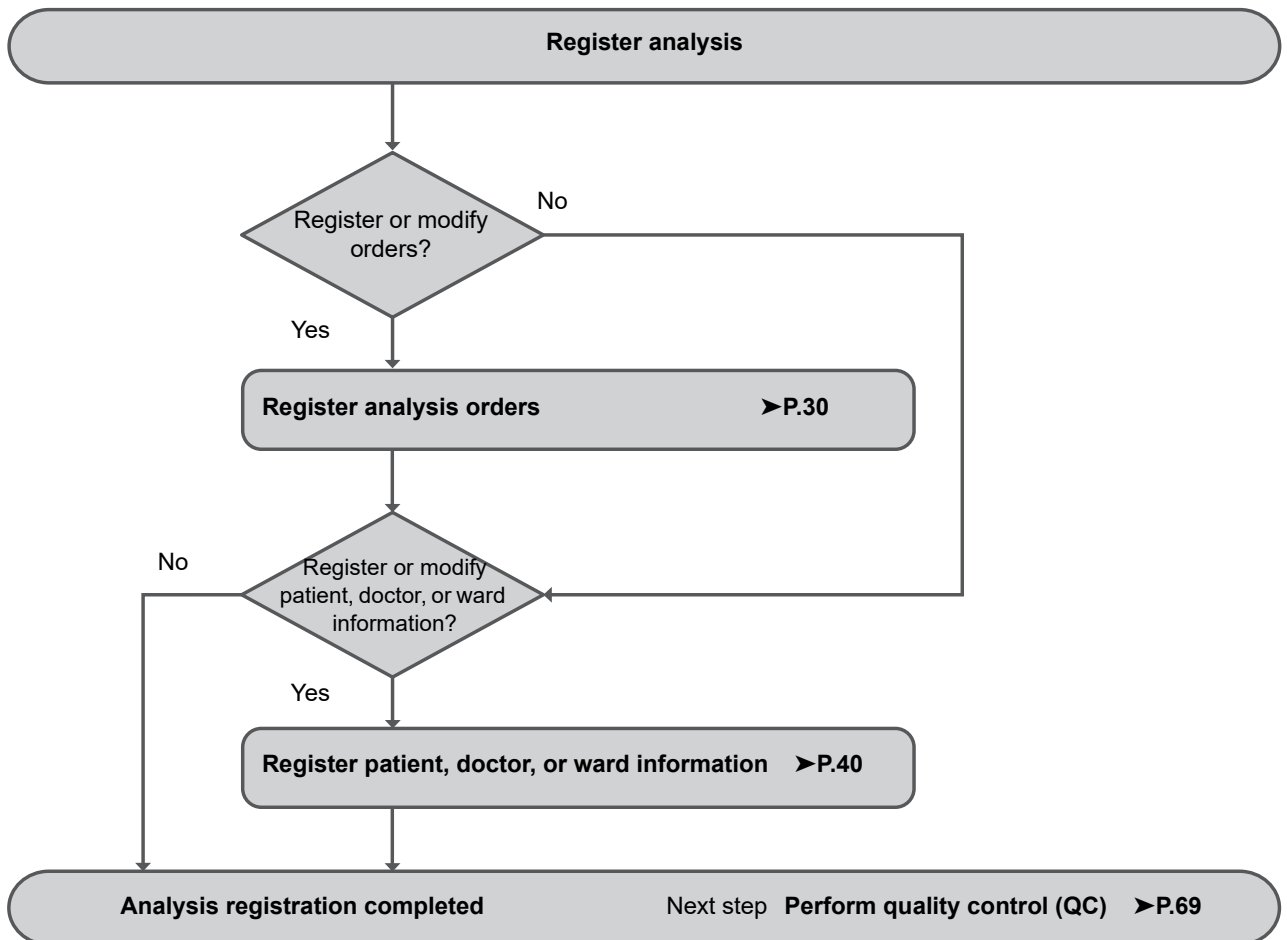


Information

If analysis is executed with analysis orders registered in both the instrument and the host computer, the analysis order registered in the instrument will be used.

2.1 Flow of analysis preparation (registering information)

The flow chart below shows the sequence followed to prepare for analysis. The typical flow is shown in gray.



2.2 Registering analysis orders (analysis registration)

Analysis registration consists of registering information such as sample information (sample number and patient information), the analysis method, and analysis parameters as analysis orders before executing analysis.

When analysis is performed, the analysis order is read by means of the sample number*, and analysis takes place accordingly.

A maximum of 2,000 analysis orders can be registered.

* When sampler analysis is used on the XN-550, a query can be made for the analysis order by means of the adapter number and sample tube position.

2.2.1 Registering analysis orders

Follow the steps below to register an analysis order.

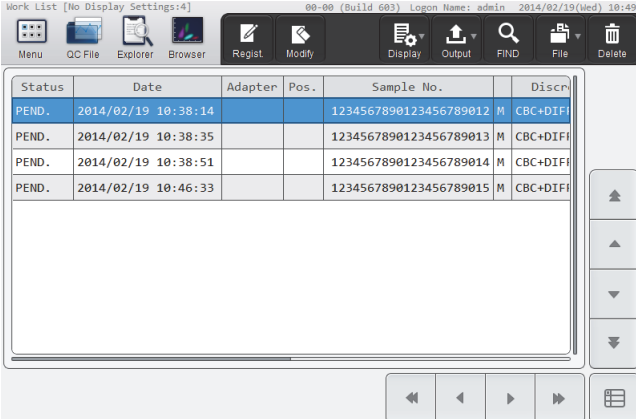
1 Touch the [Work List] icon in the [Menu] screen.

The [Work List] screen appears.

The registered analysis orders appear in the list.

For details on [Work List] screen, see the following.

(►P.58 "2.4 [Work List] screen")

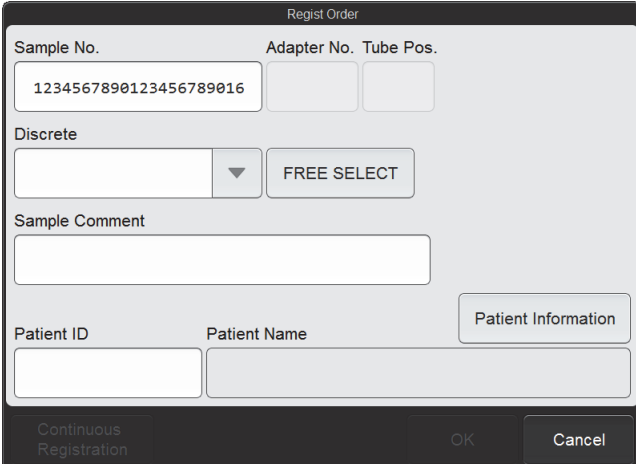


Status	Date	Adapter	Pos.	Sample No.	Discr
PEND.	2014/02/19 10:38:14			1234567890123456789012	M CBC+DIF
PEND.	2014/02/19 10:38:35			1234567890123456789013	M CBC+DIF
PEND.	2014/02/19 10:38:51			1234567890123456789014	M CBC+DIF
PEND.	2014/02/19 10:46:33			1234567890123456789015	M CBC+DIF

[Work List] screen

2 Touch the [Regist.] button on the toolbar.

The [Regist. Order] dialog box appears.



Regist Order

Sample No. Adapter No. Tube Pos.

Discrete
 ▼ FREE SELECT

Sample Comment

Patient ID Patient Name Patient Information

Continuous Registration OK Cancel

[Regist. Order] dialog box

**Note:**

If 2,000 analysis orders have been registered, the [Regist.] button on the toolbar is grayed out and cannot be touched. Delete any unneeded analysis orders and then register the new analysis order.

For details on deleting analysis orders, see the following.

(►P.34 "2.2.3 Deleting analysis orders")

3 Touch an item to set the condition.

[Sample No.]	<p>The sample number automatically appears.</p> <p>You can also enter a sample number. Up to 22 characters can be entered. Double-byte characters cannot be entered.</p> <p>You can also enter a sample number by reading the sample tube barcode label using the hand-held barcode reader.</p>
[Adapter No.]	<p>This is a setting item on the XN-550 only, and appears when [Analysis Ordering]*¹ is set to [Adapter No./Tube Pos.].</p> <p>The adapter number automatically appears.</p> <p>You can also enter an adapter number.</p> <p>Up to 6 characters can be entered. Double-byte characters cannot be entered.</p>
[Tube Pos.]	<p>This is a setting item on the XN-550 only, and appears when [Analysis Ordering]*¹ is set to [Adapter No./Tube Pos.].</p> <p>The sample tube position number automatically appears.</p> <p>You can also enter a sample tube position number (1 to 10).</p>
[Adapter unit registration]	<p>This is a setting item on the XN-550 only, and appears when [Analysis Ordering]*¹ is set to [Adapter No./Tube Pos.].</p> <p>When selected, registration is by adapter.</p> <p>The sample number is set in order from the value entered in [Sample No.], and the same information is entered in each of the other items.</p> <p>Patient information cannot be set.</p> <p>When information is already registered for an adapter number, the number appears in gray and cannot be touched.</p>
[Discrete]	<p>Select analysis parameters using discretets.</p> <p>For details on discretets and analysis parameters, see Chapter 4.</p> <p>(►P.109 "Chapter 4: 4.2.3 Discrete")</p>
[FREE SELECT]	<p>Use this to select whether each analysis parameter is analyzed.</p> <p>Touch to display the dialog box on the right. The parameters that are displayed depend on your system configuration.</p> <p>Select the parameters to be analyzed.</p> <p>If the selected parameter combination does not match the discretets, [FREE SELECT] is displayed in the [Discrete] field.</p>

[Sample Comment]	Enter comments about the sample. Up to 40 characters can be entered.
[Patient Information]	Patient information can be registered or edited. Touch to display the [Patient Information] dialog box. The items that appear are the same as in the [Register Patient Information] dialog box. See the following. (▶P.40 "2.3.1 Registering patient information")
[Patient ID]^{*2}	Enter a patient ID. Up to 16 characters can be entered. Double-byte characters cannot be entered.
[Patient Name]^{*2}	When you enter a [Patient ID], the registered patient information is searched. If there is a match, the patient name is displayed.

*1 For details on the [Analysis Ordering] settings, see Chapter 7. (▶P.228 "Chapter 7: 7.8.7 Analysis ordering settings")

*2 Displayed only if the logged on user has [Display and Modify Patient Info.] permission. For details on [Display and Modify Patient Info.] permission, see Chapter 7. (▶P.217 "Chapter 7: 7.8.1 User information management (user registration)")

4 Touch [OK] or [Continuous Registration].

The dialog box closes and the analysis order is registered.

When [Continuous Registration] is touched, the [Regist. Order] dialog box appears to let you register another analysis order.



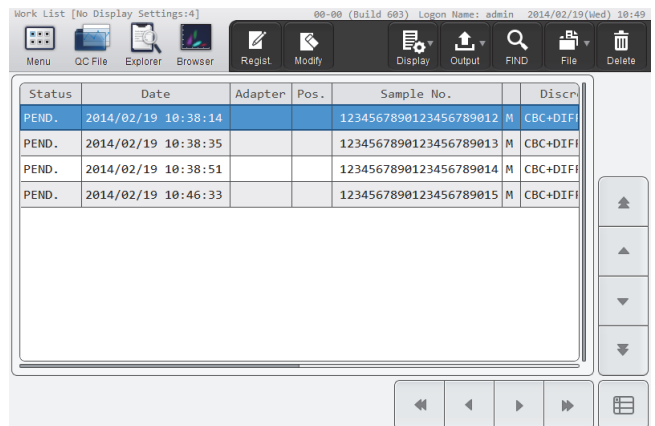
Note:

- If a discrete is not selected under [Discrete], or if the [Sample No.] field is blank or set to "0", [OK] and [Continuous Registration] are grayed out and cannot be touched.
- If the same information has already been registered in the items below for a different analysis order, an overwrite confirmation dialog box will appear.
 - [Sample No.]
 - [Adapter No.]/[Tube Pos.]

2.2.2 Modifying analysis orders

The contents of an analysis order that has not yet been analyzed can be modified.
Follow the steps below to modify an analysis order.

1 Select the analysis order you want to modify in the [Work List] screen.



[Work List] screen

2 Touch the [Modify] button on the toolbar.

The [Modify Order] dialog box appears.

The screenshot shows the [Modify Order] dialog box. It contains the following fields and controls:

- Sample No.: 1234567890123456789013
- Adapter No. and Tube Pos. (empty)
- Discrete: CBC+DIFF+RET (dropdown menu) and FREE SELECT (button)
- Sample Comment (text input field)
- Patient ID (text input field)
- Patient Name (text input field)
- Patient Information (button)
- OK and Cancel (buttons)

[Modify Order] dialog box

3 Touch the item you want to modify.

[Sample No.] cannot be modified.

When [Analysis Ordering] is set to [Adapter No./Tube Pos.], [Adapter No.] and [Tube Pos.] cannot be changed.
(XN-550 settings only)

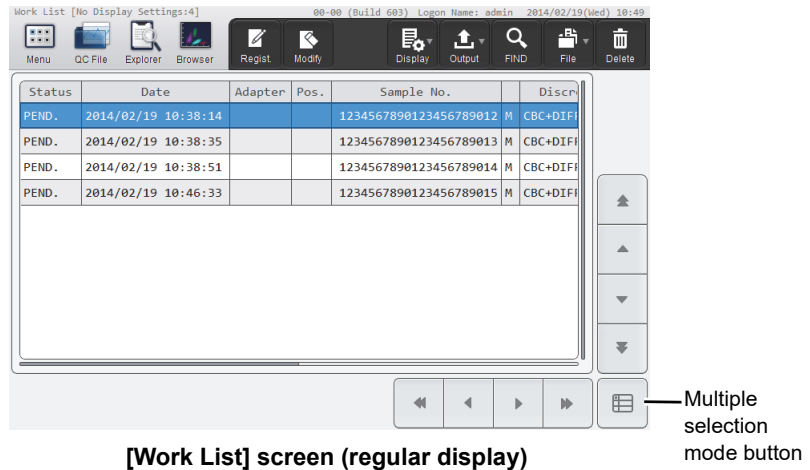
4 Touch [OK].

The dialog box closes, and the analysis order is modified.

2.2.3 Deleting analysis orders

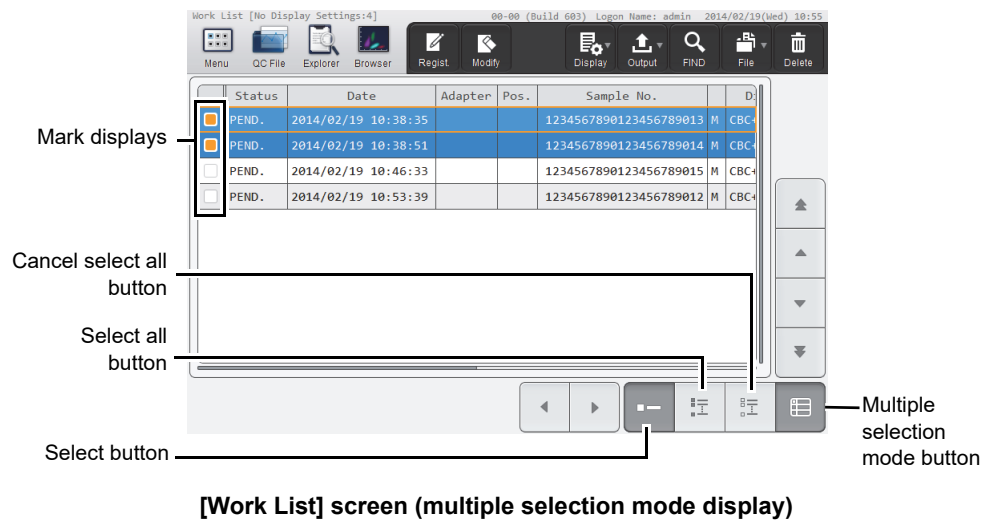
Follow the steps below to delete an analysis order.

1 Select the order you want to delete in the [Work List] screen.



- When you want to select multiple analysis orders

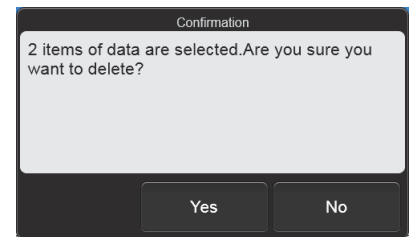
Touch the multiple selection mode button to change to the multiple selection mode display below.
Enter a mark to specify the order you want to delete.



Mark displays	Orders that are marked (in orange) will be the target of the operation.
Select button	Touch to add marks to the orders on the line where the cursor is positioned. If a mark already appears, the mark is cleared.
Select all button	Touch to add a mark to all orders.
Cancel select all button	Touch to clear the marks from all orders.
Multiple selection mode button	Touch to change the order list to regular mode.

2 Touch the [Delete] button on the toolbar.

The dialog box on the right appears.



3 Touch [Yes].

The deletion starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the deletion is complete.

2.2.4 Searching for analysis orders

You can search for an analysis order by sample number, patient name, and other information.

Follow the steps below to search for analysis orders.

1 Touch the [FIND] button on the toolbar in the [Work List] screen.

The [FIND] dialog box appears.



[FIND] dialog box

2 Specify the search conditions.

Touch a search item to select it, and a condition field will appear at the right. Touch the condition field and enter conditions. Up to 3 search items can be specified from the items below.

[Sample No.]	Up to 22 characters can be entered for the condition. Double-byte characters cannot be entered.
[Patient ID]	Up to 16 characters can be entered for the condition. Double-byte characters cannot be entered.
[Last Name] (the patient's last name)	Up to 20 characters can be entered for the condition.
[First Name] (the patient's first name)	Up to 20 characters can be entered for the condition.
[Ward Name]	Up to 20 characters can be entered for the condition.
[Doctor Name]	Up to 20 characters can be entered for the condition.

**Note:**

You can enter "?" and "*" as wildcard characters in your search.

"?": Used as a wildcard for 1 character.

Example: If you search for "99?99", "99099", "99999", and "99A99" are all selected.

"*": Used as a wildcard for 0 or more characters.

Example: If you search for "9*9", "909", "9119", and "99A99" are all selected.

3 Touch [PREV.] or [NEXT].

An analysis order that matches the search conditions is selected in the list. The dialog box is reduced and only the button area appears.

[PREV.]	Touch to search upward from the analysis order selected in the list.
[NEXT]	Touch to search downward from the analysis order selected in the list.

**Note:**

Touch [Condition] to return to the dialog box that shows the condition.

4 Touch [Close].

The dialog box closes.

2.2.5 Printing analysis orders (output)

The information that appears in the analysis order list can be printed on the printer.
Follow the steps below to print an analysis order.

1 In the [Work List] screen, select the display settings for the analysis order list you want to print.

For details on changing the list display, see the following.

(▶P.59 "2.4.1 Changing the display method of the analysis order list (display settings)")

2 Touch the [Output] button - [Ledger (LP)] on the toolbar.

The information that appears in the analysis order list is output to the list printer.

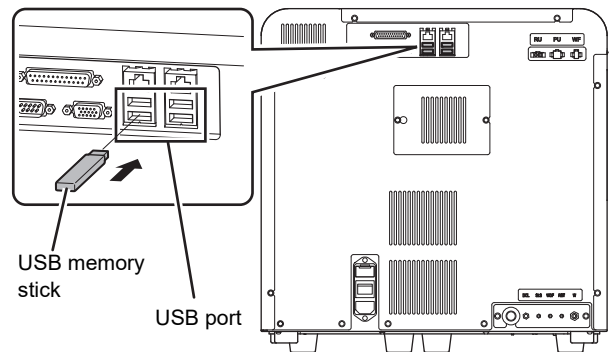
2.2.6 Saving pending analysis orders (backup)

Pending analysis orders can be backed up as a file on a USB memory stick. Follow the steps below to save an pending analysis order.

1 Insert the USB memory stick.

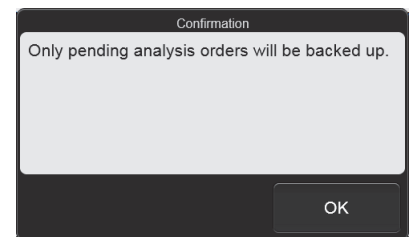
Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 Touch the [File] button - [Backup] on the toolbar in the [Work List] screen.

The dialog box on the right appears.



3 Touch [OK].

The backup starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the backup is complete.

4 Remove the USB memory stick.

● Backup directory and file name

When you back up the data, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

[Instrument ID][Software version][Date saved_Time saved].odr

Example: [XN-XXX][00-01][20140505_080808].odr

* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

2.2.7 Restoring saved pending analysis orders (restore)

You can restore saved pending analysis orders.



Note:

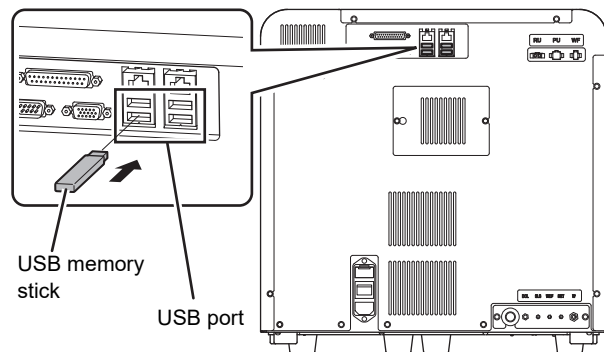
If restoring a saved analysis order causes the number of registered analysis orders to exceed 2,000, the oldest order is automatically deleted.

Follow the steps below to restore a pending analysis order.

1 Insert the USB memory stick that contains the pending analysis order backup file.

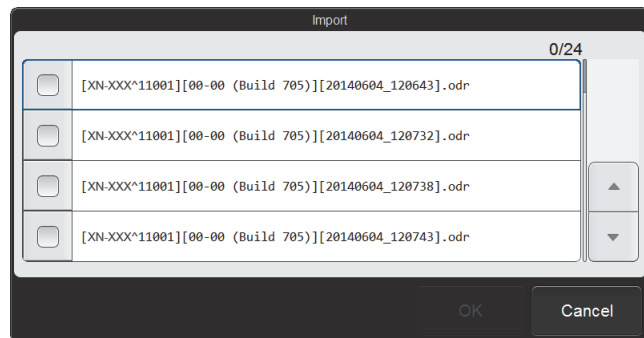
Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 Touch the [File] button - [Restore] on the toolbar in the [Work List] screen.

The [Import] dialog box appears.



[Import] dialog box

3 Select the checkboxes of the files you want to restore.

Files with checkmarks will be restored.

Each time you touch the checkbox, the checkbox is selected or unselected.

4 Touch [OK].

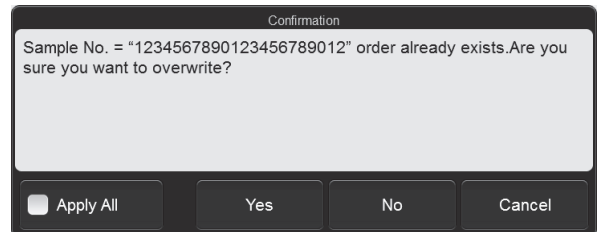
The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the pending analysis order restore is complete.

● When there are analysis orders with the same ordering key

When there is a registered analysis order with the same ordering key content as the ordering key of an analysis order being restored, the dialog box on the right appears.

- To delete the registered analysis order and restore the analysis order in the backup file
Touch [Yes].
- To not restore the analysis order with the matching ordering key
Touch [No].
- To cancel the restore
Touch [Cancel].



Example: When the ordering key is a sample number

Select the [Apply All] checkbox to take the same action for all further analysis orders with the same ordering keys.

5 Remove the USB memory stick.

2.3 Registering patient, doctor, or ward information (patient registration)

Patient registration is a function for saving patient information in the instrument. By entering a patient ID, which is a control number, in the analysis order, the registered patient information is associated with the sample.

Doctor and ward names can also be registered. Those registered names can be selected when registering a patient.

- This function can only be used if the logged on user has [Display and Modify Patient Info.] permission. For details on [Display and Modify Patient Info.] permission, see Chapter 7. (►P.217 "Chapter 7: 7.8.1 User information management (user registration)")
- A maximum of 10,000 patients can be registered.
- A maximum of 200 doctor names and 200 ward names can be registered.

2.3.1 Registering patient information



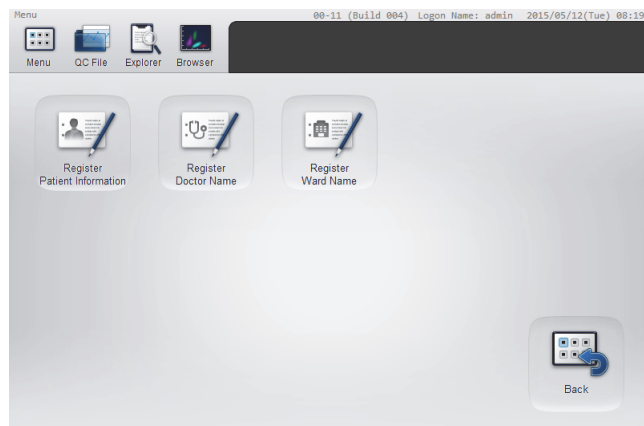
Note:

If a new patient is registered when 10,000 patients have already been registered, the patient information with the oldest update date and time is automatically deleted.

Follow the steps below to register patient information.

1 Touch the [Patient List] icon in the [Menu] screen.

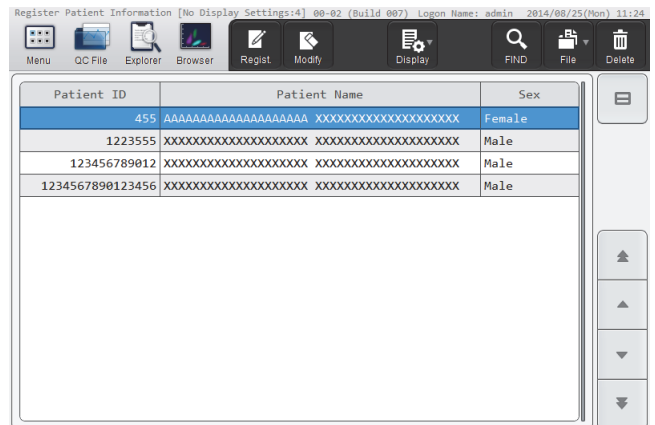
The [Patient List] menu screen appears.



[Patient List] menu screen

2 Touch the [Register Patient Information] icon.

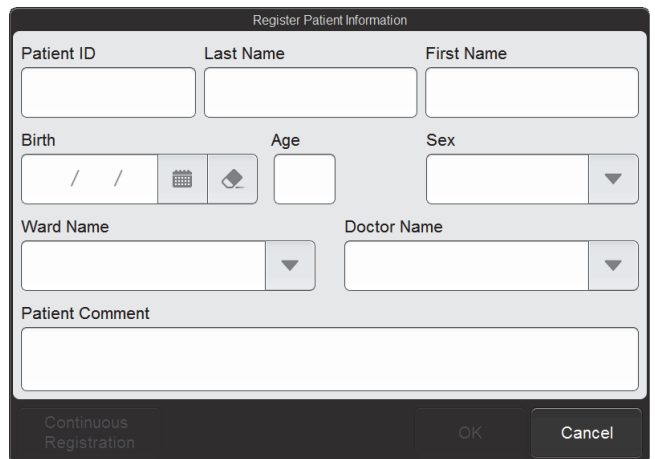
The [Register Patient Information] screen appears.



[Register Patient Information] screen

3 Touch the [Regist.] button on the toolbar.

The [Register Patient Information] dialog box appears.



[Register Patient Information] dialog box

4 Touch an item to set the condition.

[Patient ID]	Enter a patient ID. Up to 16 characters can be entered. Double-byte characters cannot be entered.
[Last Name]	Enter a patient's last name. Up to 20 characters can be entered.
[First Name]	Enter a patient's first name. Up to 20 characters can be entered.
[Birth]	Enter a patient's date of birth.
[Age]	Enter a patient's age. This is automatically displayed when [Birth] is entered.
[Sex]	Select the patient's sex.

[Ward Name]	Select the patient's ward name or the name of the clinical service. Select the ward name from the registered ward names.
[Doctor Name]	Select the doctor assigned to the patient. Select the doctor name from the registered doctor names.
[Patient Comment]	Enter comments about the patient. Up to 100 characters can be entered.

5 Touch [OK] or [Continuous Registration].

The dialog box closes and the patient information is registered.

When the [Continuous Registration] is touched, the [Register Patient Information] dialog box appears to let you register another patient information.



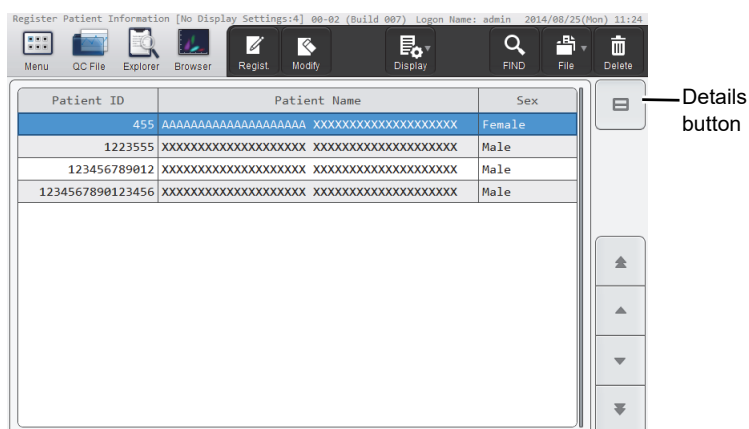
Note:

If patient information with the same [Patient ID] has already been registered, an overwrite confirmation dialog box will appear.

2.3.2 Modifying or deleting patient information

Follow the steps below to modify or delete patient information.

1 Select the patient you want to modify or delete in the [Register Patient Information] screen.



[Register Patient Information] screen



Note:

When the details button is touched, the detailed information of the selected patient appears below the list.

2 Modify or delete the patient information.**● To modify**

1 Touch the [Modify] button on the toolbar.

The same dialog box as for patient information registration appears.

2 Touch the item you want to modify.

The patient ID cannot be changed.

3 Touch [OK].

The dialog box closes, and the patient information is modified.

● To delete

1 Touch the [Delete] button on the toolbar.

The deletion confirmation dialog box appears.

2 Touch [Yes].

The deletion starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the deletion is complete.

2.3.3 Searching for patient information

You can search for patient information by patient ID or patient name.
Follow the steps below to search patient information.

1 Touch the [FIND] button on the toolbar in the [Register Patient Information] screen.

The [FIND] dialog box appears.

[FIND] dialog box

2 Specify the search conditions.

Touch a search item to select it, and a condition field will appear at the right. Touch the condition field and enter conditions. Search items can be specified from the items below.

[Patient ID]	Up to 16 characters can be entered for the condition. Double-byte characters cannot be entered.
[Last Name] (the patient's last name)	Up to 20 characters can be entered for the condition.
[First Name] (the patient's first name)	Up to 20 characters can be entered for the condition.



Note:

You can enter "?" and "*" as wildcard characters in your search.

"?": Used as a wildcard for 1 character.

Example: If you search for "99?99", "99099", "99999", and "99A99" are all selected.

"*": Used as a wildcard for 0 or more characters.

Example: If you search for "9*9", "909", "9119", and "99A99" are all selected.

3 Touch [PREV.] or [NEXT].

Patient information that matches the search conditions is selected in the list. The dialog box is reduced and only the button area appears.

[PREV.]	Touch to search upward from the patient information selected in the list.
[NEXT]	Touch to search downward from the patient information selected in the list.



Note:

Touch [Condition] to return to the dialog box that shows the condition.

4 Touch [Close].

The dialog box closes.

2.3.4 Saving patient information in CSV format

Patient information can be saved to a USB memory stick as a file in CSV format.

**Note:**

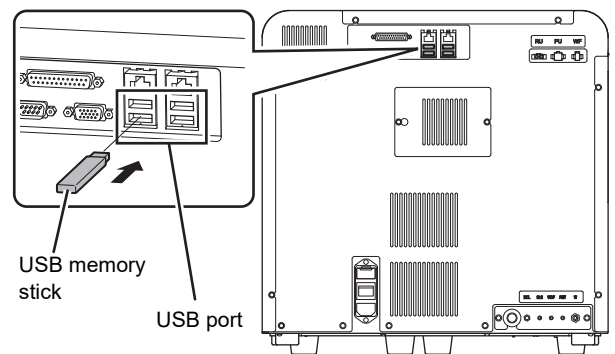
To save patient information, ward names, or doctor names in CSV format, the [Output patient information] checkbox must be selected in the [Security] settings. For details on the security, see Chapter 7.
(► **P.234** "Chapter 7: 7.9.3 Security settings")

Follow the steps below to save the patient information in CSV format.

1 Insert the USB memory stick.

Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.

**2 Touch the [File] button - [Output in CSV Format] on the toolbar in the [Register Patient Information] screen.**

The data save starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the data save is complete.

3 Remove the USB memory stick.**● Save directory and file name**

When you save the data, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

InstrumentID_Software version_PATIENT.csv

Example: XN-XXX_00-01_PATIENT.csv

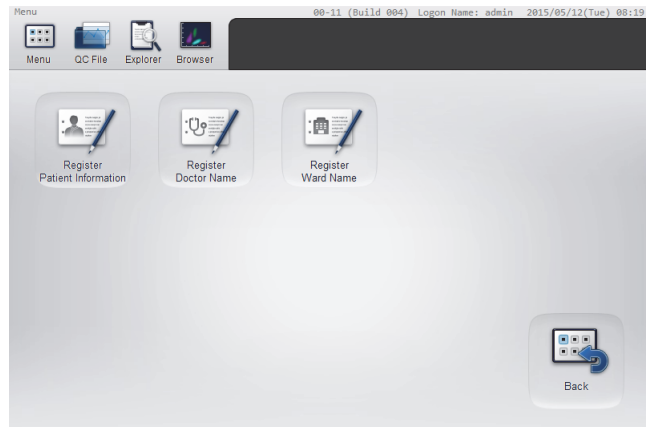
* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

2.3.5 Registering ward names

Follow the steps below to register a ward name.

1 Touch the [Patient List] icon in the [Menu] screen.

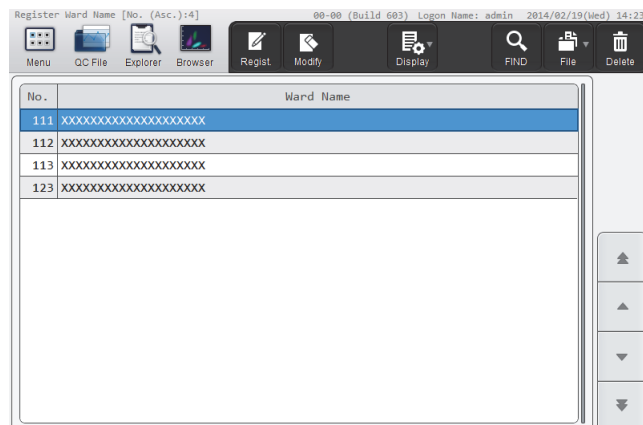
The [Patient List] menu screen appears.



[Patient List] menu screen

2 Touch the [Register Ward Name] icon.

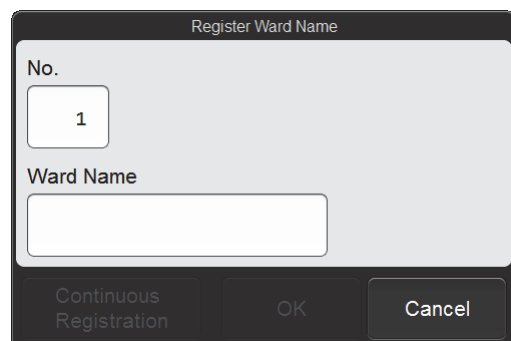
The [Register Ward Name] screen appears.



[Register Ward Name] screen

3 Touch the [Regist.] button on the toolbar.

The [Register Ward Name] dialog box appears.



[Register Ward Name] dialog box

4 Touch an item to set the condition.

[No.]	The minimum number that has not been registered is automatically generated. This number can be changed. A number between 1 and 200 can be entered.
[Ward Name]	Enter a ward name. Up to 20 characters can be entered.

5 Touch [OK] or [Continuous Registration].

The dialog box closes and the ward name is registered.

When [Continuous Registration] is touched, the [Register Ward Name] dialog box appears to let you register another ward name.



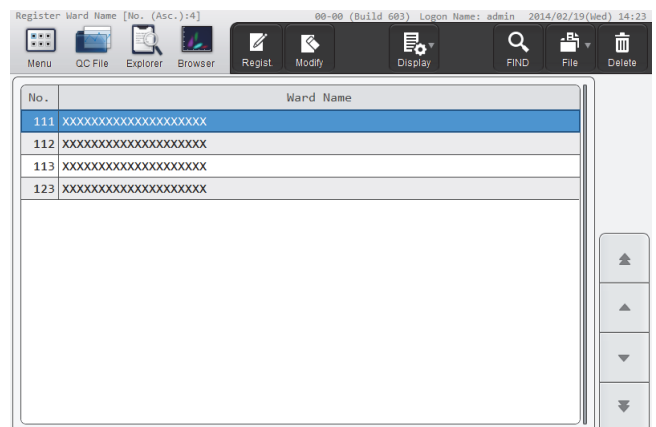
Note:

If a ward name with the same [No.] has already been registered, an overwrite confirmation dialog box will appear.

2.3.6 Modifying or deleting ward names

Follow the steps below to modify or delete a ward name.

1 Select the ward you want to modify or delete in the [Register Ward Name] screen.



[Register Ward Name] screen

2 Modify or delete the ward name.

● To modify

1 Touch the [Modify] button on the toolbar.

The same dialog box as for ward name registration appears.

2 Modify the ward name.

The number cannot be changed.

3 Touch [OK].

The dialog box closes and the ward name is modified.

● **To delete**

1 Touch the [Delete] button on the toolbar.

The deletion confirmation dialog box appears.

2 Touch [Yes].

The deletion starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the deletion is complete.

2.3.7 Searching for ward names

Use to search for a ward name.

Follow the steps below to search for a ward name.

1 Touch the [FIND] button on the toolbar in the [Register Ward Name] screen.

The [FIND] dialog box appears.

[FIND] dialog box

2 Specify the search conditions.

Touch a search item to select it, and a condition field will appear on the right. Touch the condition field and enter conditions. Search items can be specified from the items below.

[Ward Name]	Up to 20 characters can be entered for the condition.
--------------------	-------------------------------------------------------

**Note:**

You can enter "?" and "*" as wildcard characters in your search.

"?": Used as a wildcard for 1 character.

Example: If you search for "99?99", "99099", "99999", and "99A99" are all selected.

"*": Used as a wildcard for 0 or more characters.

Example: If you search for "9*9", "909", "9119", and "99A99" are all selected.

3 Touch [PREV.] or [NEXT].

A ward name that matches the search conditions is selected in the list. The dialog box is reduced and only the button area appears.

[PREV.]

Touch to search upward from the ward name selected in the list.

[NEXT]

Touch to search downward from the ward name selected in the list.

**Note:**

Touch [Condition] to return to the dialog box that shows the condition.

4 Touch [Close].

The dialog box closes.

2.3.8 Saving ward names in CSV format

Ward names can be saved to a USB memory stick as a file in CSV format.

**Note:**

To save patient information, ward names, or doctor names in CSV format, the [Output patient information] checkbox must be selected in the [Security] settings. For details on the security, see Chapter 7.

(►P.234 "Chapter 7: 7.9.3 Security settings")

The procedure is the same as for saving patient information in CSV format. See the following.

(►P.45 "2.3.4 Saving patient information in CSV format")

● Save directory and file name

When you save the data, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

InstrumentID_Software version_WARD.csv

Example: XN-XXX_00-01_WARD.csv

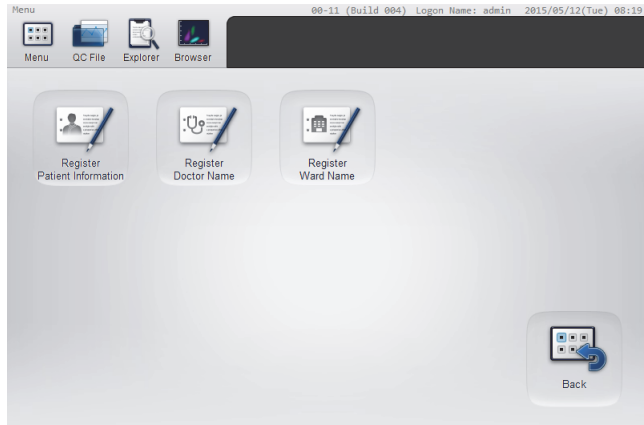
* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

2.3.9 Registering doctor names

Follow the steps below to register a doctor name.

1 Touch the [Patient List] icon in the [Menu] screen.

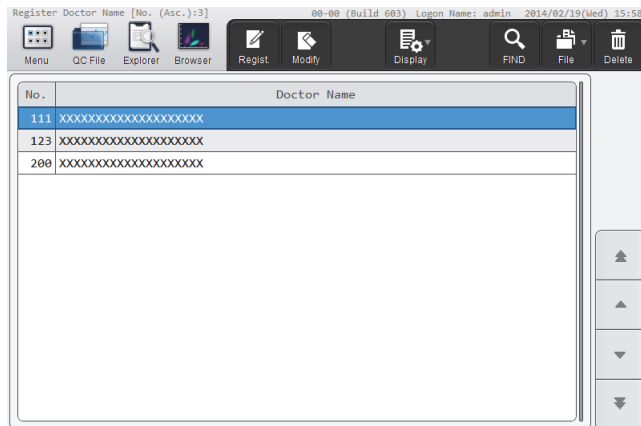
The [Patient List] menu screen appears.



[Patient List] menu screen

2 Touch the [Register Doctor Name] icon.

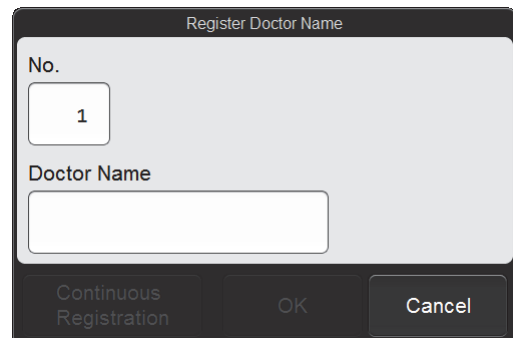
The [Register Doctor Name] screen appears.



[Register Doctor Name] screen

3 Touch the [Regist.] button on the toolbar.

The [Register Doctor Name] dialog box appears.



[Register Doctor Name] dialog box

4 Touch an item to set the condition.

[No.]	The minimum number that has not been registered is automatically generated. This number can be changed. A number between 1 and 200 can be entered.
[Doctor Name]	Enter a doctor name. Up to 20 characters can be entered.

5 Touch [OK] or [Continuous Registration].

The dialog box closes and the doctor name is registered.

When the [Continuous Registration] is touched, the [Register Doctor Name] dialog box appears to let you register another doctor name.



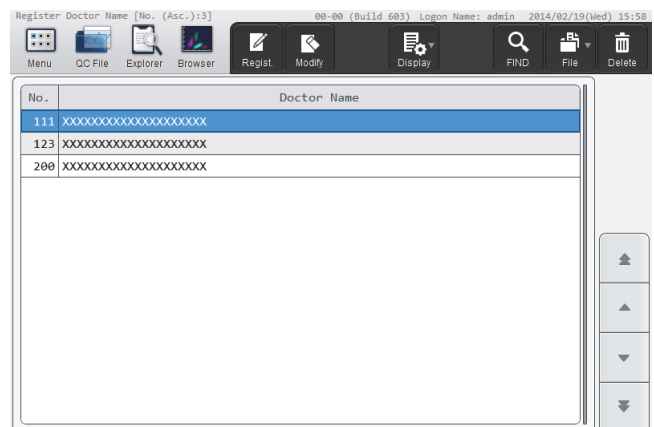
Note:

If a doctor name with the same [No.] has already been registered, an overwrite confirmation dialog box will appear.

2.3.10 Modifying or deleting doctor names

Follow the steps below to modify or delete a doctor name.

1 Select the doctor you want to modify or delete in the [Register Doctor Name] screen.



[Register Doctor Name] screen

2 Modify or delete the doctor name.

● To modify

1 Touch the [Modify] button on the toolbar.

The same dialog box as for doctor name registration appears.

2 Modify the doctor name.

The number cannot be changed.

3 Touch [OK].

The dialog box closes and the doctor name is modified.

● To delete

1 Touch the [Delete] button on the toolbar.

The deletion confirmation dialog box appears.

2 Touch [Yes].

The deletion starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the deletion is complete.

2.3.11 Searching for doctor names

Use to search for a doctor name.

The procedure is the same as for searching for a ward name. See the following.

(►P.48 "2.3.7 Searching for ward names")

The search item is the doctor name.

2.3.12 Saving doctor names in CSV format

Doctor names can be saved to a USB memory stick as a file in CSV format.



Note:

To save patient information, ward names, or doctor names in CSV format, the [Output patient information] checkbox must be selected in the [Security] settings. For details on the security, see Chapter 7.

(►P.234 "Chapter 7: 7.9.3 Security settings")

The procedure is the same as for saving patient information in CSV format. See the following.

(►P.45 "2.3.4 Saving patient information in CSV format")

● Save directory and file name

When you save the data, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

InstrumentID_Software version_DOCTOR.csv

Example: XN-XXX_00-01_DOCTOR.csv

* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

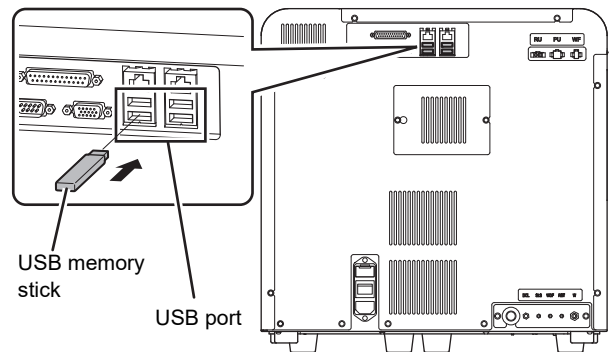
2.3.13 Saving patient, ward, or doctor information (backup)

Patient information, ward names, or doctor names can be backed up as a file on a USB memory stick. Follow the steps below to save patient, ward, or doctor information.

1 Insert the USB memory stick.

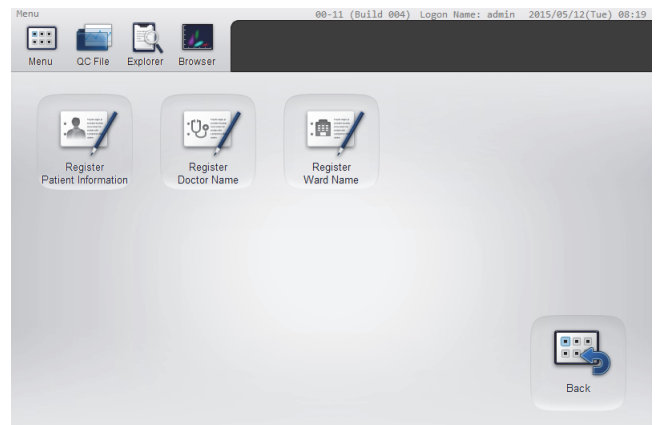
Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 Touch the [Patient List] icon in the [Menu] screen.

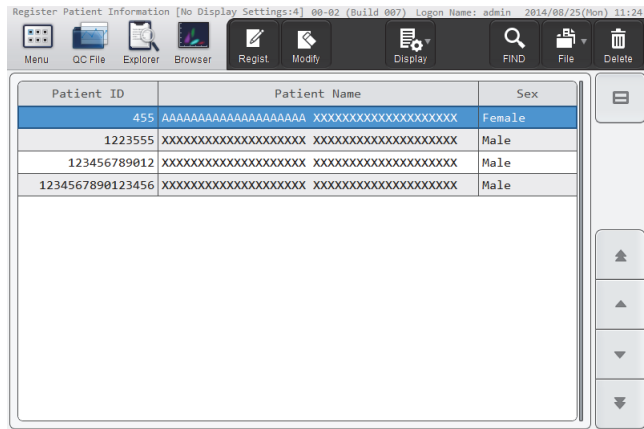
The [Patient List] menu screen appears.



[Patient List] menu screen

3 Touch the [Register Patient Information] icon.

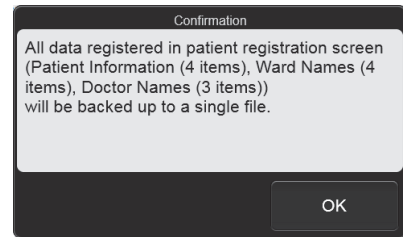
The [Register Patient Information] screen appears.



[Register Patient Information] screen

4 Touch the [File] button - [Backup] on the toolbar.

The dialog box on the right appears.



5 Touch [OK].

The backup starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the backup is complete.

6 Remove the USB memory stick.

● Save directory and file name

When you back up the data, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

[Instrument ID][Software version][Date saved_Time saved].pat

Example: [XN-XXX][00-01][20140505_080808].pat

* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

2.3.14 Restoring saved patient, ward, or doctor information (restore)

Saved patient, ward, or doctor information can be restored.



Note:

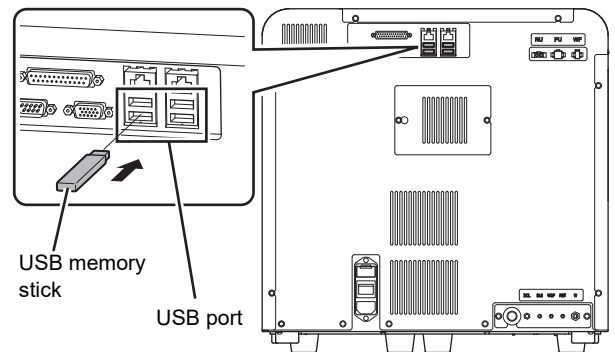
If restoring saved information causes the number of registered items of any of the types of information to exceed the maximum, the oldest item is automatically deleted.

Follow the steps below to restore patient, ward, or doctor information.

1 Insert the USB memory stick that contains the patient, ward, or doctor information backup file.

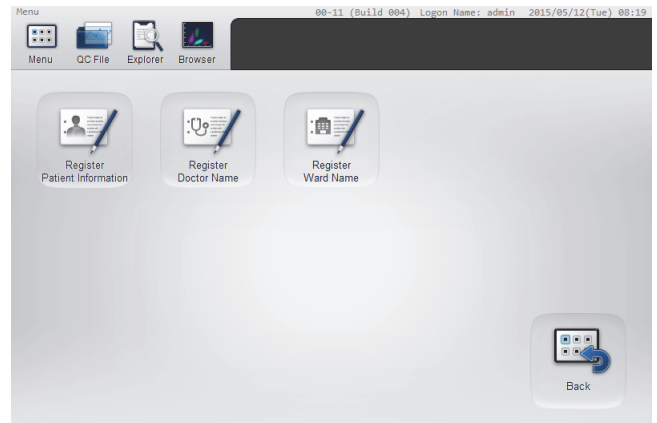
Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 Touch the [Patient List] icon in the [Menu] screen.

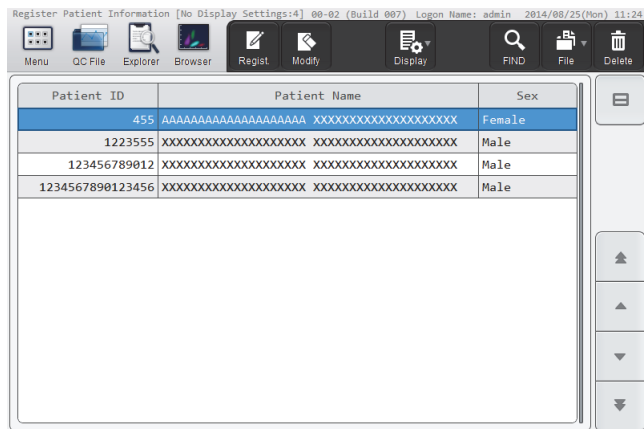
The [Patient List] menu screen appears.



[Patient List] menu screen

3 Touch the [Register Patient Information] icon.

The [Register Patient Information] screen appears.



[Register Patient Information] screen

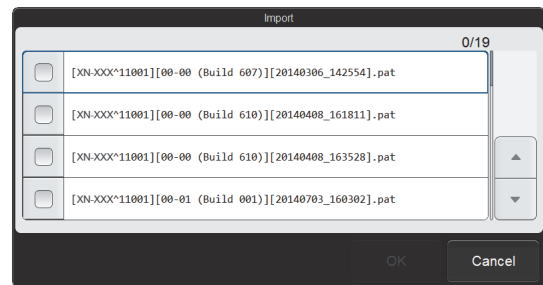
4 Touch the [File] button - [Restore] on the toolbar.

The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the information restore is complete.

● When the [Import] dialog box appears

When the USB memory stick contains multiple backup information files, the [Import] dialog box appears.



[Import] dialog box

Follow the steps below to select and restore backup files.

1 Select the checkboxes of the files you want to restore.

Files with checkmarks will be restored.

Each time you touch the checkbox, the checkbox is selected or unselected.

2 Touch [OK].

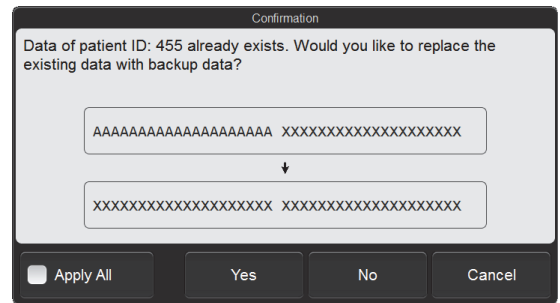
The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the information restore is complete.

- When registered information changes due to restore

If there is registered information with the same control number (patient ID, ward number, or doctor number) as the information being restored, and the content of the information differs, the dialog box on the right will appear.

- To overwrite the registered information with the information in the backup file
Touch [Yes].
- To not restore the information
Touch [No].
- To cancel the restore
Touch [Cancel].



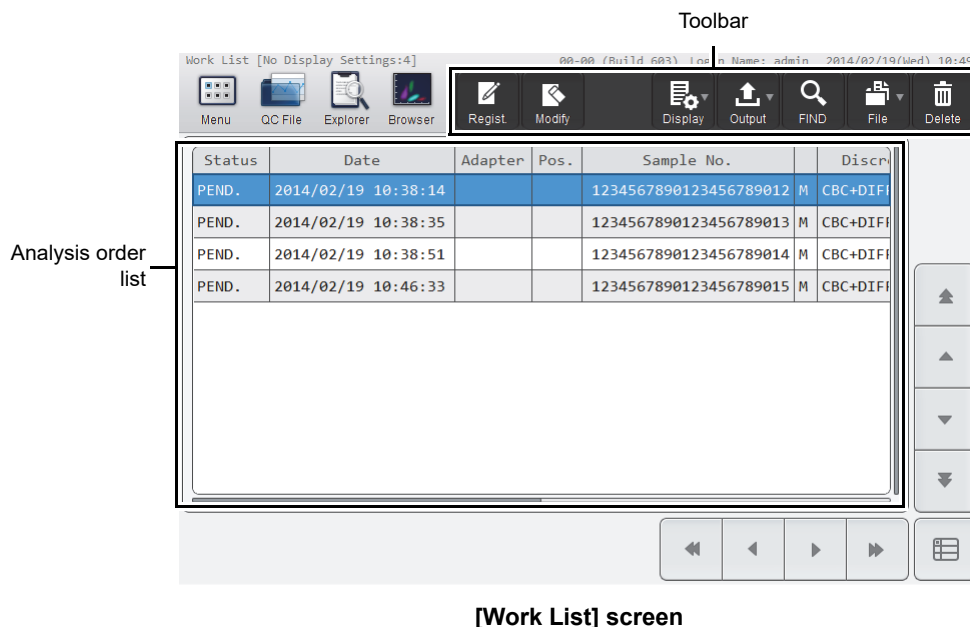
Example: The patient ID is the same, but the information being restored is different.

Select the [Apply All] checkbox to take the same action for all further cases where a control number is the same but the information is different.

5 Remove the USB memory stick.

2.4 [Work List] screen

Touch the [Work List] icon in the [Menu] screen to display the [Work List] screen.



Toolbar	Displays the function buttons.
[Regist.]	Use to register a new analysis order. (▶P.30 "2.2.1 Registering analysis orders")
[Modify]	Use to modify contents of the analysis order selected in the analysis order list. (▶P.33 "2.2.2 Modifying analysis orders")
[Display]	Use to set sorting of analysis order list and display conditions. (▶P.59 "2.4.1 Changing the display method of the analysis order list (display settings)")
[Output]	Use to output analysis orders to the output destination (list printer) displayed in the submenu. (▶P.36 "2.2.5 Printing analysis orders (output)")
[FIND]	Use to search for an analysis order. (▶P.35 "2.2.4 Searching for analysis orders")
[File]	Touch to open a submenu that allows you to save and restore an analysis order. [Backup]: Use to back up pending analysis orders. (▶P.37 "2.2.6 Saving pending analysis orders (backup)") [Restore]: Use to restore the backed up data. (▶P.38 "2.2.7 Restoring saved pending analysis orders (restore)")
[Delete]	Use to delete the data selected in the analysis order list. (▶P.34 "2.2.3 Deleting analysis orders")

Analysis order list	Displays a list of the analysis orders.
[Status]	Displays the status of the analysis orders. [PEND.]: Indicates that the analysis order has been registered. [COMP.]: Indicates that the analysis has completed. [ERR.]: Indicates that an analysis error occurred.
[Date]	Displays the date and time the analysis order was registered.
[Adapter]	Displays the adapter number. (XN-550 only)
[Pos.]	Displays the sample tube position number. (XN-550 only)
[Sample No.]	Displays the sample number. The column to the right of the [Sample No.] column indicates how the sample number was obtained. [B]: ID barcode reading [M]: Manual input Changes to [M] if the analysis order is modified after the sample number is obtained by barcode reading.
[Discrete]	Displays the discrete.
[Patient ID]	The patient ID is displayed only if the logged on user has [Display and Modify Patient Info.] permission.
[Patient Name]	The name of the patient (first name and last name) is displayed only if the logged on user has [Display and Modify Patient Info.] permission.
[Sample Comment]	Displays comments about the sample.

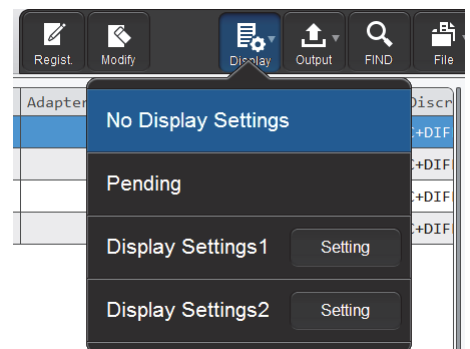
2.4.1 Changing the display method of the analysis order list (display settings)

You can change the sorting order of the analysis order list, and specify filter conditions to display only specific analysis orders.

Follow the steps below to change the display method.

1 Touch the [Display] button on the toolbar.

The submenu on the right appears.



2 Touch the desired display method.

The submenu closes and the display of the analysis order list changes.

[No Display Settings]	Touch to change to the standard display method (sort conditions: date and time of registration in ascending order, filter conditions: none).
[Pending]	Touch to display only pending analysis orders.
[Display Settings1], [Display Settings2]	Touch to change to the sort conditions and filter conditions set in the corresponding item.
[Setting]	Touch to set the sort conditions and filter conditions.

The name of the selected display method appears next to the screen name in the upper left corner of the screen.

● Registering sort conditions and filter conditions

Follow the steps below to register display setting conditions.

1 Touch [Setting] in the submenu of the [Display] button.

The dialog box on the right appears.

2 Enter [Display Setting Name].

This is the name that appears in the submenu. Up to 20 characters can be entered.

3 Set the sort conditions.

Touch and select a sort key, and touch the sorting order ([Asc.]/[Desc.]).

To enable the sort key settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.

Sorting takes place according to the settings of the top key, which has priority.

The sort keys below can be selected.

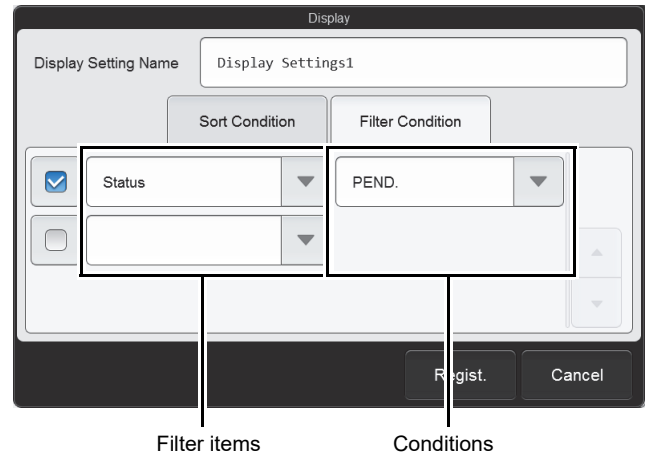
[Date]	Sorts by the date and time the data was registered.
[Sample No.]	Sorts by sample number.
[Adapter No.]	Sorts by adapter number.
[Tube Position]	Sorts by sample tube position number.

4 Touch the [Filter Condition] tab.

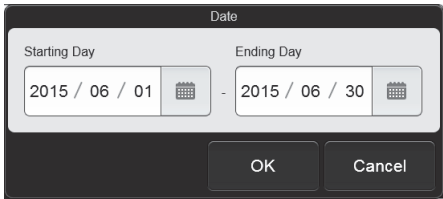
5 Set the filter conditions.

Touch a filter item, and touch and enter the condition for that item.

To enable the filter settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.



The conditions that can be selected vary by filter item.

Filter item	Selectable condition	Remarks
[Date]	[Today] [Yesterday] [Day before Yesterday] [Specify]	When [Specify] is selected, the dialog box below appears. Set the range. 
[Status]	[PEND.] [COMP.] [ERR.]	—

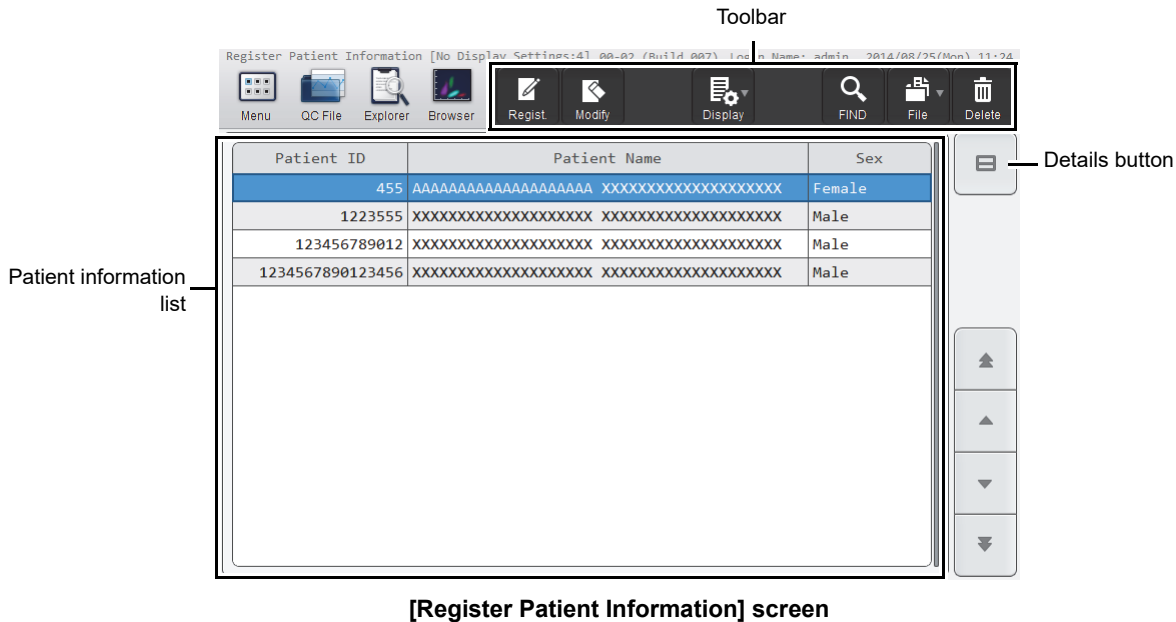
6 Touch [Regist.].

The dialog box closes and the set information is registered. The list display changes according to the set conditions.

2.5 [Register Patient Information] screen

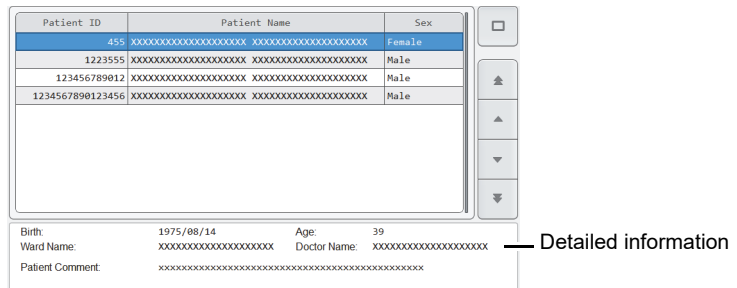
Touch the [Register Patient Information] icon in the [Patient List] menu screen to display the [Register Patient Information] screen.

Displayed only if the logged on user has [Display and Modify Patient Info.] permission.



Toolbar	Displays the function buttons.
[Regist.]	Use to resister new patient information. (▶P.40 "2.3.1 Registering patient information")
[Modify]	Use to modify the patient information selected in the patient information list. (▶P.42 "2.3.2 Modifying or deleting patient information")
[Display]	Use to set the sorting order of the patient information list and display conditions. (▶P.63 "2.5.1 Changing the display method of the patient information list (display settings)")
[FIND]	Use to search for patient information. (▶P.44 "2.3.3 Searching for patient information")
[File]	Touch to open a submenu that allows you to output patient information. [Output in CSV Format]: Use to save the patient information in CSV format. (▶P.45 "2.3.4 Saving patient information in CSV format")
[Delete]	Use to delete the data selected in the patient information list. (▶P.42 "2.3.2 Modifying or deleting patient information")
Patient information list	Displays a list of patient information.
[Patient ID]	Displays the ID of the patient.
[Patient Name]	Displays the name of the patient (first name and last name).
[Sex]	Displays the patient's sex.

Details button Touch to display the detailed information of the patient selected in the patient information list below the list.



- [Birth]: Displays the patient's date of birth.
- [Age]: Displays the patient's age.
- [Ward Name]: Displays the patient's ward name or the name of the clinical service.
- [Doctor Name]: Displays the name of the doctor assigned to the patient.
- [Patient Comment]: Displays comments about the patient.

You can select a different patient while this is displayed.
Touch the details button again to return to the original display.

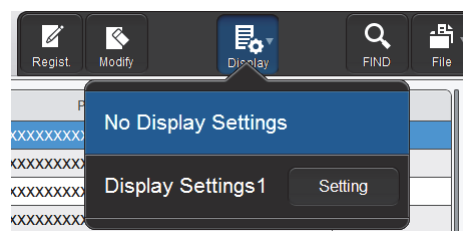
2.5.1 Changing the display method of the patient information list (display settings)

You can change the sorting order of the patient information list, and specify filter conditions to display only specific patients.

Follow the steps below to change the display method.

1 Touch the [Display] button on the toolbar in the [Register Patient Information] screen.

The submenu on the right appears.



2 Touch the desired display method.

The submenu closes and the display of the patient information list changes.

[No Display Settings] Touch to change to the standard display method (sort conditions: patient ID in ascending order, filter conditions: none).

[Display Settings1] Touch to change to the sort conditions and filter conditions that have been set.

[Setting] Touch to set the sort conditions and filter conditions.

The name of the selected display method appears next to the screen name in the upper left corner of the screen.

● Registering sort conditions and filter conditions

Follow the steps below to register display setting conditions.

1 Touch [Setting] in the submenu of the [Display] button.

The dialog box on the right appears.

2 Enter [Display Setting Name].

This is the name that appears in the submenu. Up to 20 characters can be entered.

3 Set the sort conditions.

Touch and select a sort key, and touch the sorting order ([Asc.]/[Desc.]).

To enable the sort key settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.

Sorting takes place according to the settings of the top key, which has priority.

The sort keys below can be selected.

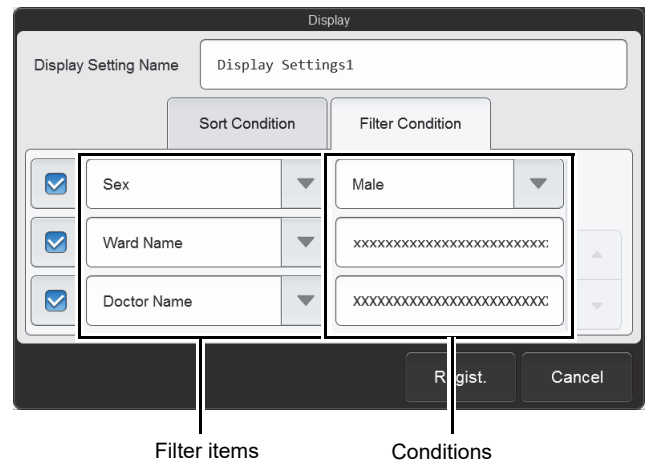
[Patient ID]	Sorts by patient ID.
[Last Name]	Sorts by the patient's last name.
[First Name]	Sorts by the patient's first name.
[Age]	Sorts by the patient's age.
[Sex]	Sorts by the patient's sex.

4 Touch the [Filter Condition] tab.

5 Set the filter conditions.

Touch a filter item, and touch and enter the condition for that item.

To enable the filter settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.



The conditions that can be selected vary by filter item.

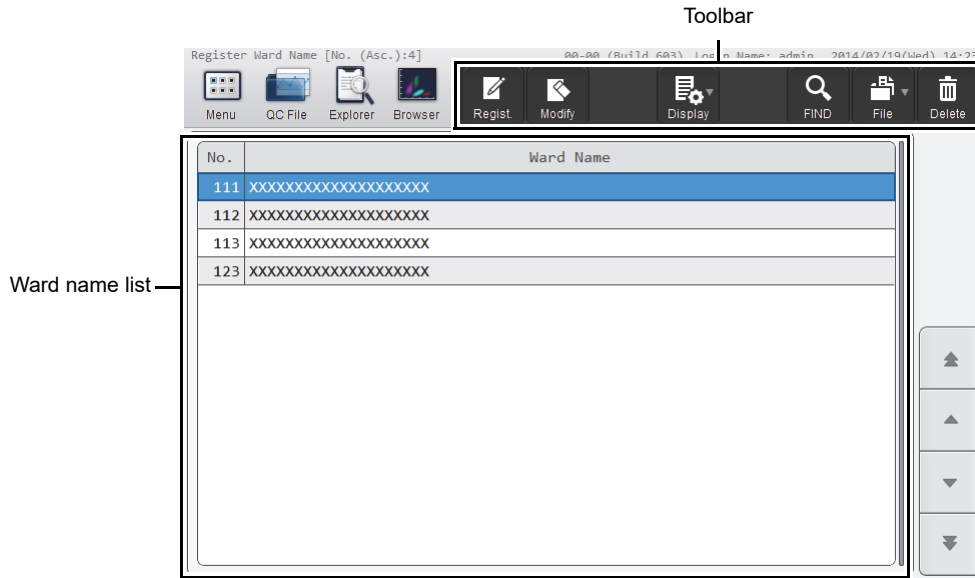
Filter item	Selectable condition	Remarks
[Sex]	[Male] [Female] [(Not input)]	—
[Ward Name]	Enter a ward name. Up to 20 characters can be entered.	If part of the text string is entered, the ward name is retrieved.
[Doctor Name]	Enter a doctor name. Up to 20 characters can be entered.	If part of the text string is entered, the doctor name is retrieved.

6 Touch [Regist.].

The dialog box closes and the set information is registered. The list display changes according to the set conditions.

2.6 [Register Ward Name] screen

Touch the [Register Ward Name] icon in the [Patient List] menu screen to display [Register Ward Name] screen.
 Displayed only if the logged on user has [Display and Modify Patient Info.] permission.



[Register Ward Name] screen

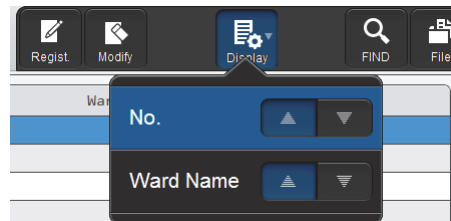
Toolbar	Displays the function buttons.
[Regist.]	Register a new ward name. (▶P.46 "2.3.5 Registering ward names")
[Modify]	Use to modify the ward name selected in the ward name list. (▶P.47 "2.3.6 Modifying or deleting ward names")
[Display]	Touch to open a submenu that allows you to change the sorting order of the ward name list. (▶P.67 "2.6.1 Changing the sorting order of the ward name list (display settings)")
[FIND]	Use to search for a ward name. (▶P.48 "2.3.7 Searching for ward names")
[File]	Touch to open a submenu that allows you to output ward names. [Output in CSV Format]: Use to save the ward name in CSV format. (▶P.49 "2.3.8 Saving ward names in CSV format")
[Delete]	Use to delete the data selected in the ward name list. (▶P.47 "2.3.6 Modifying or deleting ward names")
Ward name list	Displays a list of the ward names.

2.6.1 Changing the sorting order of the ward name list (display settings)

The sorting order of the ward name list can be changed.
Follow the steps below to sort a ward name.

1 Touch the [Display] button on the toolbar in the [Register Ward Name] screen.

The submenu on the right appears.



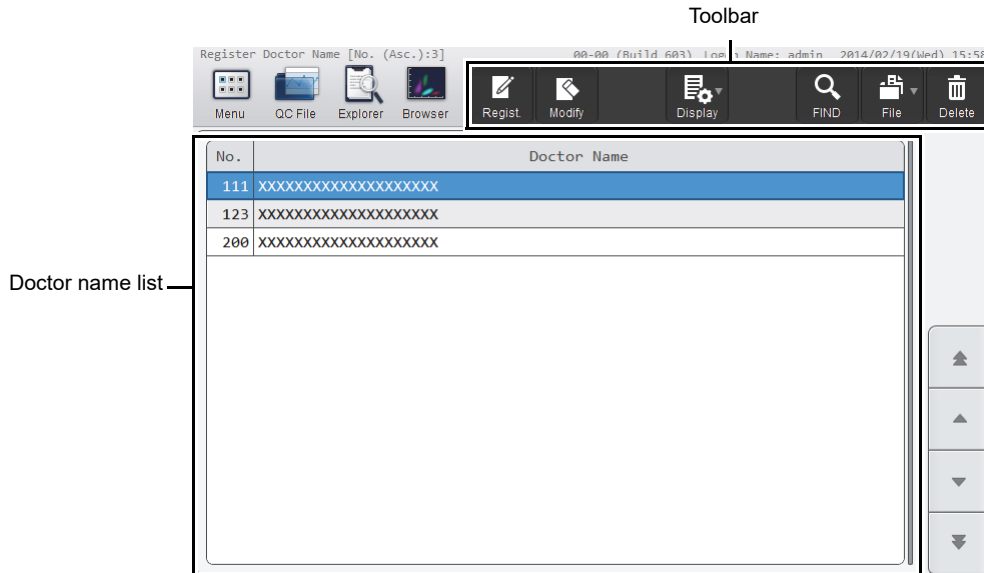
2 Touch the desired display method.

The submenu closes and the list is sorted.

[No.]	Touch [▲] to sort the numbers in ascending order. Touch [▼] to sort the numbers in descending order.
[Ward Name]	Touch [▲] to sort the ward names in ascending order. Touch [▼] to sort the ward names in descending order.

2.7 [Register Doctor Name] screen

Touch the [Register Doctor Name] icon in the [Patient List] menu screen to display the [Register Doctor Name] screen. Displayed only if the logged on user has [Display and Modify Patient Info.] permission.



[Register Doctor Name] screen

Toolbar	Displays the function buttons.
[Regist.]	Use to register a new doctor name. (▶P.50 "2.3.9 Registering doctor names")
[Modify]	Use to modify the doctor name selected in the doctor name list. (▶P.51 "2.3.10 Modifying or deleting doctor names")
[Display]	Touch to open a submenu that allows you to change the sorting order of the doctor name list. (▶P.68 "2.7.1 Changing the sorting order of the doctor name list (display settings)")
[FIND]	Use to search for the doctor name. (▶P.52 "2.3.11 Searching for doctor names")
[File]	Touch to open a submenu that allows you to output the doctor name. [Output in CSV Format]: Use to save the doctor name in CSV format. (▶P.52 "2.3.12 Saving doctor names in CSV format")
[Delete]	Use to delete the data selected in the doctor name list. (▶P.51 "2.3.10 Modifying or deleting doctor names")
Doctor name list	Displays a list of the doctor names.

2.7.1 Changing the sorting order of the doctor name list (display settings)

The sorting order of the doctor name list can be changed.

The procedure is the same as for changing the sorting order of the ward name list. See the following.

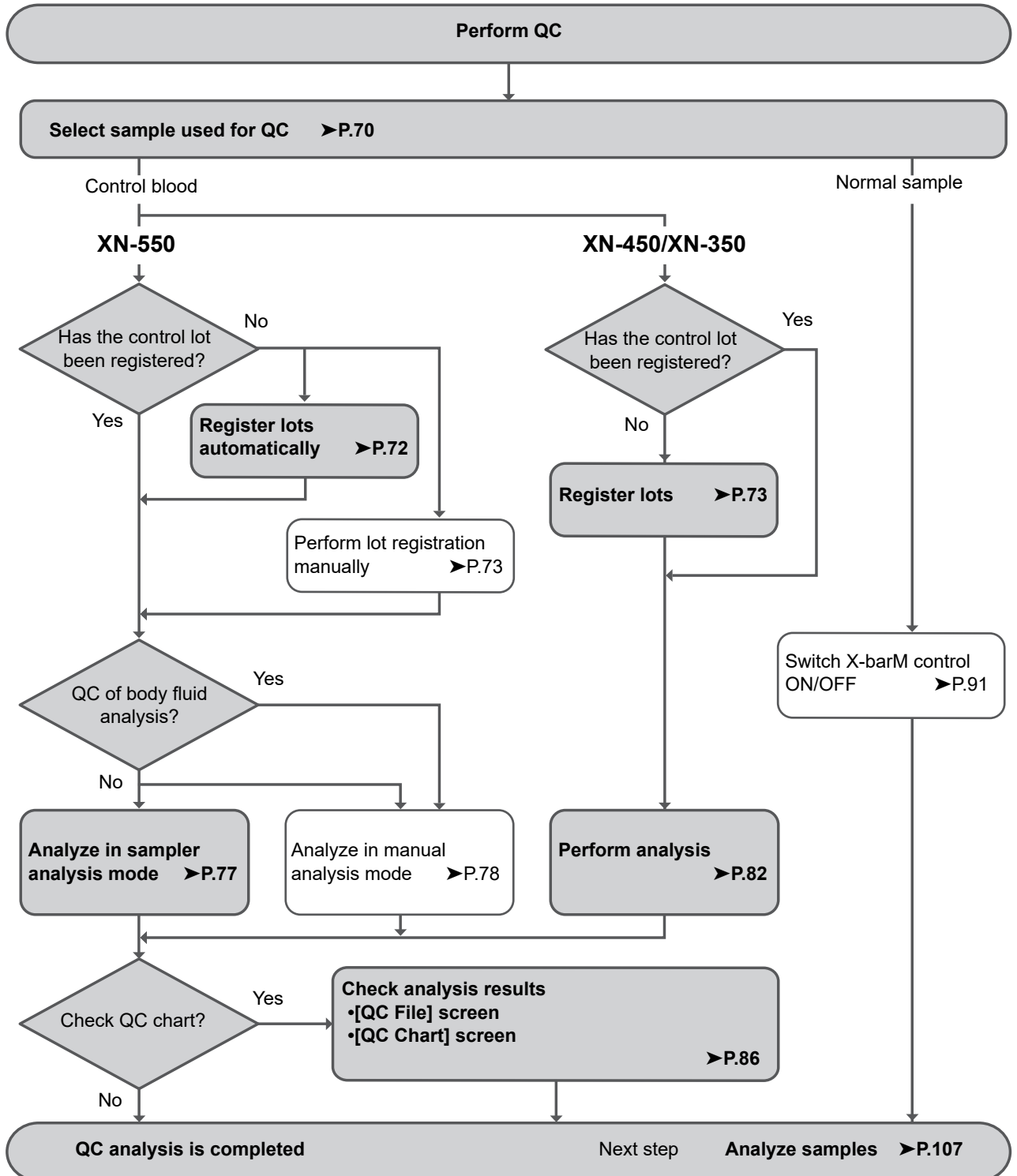
(▶P.67 "2.6.1 Changing the sorting order of the ward name list (display settings)")

The sort keys are the number and the doctor name.

Chapter 3 Performing Quality Control (QC)

3.1 Flow of QC

The flow chart below shows the sequence of QC. The typical flow is shown in gray.



3.2 Overview of QC

QC is the routine monitoring of instrument and reagent performance using control blood or normal samples. Variations of the analysis results are compared daily. When the changes in performance to be detected are significant, you must take action, such as calibration.

3.2.1 Types of QC

The QC techniques below can be used. Use the appropriate method according to your needs.

- QC methods of monitoring of daily variation using control blood

X-bar control: The control blood is analyzed twice in succession, and the average of the 2 results is used as the managed data.

L-J control: The control blood is analyzed once and the result is used as the managed data.

- QC methods of monitoring of daily variation using normal samples

X-barM control: This program calculates a weighted average of batches of 20 samples analyzed in succession and the resulting value is used as the managed data. The number of samples can be set to any number.

- Samples used in QC

QC materials and QC methods are shown below.

QC material	Component	Type of control	Control method
Control	Blood	XN CHECK Level 1	L-J control
		XN CHECK Level 2	
		XN CHECK Level 3	
	XN-L CHECK Level 1	X-bar control	
XN-L CHECK Level 2			
XN-L CHECK Level 3			
	Body fluid*	XN CHECK BF Level 1	L-J control
		XN CHECK BF Level 2	X-bar control
Normal sample	Blood	-	X-barM control

* Only when the instrument has the body fluid analysis function.



Information

When performing X-bar control or L-J control, use the specified control blood only. Control blood is specifically tailored to the analysis technology of the instrument.

3.2.2 When QC analysis is performed

Quality control is performed in order to monitor an instrument's performance over time.

XN CHECK, XN-L CHECK, and XN CHECK BF* are the quality control materials used to monitor the performance of the XN-L analyzer.

Quality control should be run according to licensing agency regulations.

It should be noted that for troubleshooting purposes, additional control runs may be necessary.

* Only when the instrument has the body fluid analysis function.

**Note:**

You can have a message displayed at a selected interval to prompt the operator to perform QC (QC alarm). For details on the QC alarm settings, see Chapter 7.
(►P.213 "Chapter 7: 7.7.2 QC alarm settings")

3.2.3 QC files

A QC file is a file in which QC analysis results are saved by control blood lot.

The instrument has 99 QC files. L-J control or X-bar control data can be saved in QC file numbers QC01 to QC96. QC file numbers QC97 to QC99 are used for X-barM control, and QC data of CBC, DIFF, and RET* are saved in that order.

Before performing QC analysis for the first time, or before performing QC analysis with a new control blood, a QC file must be selected and lot information must be registered.

For details on registering lot information, see the following.

- To register lots automatically in sampler analysis (XN-550 only)
(►P.72 "3.4 Registering lots automatically (XN-550)")
- Other cases
(►P.73 "3.5 Registering lots")

* QC file QC99 cannot be used when the instrument does not have the RET analysis function.

**Note:**

- When registering lots automatically on the XN-550, the QC file with the lowest number that does not have lot information registered is selected. If all QC files have lot information registered, the data in the unused file with the oldest lot registration date is deleted, and the lot information is registered in that file.
- A maximum of 300 QC analysis results are saved in a QC file. When 300 analysis results are exceeded, the analysis result with the oldest date and time is automatically deleted.

3.3 Configuring QC settings

Before performing QC, configure the following settings.

- QC method (X-bar control or L-J control)
- Limit settings
- X-barM batch settings
- X-barM control settings

For the setting procedures, see the following.

- (►P.91 "3.9 Switching X-barM control ON/OFF")
- (►P.212 "Chapter 7: 7.7.1 QC settings")

3.4 Registering lots automatically (XN-550)

When QC analysis is performed in sampler analysis mode, the instrument reads the information in the assay file immediately before analysis. This automatically registers the lot information in the QC file.



Information

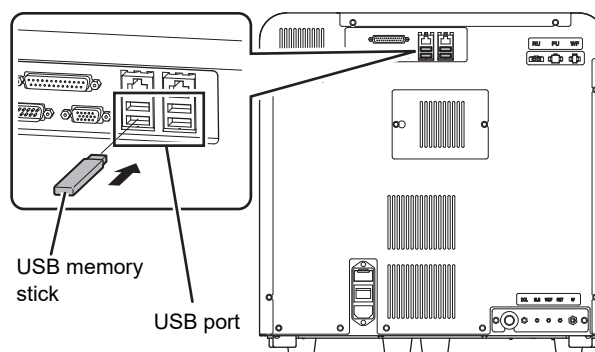
- In the cases below, QC analysis cannot be performed in sampler analysis mode. Perform QC analysis in manual analysis mode.
 - X-bar control
 - QC of body fluid analysis
- To perform QC analysis in sampler analysis mode, barcodes must be used. For the barcode reader settings, see Chapter 7.
 - (▶P.235 "Chapter 7: 7.9.4 Barcode reader settings (XN-550)")

● When the instrument is connected to SNCS

This procedure is not necessary.

● When the instrument is not connected to SNCS

- Copy the assay file to the root directory of the USB memory stick, and insert the USB memory stick in the USB port on the back of the instrument. To obtain the assay file, contact your Sysmex service representative.
- A USB memory stick with a password lock function cannot be used.



Note:

Lot information (expiration date, target value, limit value) is acquired from the assay file using the lot number as key. The acquired information is registered in the file with the lowest file number that does not have a file registered in QC files* QC01 to QC96.

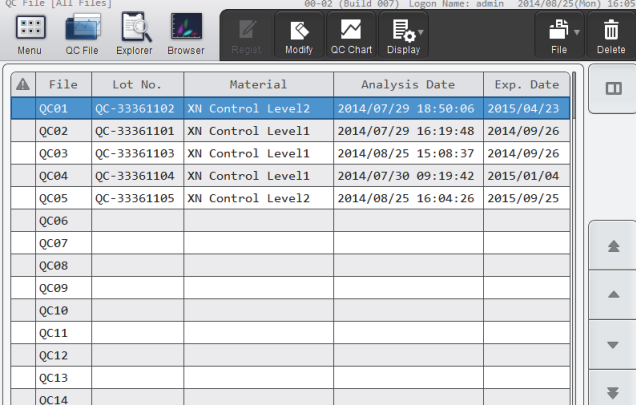
* Excluding files selected in the [QC File] screen or the [QC Chart] screen.

3.5 Registering lots

Follow the steps below to register lots.

1 Touch the [QC File] button on the toolbar.

The [QC File] screen appears.



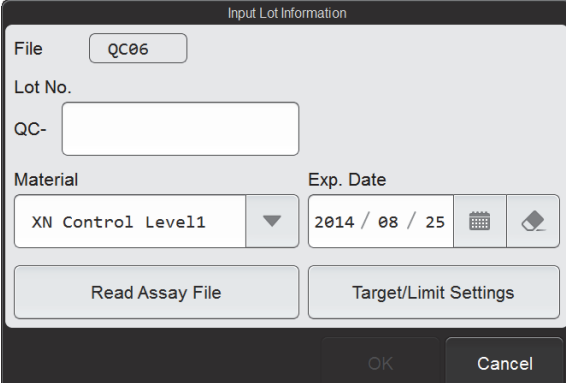
File	Lot No.	Material	Analysis Date	Exp. Date
QC01	QC-33361102	XN Control Level2	2014/07/29 18:50:06	2015/04/23
QC02	QC-33361101	XN Control Level1	2014/07/29 16:19:48	2014/09/26
QC03	QC-33361103	XN Control Level1	2014/08/25 15:08:37	2014/09/26
QC04	QC-33361104	XN Control Level1	2014/07/30 09:19:42	2015/01/04
QC05	QC-33361105	XN Control Level2	2014/08/25 16:04:26	2015/09/25
QC06				
QC07				
QC08				
QC09				
QC10				
QC11				
QC12				
QC13				
QC14				

[QC File] screen

2 Select a QC file that does not have a lot registered.

3 Touch the [Regist.] button on the toolbar.

The [Input Lot Information] dialog box appears.



Input Lot Information

File: QC06

Lot No.:

QC-:

Material: XN Control Level1

Exp. Date: 2014 / 08 / 25

Buttons: Read Assay File, Target/Limit Settings, OK, Cancel

[Input Lot Information] dialog box

4 Touch an item to set the condition.

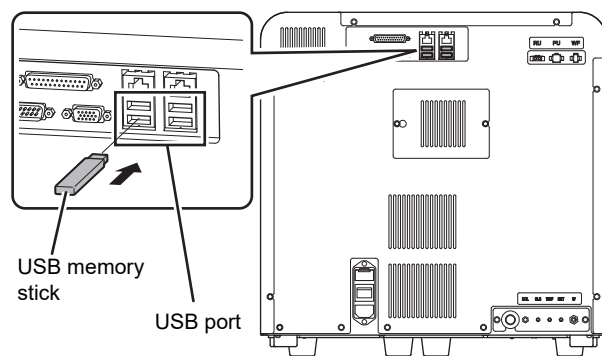
[File]	Displays the selected QC file number.
[Lot No.]	The lot number can be entered. Up to 8 characters can be entered. Double-byte characters cannot be entered. [QC-] is added in front of this number, which will be the QC sample number. You can also input the number by reading the assay file information barcode with the hand-held barcode reader.
[Material]	Select the type of control blood. To perform QC using an external QC sample or excess (pooled) blood, set to [Other]. You can also input the type by reading the assay file information barcode with the hand-held barcode reader.
[Exp. Date]	Enter the expiration date of the control blood. You can also input the date by reading the assay file information barcode with the hand-held barcode reader.

● [Read Assay File]

All the information in this dialog box (including information set from [Target/Limit Settings]) can be set by reading the assay file, provided by your Sysmex service representative.

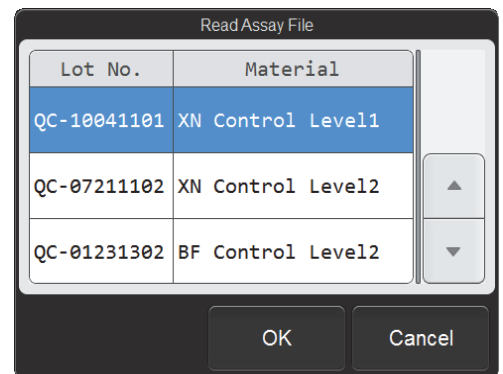
1 Insert the USB memory stick that contains the assay file.

Insert the USB memory stick into a free USB port on the back of the instrument.
A USB memory stick with a password lock function cannot be used.



2 Touch [Read Assay File].

The [Read Assay File] dialog box appears.



[Read Assay File] dialog box

3 Touch the file to be registered.

The touched assay file is selected.

4 Touch [OK].

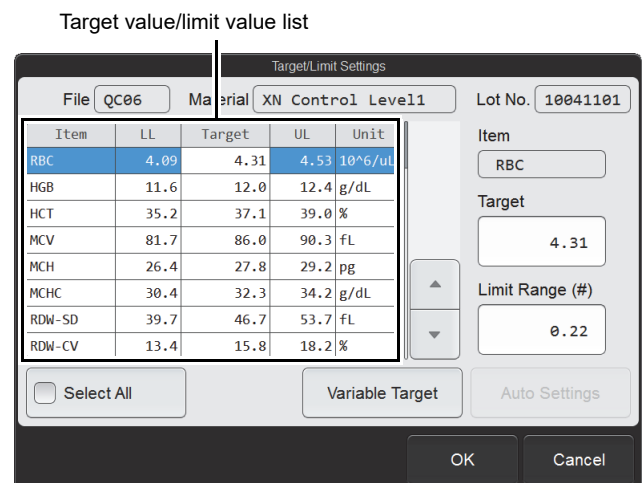
The contents of the selected assay file are read and set in the items.

5 Remove the USB memory stick.

5 Touch [Target/Limit Settings].

The [Target/Limit Settings] dialog box appears.

If the lot information is read using [Read Assay File] function, this dialog box item is already set. Make sure that the setting is finished and then proceed to step 7.



[Target/Limit Settings] dialog box

6 Set the target value and limit range.

Manual settings

The value of the analysis parameter selected in the target value/limit value list appear in [Target] or [Limit Range (#)] on the right side of the dialog box. Enter values in the input fields on the right side to set the target value and limit value for each analysis parameter.

You can also input the values by reading the assay file information barcode with the hand-held barcode reader.

● [Variable Target]

This function automatically calculates and sets the target value from the QC analysis results.

The target value is the average value of the analysis results, excluding the most recent result.

When the number of analysis results is zero: 0

If [Limit Setting] is [Ratio (%)], the limit range will be 100% and the minimum number of significant digits for each QC parameter will appear on the grid.

For details on [Limit Setting], see Chapter 7.

(►P.212 "Chapter 7: 7.7.1 QC settings")

When the number of analysis results is 1: That value

When the number of analysis results is 2 or more: The average value, excluding the most recent analysis result

If a "0" is entered in [Target] or it is left blank, it will be processed as a variable target.

If you want to change the target value of the selected analysis parameter to a variable target, touch [Variable Target]. The target value of the selected analysis parameter changes to the un-entered state. To change the target values of all analysis parameters to a variable target, select the [Select All] checkbox and touch [Variable Target].

[Auto Settings]

The target value and limit range can be set using any QC analysis result.

This function cannot be used when registering a lot.

For details on the auto settings, see the following.

(►P.92 "3.10.1 Modifying lot information")

7 Touch [OK].

The [Target/Limit Settings] dialog box closes and you return to the [Input Lot Information] dialog box.



Information

If [Material] is changed, the contents of the [Target/Limit Settings] dialog box are reset to the values that appeared when the [Input Lot Information] dialog box was displayed.

8 Touch [OK].

The set information is registered and the [Input Lot Information] dialog box closes.

3.6 Performing QC analysis

3.6.1 Performing QC analysis in sampler analysis mode (XN-550)



Information

- In the cases below, QC analysis cannot be performed in sampler analysis mode. Perform QC analysis in manual analysis mode. (►P.78 "3.6.2 Performing QC analysis in manual analysis mode (XN-550)")
 - X-bar control
 - QC of body fluid analysis
 - If you are not using barcodes.
- To perform QC analysis in sampler analysis mode, barcodes must be used. For the barcode reader settings, see Chapter 7. (►P.235 "Chapter 7: 7.9.4 Barcode reader settings (XN-550)")

Before performing QC analysis for the first time, or before performing QC analysis with a new control blood, a QC file must be selected and lot information must be registered.

For details on registering lot information, see the following.

- Automatic registration when performing sampler analysis (XN-550 only) (►P.72 "3.4 Registering lots automatically (XN-550)")
- Other cases (►P.73 "3.5 Registering lots")

Place the vial containing the control blood in the sampler adapter, and analyze the control blood in sampler analysis mode.

For the analysis procedure, see Chapter 4.

(►P.113 "Chapter 4: 4.4 Analyzing samples using sampler analysis (XN-550)")

Check the QC analysis results in the radar chart of the [QC File] screen or in the [QC Chart] screen. For the checking procedure, see the following.

(►P.86 "3.7 Checking analysis results")



Note:

- If QC is performed with multiple differing lots, the vials of the lots can be placed together in the sampler adapter to perform multiple QC analyses in 1 sampler analysis run.
- If you want to perform normal analysis immediately after QC analysis, place the sample for normal analysis in the sampler adapter with the vials and start analysis. Place the sample tube for normal analysis in the position that will be analyzed after the vials.

3.6.2 Performing QC analysis in manual analysis mode (XN-550)



Caution!

The instrument does not mix the control blood. Be sure to perform mixing immediately before starting analysis.

Before performing QC analysis for the first time, or before performing QC analysis with a new control blood, a QC file must be selected and lot information must be registered.

For details on registering lot information, see the following.

(►P.73 "3.5 Registering lots")

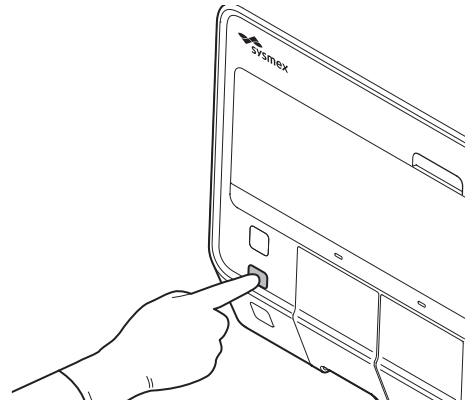
Follow the steps below to perform QC analysis.

1 Make sure the instrument is in the ready state.

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

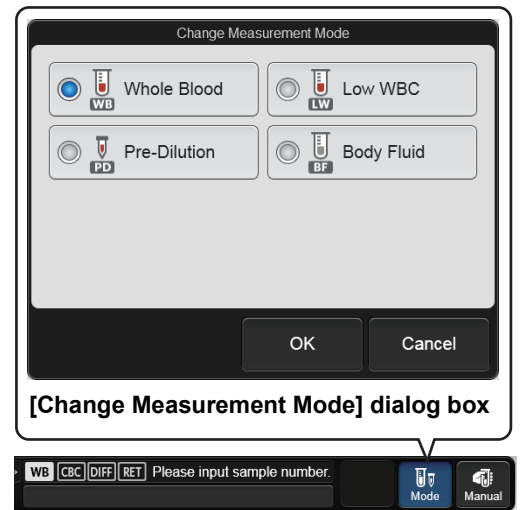
2 Make sure the button on the right edge of the control menu is [Manual]. When the mode is set to [Sampler], press the mode switch.

The mode changes to manual analysis mode.



3 Touch [Mode] on the control menu.

The [Change Measurement Mode] dialog box appears.
The analysis modes that appear depend on your system configuration.



4 Touch the analysis mode.

The touched analysis mode is selected.
For blood, select [Whole Blood] mode. For body fluid, select [Body Fluid] mode.

5 Touch [OK].

The dialog box closes.

6 Touch the [QC] icon in the [Menu] screen.

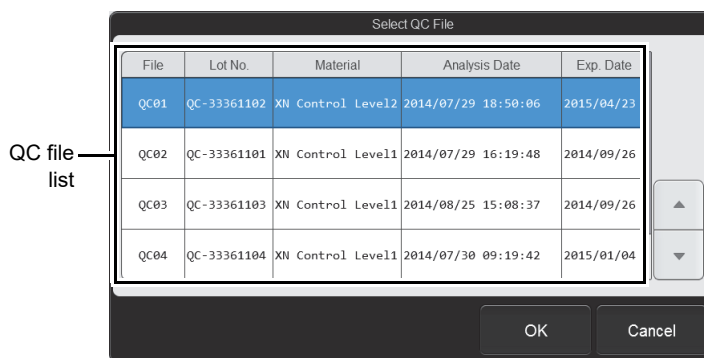
The [QC] menu screen appears.



[QC] menu screen

7 Touch the [QC Analysis] icon.

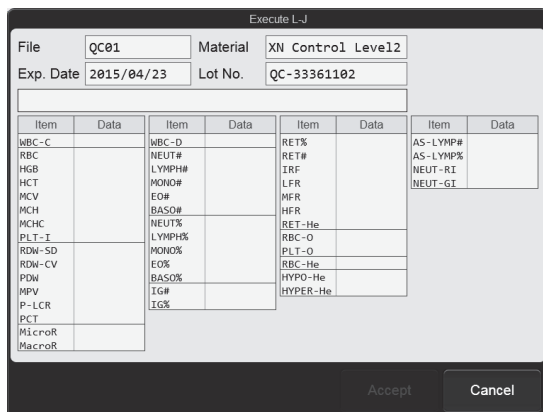
The [Select QC File] dialog box appears.



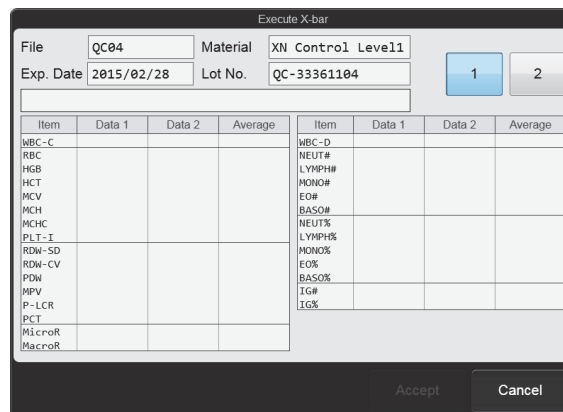
[Select QC File] dialog box

8 From the QC file list, touch the file you want to analyze.

The dialog box* below appears.



L-J control



X-bar control

* The analysis parameters that appear vary depending on your system configuration and the type of QC file.

9 Perform manual analysis.

For X-bar control, analyze the same control blood twice in succession.

For the analysis procedure, see Chapter 4.

► P.119 "Chapter 4: 4.5 Analyzing samples using manual analysis (XN-550)" Step 9 and following steps



Note:

Should an error occur (such as insufficient control blood) during analysis, an alarm will sound. To stop the alarm, touch any place on the touchscreen. A [Help] dialog box with information on the error cannot be opened until analysis finishes. For details on [Help] dialog box, see "Troubleshooting". (►Troubleshooting, "Chapter 1: 1.2 [Help] dialog box")

10 Check the analysis results.

When analysis finishes, the analysis results appear in the dialog box.

Execute L-J							
File	QC01		Material XN Control Level12				
Exp. Date	2015/04/23		Lot No. QC-33361102				
Item	Data	Item	Data	Item	Data	Item	Data
WBC-C	7.51	WBC-D	7.04	RET%	2.00	AS-LYMP#	0.43
RBC	4.30	NEUT#	2.95	RET#	0.0060	AS-LYMP%	6.1
HGB	12.8	LYMPH#	2.36	IRF	16.3	NEUT-RI	100.2
HCT	36.0	MONO%	0.60	LFH	83.7	NEUT-GI	175.8
MCV	83.7	EO#	0.65	MFR	14.2		
MCH	29.8	BASO#	0.40	HFR	2.1		
MCHC	35.6	NEUT%	41.9	RET-He	23.6		
PLT-I	246	LYMPH%	33.5	RBC-O	3.77		
RDW-SD	46.8	MONO%	9.7	PLT-O	214		
RDW-CV	15.2	EO%	9.2	RBC-He	28.3		
PDW	8.5	BASO%	5.7	HYPO-He	0.3		
MPV	9.4	IG#	0.74	HYPER-He	0.3		
P-LCR	16.2	IG%	10.5				
PCT	0.23						
MicroR	3.7						
MacroR	3.9						

Error message field

L-J control

Execute X-bar								
File	QC04		Material XN Control Level11					
Exp. Date	2015/02/28		Lot No. QC-33361104					
Item	Data 1	Data 2	Average	Item	Data 1	Data 2	Average	
WBC-C	9.82	7.51	8.67	WBC-D	9.23	7.04	8.14	
RBC	5.19	4.30	4.75	NEUT#	3.94	2.95	3.45	
HGB	13.0	12.8	12.9	LYMPH#	2.79	2.36	2.58	
HCT	44.0	36.0	40.0	MONO%	1.01	0.60	0.85	
MCV	84.8	83.7	84.3	EO%	0.96	0.65	0.81	
MCH	25.0	29.8	27.4	BASO#	0.53	0.40	0.47	
MCHC	29.5	35.6	32.6	NEUT%	42.8	41.9	42.4	
PLT-I	283	246	265	LYMPH%	30.2	33.5	31.9	
RDW-SD	45.8	46.8	46.3	MONO%	10.9	9.7	10.3	
RDW-CV	14.7	15.2	15.0	EO%	10.4	9.2	9.8	
PDW	10.3	8.5	9.4	BASO%	5.7	5.7	5.7	
MPV	10.4	9.4	9.9	IG#	1.00	0.74	0.87	
P-LCR	25.8	16.2	21.0	IG%	10.8	10.5	10.7	
PCT	0.29	0.23	0.26					
MicroR	2.8	3.7	3.3					
MacroR	4.3	3.9	4.1					

Error message field

Page change buttons

X-bar control

An abnormality in the analysis results is indicated by the following.

- The name and value of the analysis parameter that is abnormal is shown in white on a red background.
- The warning icon appears on the page change button. (Only in X-bar control on an instrument with the RET analysis function.)
- An error message appears.

[Check control chart]: Indicates that the analysis data exceeds the limit.

[Data error, repeat test]: Indicates that the analysis data exceeds the limit by at least 3 times.

11 Touch [Accept].

The analysis results are saved in the QC file and the dialog box closes.



Note:

- To close the dialog box without saving the analysis results in the QC file, touch [Cancel].
- Regardless of whether or not the analysis results are saved in the QC file, they are saved as analysis result data in the [Sample Explorer] screen when analysis finishes.

Check the detailed analysis results in the radar chart of the [QC File] screen or in the [QC Chart] screen.

For details on checking the analysis results, see the following.

►P.86 "3.7 Checking analysis results"

3.6.3 Performing QC analysis (XN-450/XN-350)



Caution!

The instrument does not mix the control blood. Be sure to perform mixing immediately before starting analysis. Follow the instructions included in the package insert of the quality control material for information on the mixing procedure.

Before performing QC analysis for the first time, or before performing QC analysis with a new control blood, a QC file must be selected and lot information must be registered.

For details on registering lot information, see the following.

(►P.73 "3.5 Registering lots")

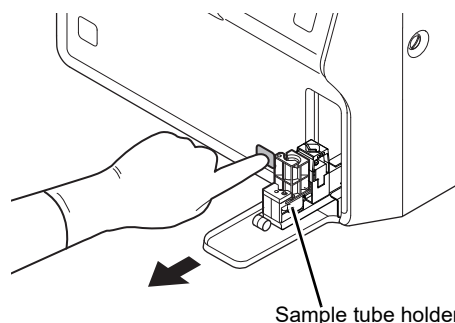
Follow the steps below to perform QC analysis.

1 Make sure the instrument is in the ready state.

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

2 If the sample tube holder is not ejected, press the sample tube holder open/close switch. (XN-450)

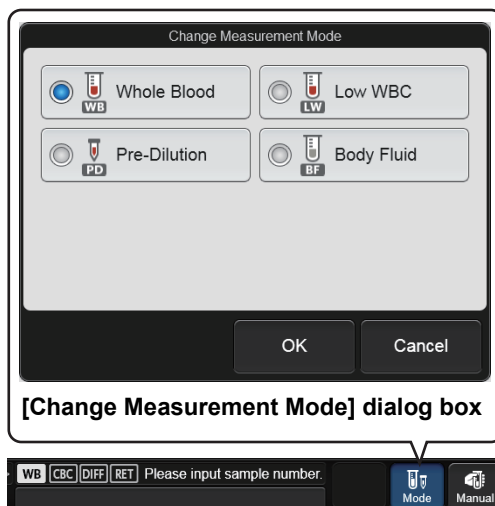
The sample tube holder is ejected.



3 Touch [Mode] on the control menu.

The [Change Measurement Mode] dialog box appears.

The analysis modes that appear depend on your system configuration.



4 Touch the analysis mode.

The touched analysis mode is selected.

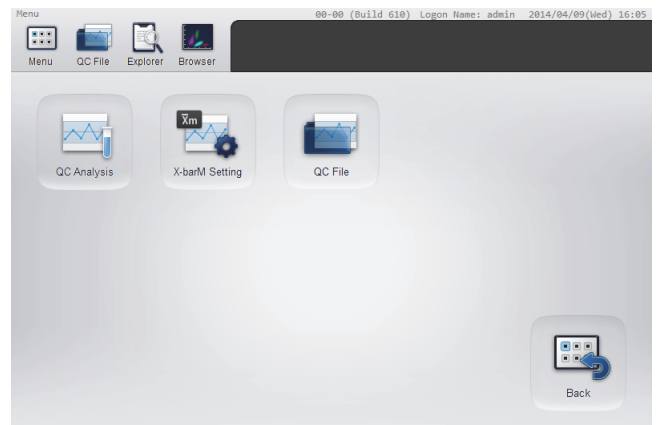
For blood, select [Whole Blood] mode. For body fluid, select [Body Fluid] mode.

5 Touch [OK].

The dialog box closes.

6 Touch the [QC] icon in the [Menu] screen.

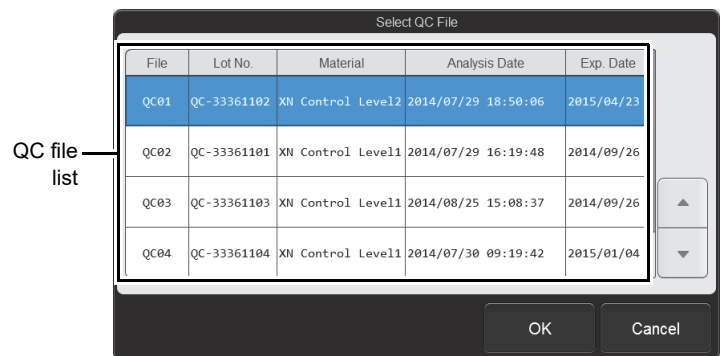
The [QC] menu screen appears.



[QC] menu screen

7 Touch the [QC Analysis] icon.

The [Select QC File] dialog box appears.



[Select QC File] dialog box

8 From the QC file list, touch the file you want to analyze.

The dialog box * below appears.

Execute L-J

File: QC01 Material: XN Control Level12
 Exp. Date: 2015/04/23 Lot No.: QC-33361102

Item	Data	Item	Data	Item	Data	Item	Data
WBC-C		WBC-D		RET%		AS-LYMP#	
RBC		NEUT#		RET#		AS-LYMP%	
HGB		LYMPH#		IRF		NEUT-RI	
HCT		MONO#		LF#		NEUT-GI	
MCV		EO#		MFR			
MCH		BASO#		HFR			
MCHC		NEUT%		RET-He			
PLT-I		LYMPH%		RBC-O			
RDW-SD		MONO%		PLT-O			
RDW-CV		EO%		RBC-He			
PDW		BASO%		HYP0-He			
MPV		IG#		HYP0R-He			
P-LCR		IG%					
PCT							
MicroR							
MacroR							

Accept Cancel

L-J control

Execute X-bar

File: QC04 Material: XN Control Level11
 Exp. Date: 2015/02/28 Lot No.: QC-33361104

1 2

Item	Data 1	Data 2	Average	Item	Data 1	Data 2	Average
WBC-C				WBC-D			
RBC				NEUT#			
HGB				LYMPH#			
HCT				MONO#			
MCV				EO#			
MCH				BASO#			
MCHC				NEUT%			
PLT-I				LYMPH%			
RDW-SD				MONO%			
RDW-CV				EO%			
PDW				BASO%			
MPV				IG#			
P-LCR				IG%			
PCT							
MicroR							
MacroR							

Accept Cancel

X-bar control

* The analysis parameters that appear vary depending on your system configuration and the type of QC file.

9 Perform manual analysis.

For X-bar control, analyze the same control blood twice in succession.

For the analysis procedure, see Chapter 4.

- XN-450:
 (►P.125 "Chapter 4: 4.6 Analyzing samples (XN-450)" Step 9 and following steps)
- XN-350:
 (►P.130 "Chapter 4: 4.7 Analyzing samples (XN-350)" Step 8 and following steps)



Note:

Should an error occur (such as insufficient control blood) during analysis, an alarm will sound. To stop the alarm, touch any place on the touchscreen. A [Help] dialog box with information on the error cannot be opened until analysis finishes. For details on [Help] dialog box, see "Troubleshooting". (►Troubleshooting, "Chapter 1: 1.2 [Help] dialog box")

10 Check the analysis results.

When analysis finishes, the analysis results appear in the dialog box.

Execute L-J							
File	QC01		Material XN Control Level12				
Exp. Date	2015/04/23		Lot No. QC-33361102				
Item	Data	Item	Data	Item	Data	Item	Data
WBC-C	7.51	WBC-D	7.04	RET%	2.00	AS-LYMP#	0.43
RBC	4.30	NEUT#	2.95	RET#	0.0060	AS-LYMP%	6.1
HGB	12.8	LYMPH%	2.36	IRF	16.3	NEUT-RI	100.2
HCT	36.0	MONO%	0.60	LFH	83.7	NEUT-GI	175.8
MCV	83.7	EO#	0.65	MFR	14.2		
MCH	29.8	BASO#	0.40	HFR	2.1		
MCHC	35.6	NEUT%	41.9	RET-He	23.6		
PLT-I	246	LYMPH%	33.5	RBC-O	3.77		
RDW-SD	46.8	MONO%	9.7	PLT-O	214		
RDW-CV	15.2	EO%	9.2	RBC-He	28.3		
PDW	8.5	BASO%	5.7	HYPO-He	0.3		
MPV	9.4	IG#	0.74	HYPER-He	0.3		
P-LCR	16.2	IG%	10.5				
PCT	0.23						
MicroR	3.7						
MacroR	3.9						

Error message field

L-J control

Execute X-bar							
File	QC04		Material XN Control Level11				
Exp. Date	2015/02/28		Lot No. QC-33361104				
Item	Data 1	Data 2	Average	Item	Data 1	Data 2	Average
WBC-C	9.82	7.51	8.67	WBC-D	9.23	7.04	8.14
RBC	5.19	4.30	4.75	NEUT#	3.94	2.95	3.45
HGB	13.0	12.8	12.9	LYMPH%	2.79	2.36	2.58
HCT	44.0	36.0	40.0	MONO%	1.01	0.60	0.85
MCV	84.8	83.7	84.3	EO%	0.96	0.65	0.81
MCH	25.0	29.8	27.4	BASO#	0.53	0.40	0.47
MCHC	29.5	35.6	32.6	NEUT%	42.8	41.9	42.4
PLT-I	283	246	265	LYMPH%	30.2	33.5	31.9
RDW-SD	45.8	46.8	46.3	MONO%	10.9	9.7	10.3
RDW-CV	14.7	15.2	15.0	EO%	10.4	9.2	9.8
PDW	10.3	8.5	9.4	BASO%	5.7	5.7	5.7
MPV	10.4	9.4	9.9	IG#	1.00	0.74	0.87
P-LCR	25.8	16.2	21.0	IG%	10.8	10.5	10.7
PCT	0.29	0.23	0.26				
MicroR	2.8	3.7	3.3				
MacroR	4.3	3.9	4.1				

Error message field

Page change buttons

X-bar control

An abnormality in the analysis results is indicated by the following.

- The name and value of the analysis parameter that is abnormal is shown in white on a red background.
- The warning icon appears on the page change button. (Only in X-bar control on an instrument with the RET analysis function.)
- An error message appears.

[Check control chart]: Indicates that the analysis data exceeds the limit.

[Data error, repeat test]: Indicates that the analysis data exceeds the limit by at least 3 times.

11 Touch [Accept].

The analysis results are saved in the QC file and the dialog box closes.



Note:

- To close the dialog box without saving the analysis results in the QC file, touch [Cancel].
- Regardless of whether or not the analysis results are saved in the QC file, they are saved as analysis result data in the [Sample Explorer] screen when analysis finishes.

Check the detailed analysis results in the radar chart of the [QC File] screen or in the [QC Chart] screen.

For details on checking the analysis results, see the following.

►P.86 "3.7 Checking analysis results"

3.7 Checking analysis results

Analysis results and daily variations can be checked in the [QC Chart] screen. The most recent analysis results can also be viewed in a radar chart in the [QC File] screen.


3.7.1 Displaying the [QC Chart] screen

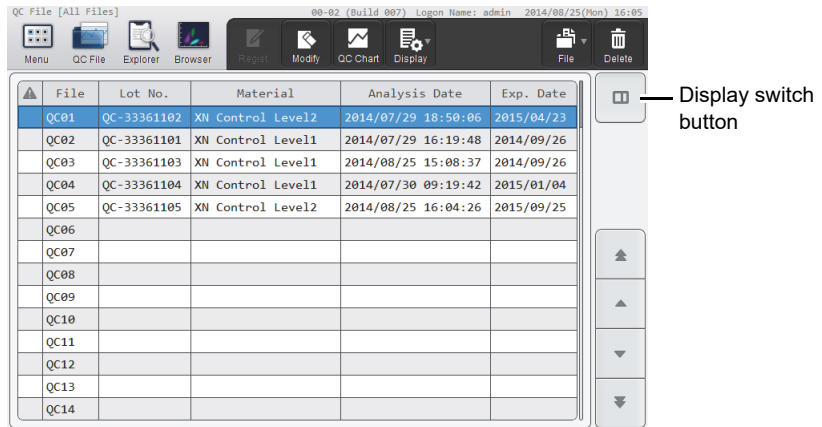
Follow the steps below to display the [QC Chart] screen.

1 Touch the [QC File] button on the toolbar.

The [QC File] screen appears.

If there is an error in the most recent QC analysis results,

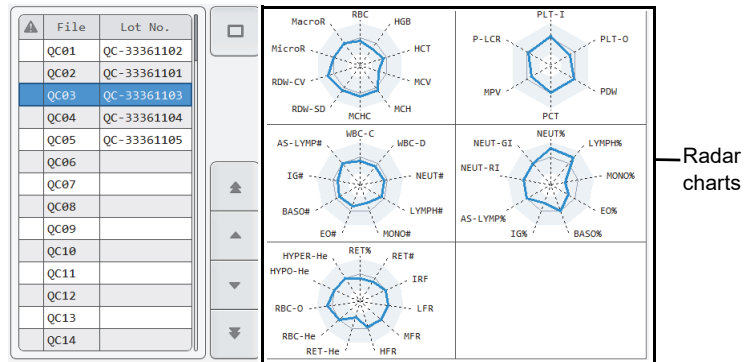
 appears in the first column.



[QC File] screen

Touch the display switch button to display the most recent QC analysis results in the selected QC file as a radar chart.

For details on the [QC File] screen, see the following. (►P.98 "3.11 [QC File] screen")



[QC File] screen (radar chart display)

The radar charts that appear vary depending on your system configuration and the type of QC file.

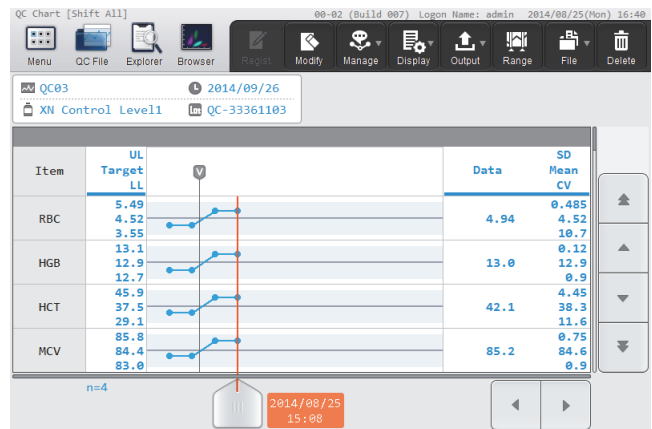
2 Select the QC file you want to check.

3 Touch the [QC Chart] button on the toolbar.

The [QC Chart] screen appears.

For details on the [QC Chart] screen, see the following.

(►P.102 "3.12 [QC Chart] screen")



[QC Chart] screen

3.7.2 Displaying the vial line

The vial line (the line that indicates that the vial was replaced) can be displayed on the QC chart.

Follow the steps below to display the vial line.

1 In the [QC Chart] screen, move the cursor to the data that was analyzed with the new vial.

Touch the chart to move the cursor to data near that position.

2 Touch the [Manage] button - [Vial] on the toolbar.

The vial line appears to the left of the cursor data.

To clear the vial line, repeat this step.

3.7.3 Selecting the QC analysis result range

The following functions can be used after a range of analysis results is selected.

- Target value/limit value auto settings
Automatically sets the target value/limit value using the analysis results of the selected range.
- Output*
Outputs the analysis results of the selected range.
- Delete*
Deletes the analysis results of the selected range.

* If a range is not selected, the cursor data (the QC analysis result selected with the cursor) will be the target of the operation.

Follow the steps below to select analysis result range.

1 Touch the [Range] button on the toolbar in the [QC Chart] screen.

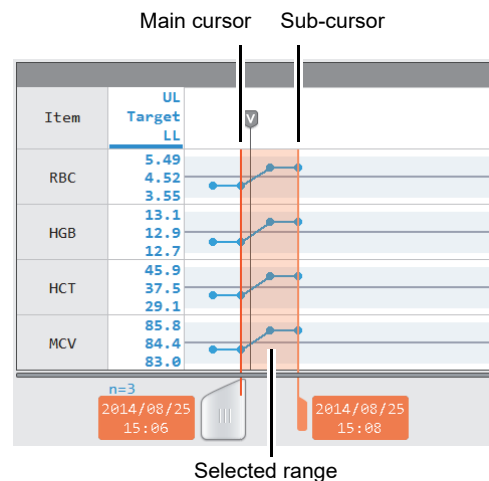
Range selection mode is activated, and a sub-cursor appears on the QC chart.

The sub-cursor is fixed at the position where the main cursor was located to indicate the start point of the range selection.

2 Touch the end point of the range you want to select on the QC chart.

The main cursor is moved to that point, and the range between the sub-cursor and the main cursor is selected.

To cancel range selection mode, touch the [Range] button on the toolbar again.



3.7.4 Deleting analysis results

Unneeded QC analysis results can be deleted, such as when you unintentionally finalize analysis results.



Note:

To delete all QC file data (including lot registration information), see the following.
(►P.94 "3.10.3 Deleting QC file data")

Follow the steps below to delete unnecessary analysis results.

1 Select the analysis result you want to delete in the [QC Chart] screen.

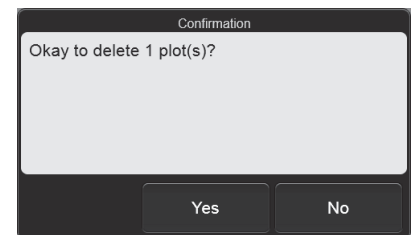
To delete 1 analysis result, move the cursor to the analysis result you want to delete. Touch the chart to move the cursor to data near that position.

To delete a selected range of multiple analysis results, change to range selection mode and select the range. For the range selection procedure, see the following.

(►P.88 "3.7.3 Selecting the QC analysis result range")

2 Touch the [Delete] button on the toolbar.

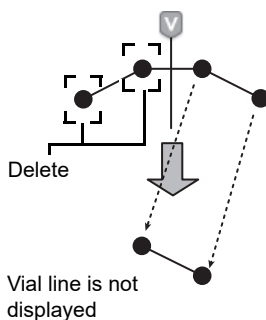
The dialog box on the right appears.



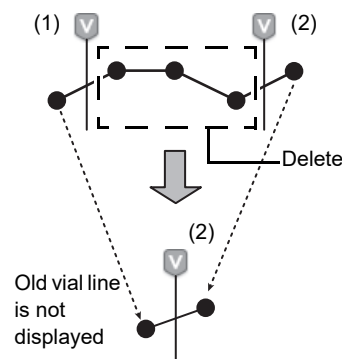
3 Touch [Yes].

The selected analysis results are deleted.

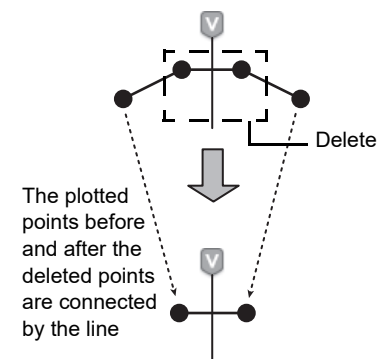
The relationship between the vial line and plotted points is as follows.



All plotted points in front of the vial line are deleted



All plotted points between the vial lines are deleted



Plotted points before and after the vial line are deleted

3.8 Outputting QC analysis results to the host computer or a printer

The QC analysis results selected in the [QC Chart] screen can be output to the output destinations.



Note:

The instrument can be set to automatically output QC analysis results to the host computer or a printer. For details, see Chapter 7. (►P.226 "Chapter 7: 7.8.6 Auto output settings")

Follow the steps below to output to the host computer or a printer.

1 Select the analysis results you want to output in the [QC Chart] screen.

To output 1 analysis result, move the cursor to the analysis result you want to output. Touch the chart to move the cursor to data near that position.

To output a selected range of multiple analysis results, change to range selection mode and select the range. For the range selection procedure, see the following.

(►P.88 "3.7.3 Selecting the QC analysis result range")

2 Touch the output destination from the [Output] button on the toolbar.

Destinations that are not connected are grayed out and cannot be selected.

[Host Computer (HC)]	Output to the host computer.
[Report (GP)]	Output a chart to the graphic printer.
[Ledger (LP)]	Output to a list printer.
[SNCS Manual Transmission]	Output to SNCS.

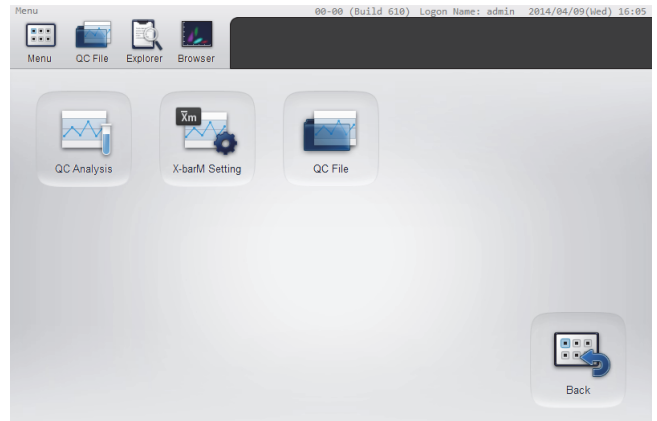
3.9 Switching X-barM control ON/OFF

In instances where you do not want to include an analysis result in the QC data of X-barM control, such as when the sample to be analyzed is abnormal, you can temporarily turn off X-barM control. You can also turn off X-barM control when you do not want to perform control.

Follow the steps below to turn X-barM control ON or OFF.

1 Touch the [QC] icon in the [Menu] screen.

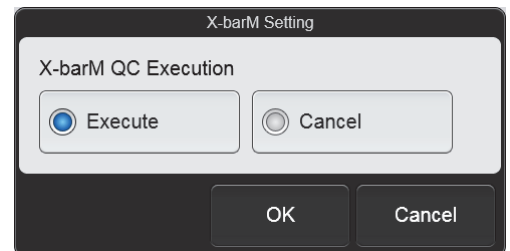
The [QC] menu screen appears.



[QC] menu screen

2 Touch the [X-barM Setting] icon.

The [X-barM Setting] dialog box appears.



[X-barM Setting] dialog box

3 Select X-barM control ON or OFF.

Touch [Execute] to perform X-barM control, or [Cancel] to cancel X-barM control.

4 Touch [OK].

X-barM control ON or OFF is set.



Note:

You can check whether X-barM control is ON or OFF in the Xm status in the control menu.

3.10 Convenient functions

3.10.1 Modifying lot information

Follow the steps below to modify lot information.

1 Display the [Input Lot Information] dialog box.

Use either of the methods below to display the [Input Lot Information] dialog box.

- Select the QC file to be modified in the [QC File] screen, and touch the [Modify] button on the toolbar.
- Display the QC file you want to modify in the [QC Chart] screen, and touch the [Modify] button on the toolbar.

To automatically set the target value/limit range using the QC analysis results, select at least 3 analysis results in the [QC Chart] screen and touch the [Modify] button on the toolbar.

To select analysis results, see the following.

(▶P.88 "3.7.3 Selecting the QC analysis result range")

[Input Lot Information] dialog box

● Auto settings of the target value and limit range

The target value is the average value of the selected QC analysis results.

The limit range is the value that is twice (or 3 times) the standard deviation measured from the selected QC analysis results.

The multiple can be selected in the QC settings. See Chapter 7.

(▶P.212 "Chapter 7: 7.7.1 QC settings")

2 Modify the lot information.

The following items can be modified.

- Lot No.
- Expiration date
- Target value and limit range

For each setting, see the following.

(▶P.73 "3.5 Registering lots")



Note:

[Material] cannot be changed, and thus the [Read Assay File] is grayed out and cannot be selected.

- Auto settings of the target value and limit range

Touch [Auto Settings] in the [Target/Limit Settings] dialog box that appears when [Target/Limit Settings] is touched. The [Auto Settings] dialog box appears.

Select the checkboxes of the values ([Target], [Limit]) to be automatically set, and touch [OK]. The values that are selected are automatically set.

[Auto Settings] dialog box

3 Touch [OK].

The modified settings are saved.

3.10.2 Configuring settings for cursor data (QC analysis results selected with the cursor)

You can select QC analysis results with the cursor (cursor data) in the QC chart, and exclude that data from QC or add comments to the data.

Follow the steps below to configure cursor data settings.

1 In the [QC Chart] screen, move the cursor to the desired analysis result.

Touch the QC chart to move the cursor to data near that position.

2 Touch the [Manage] button - [Cursor Data Management] on the toolbar.

The [Cursor Data Management] dialog box appears.

[Cursor Data Management] dialog box

3 Touch an item to set the condition.

[Specify Excluded]	<p>Select whether or not the cursor data is to be excluded from QC.</p> <p>[Managed]: Include in QC. [Not Managed]: Exclude from QC.</p> <p>This cannot be selected for X-barM control. The data is always included.</p> <p>Data excluded from QC is excluded from the following functions.</p> <ul style="list-style-type: none"> • Auto limit calculation • Variable target calculation • Display of statistical values (SD, Mean, CV) • Display of number of data points n (number of plotted points)
[Comments Settings]	<p>Set to add a comment to the cursor data.</p> <p>[None]: Do not add a comment. [Input Any Comment]: Add a comment entered in [Any Comments]. Fixed comments: Add a comment selected from the comments in [QC Chart Fixed Comment].</p> <p>For the fixed comment settings, see Chapter 7. (►P.214 "Chapter 7: 7.7.3 QC chart fixed comment settings")</p>
[Any Comments]	<p>Enter a comment when [Input Any Comment] is selected in [Comments Settings]. Up to 40 characters can be entered.</p>

4 Touch [OK].

The set information is applied to the cursor data.

3.10.3 Deleting QC file data

Follow the steps below to delete QC file data.



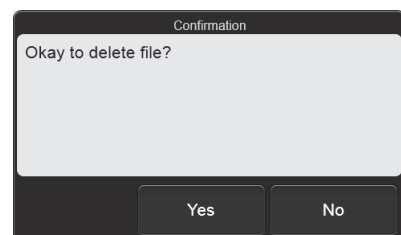
Note:

X-barM control data cannot be deleted.

1 In the [QC File] screen, select the QC file that contains the data you want to delete.

2 Touch the [Delete] button on the toolbar.

The dialog box on the right appears.



3 Touch [Yes].

The deletion starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the deletion is complete.

The data of the QC file is deleted, and the file changes to the lot un-registered state.

3.10.4 Saving QC file data (backup)

QC files can be backed up to a USB memory stick.



Note:

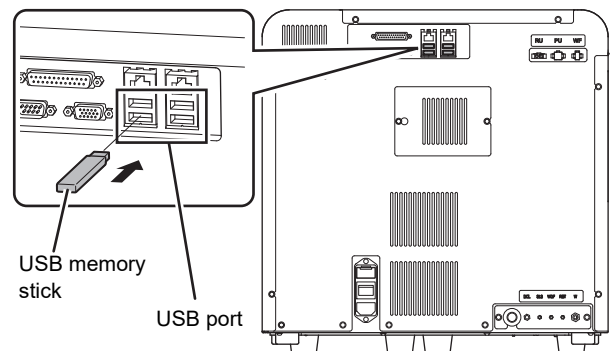
X-barM control data cannot be backed up.

Follow the steps below to save QC file data.

1 Insert the USB memory stick.

Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 In the [QC File] screen, select the QC file that contains the data you want to save.

3 Touch the [File] button - [Backup] on the toolbar.

The backup starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the backup is complete.

4 Remove the USB memory stick.

● Backup directory and file name

When you back up the data, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

[Instrument ID][Software version][Date saved_Time saved][Material][Lot No.].qcf

Example: [XN-XXX][00-01][20140505_080808][Control][12345678].qcf

* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

3.10.5 Restoring saved data (restore)

You can restore saved QC file data.

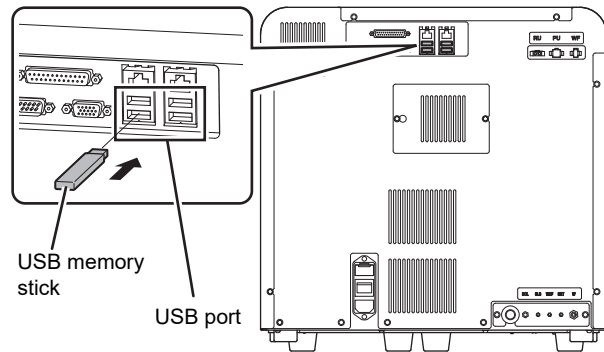
The data is restored to a QC file that does not have a lot registered.

Follow the steps below to restore QC file data.

1 Insert the USB memory stick that contains the backup file.

Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 In the [QC File] screen, select a QC file without a registered lot.

3 Touch the [File] button - [Restore] on the toolbar.

The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the QC file data restore is complete.

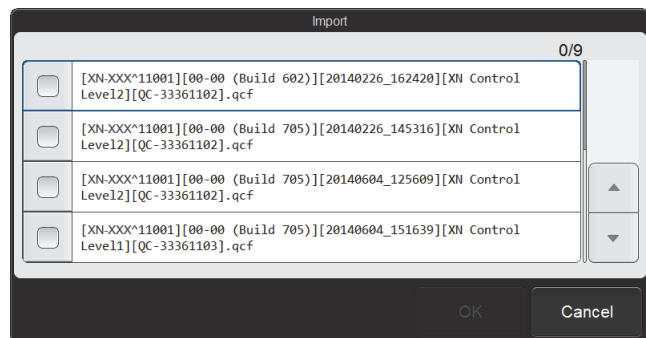


Note:

A file cannot be restored if a QC file with the same lot number already exists.

● When the [Import] dialog box appears

When the USB memory stick contains multiple QC file data, the [Import] dialog box appears.



[Import] dialog box

Follow the steps below to select and restore data.

1 Select the checkboxes of the files you want to restore.

Files with checkmarks will be restored.

Each time you touch the checkbox, the checkbox is selected or unselected.

2 Touch [OK].

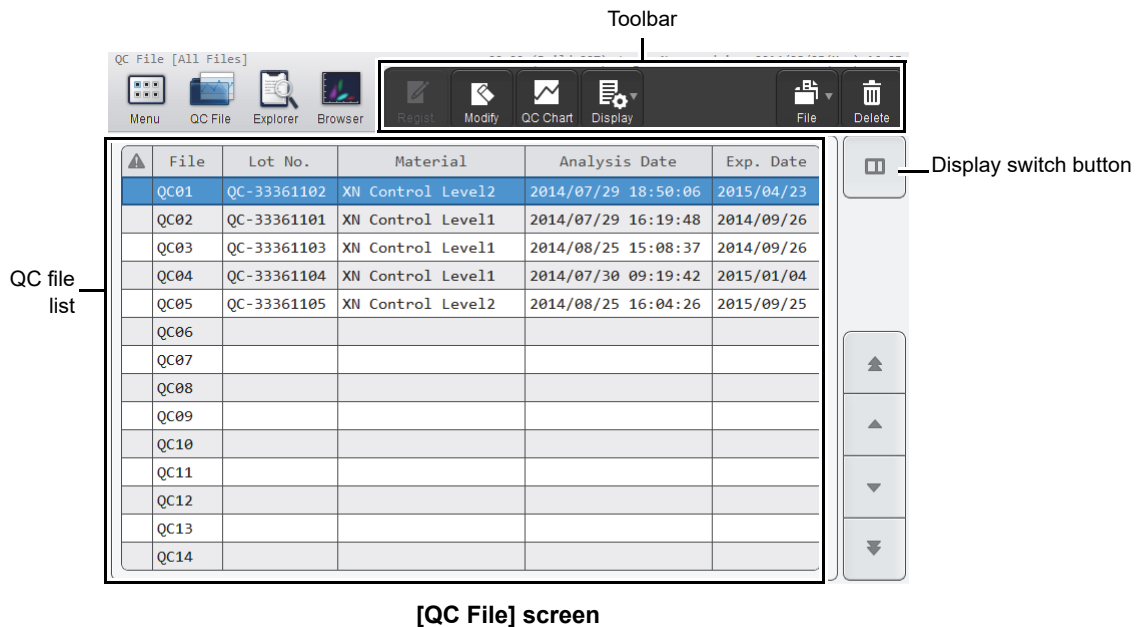
The restore starts and the [Waiting to complete execution] dialog box appears.


The [Waiting to complete execution] dialog box closes when the QC file data restore is complete.

4 Remove the USB memory stick.

3.11 [QC File] screen

Touch the [QC File] icon in the [QC] menu screen or the [QC File] button on the toolbar to display the [QC File] screen.

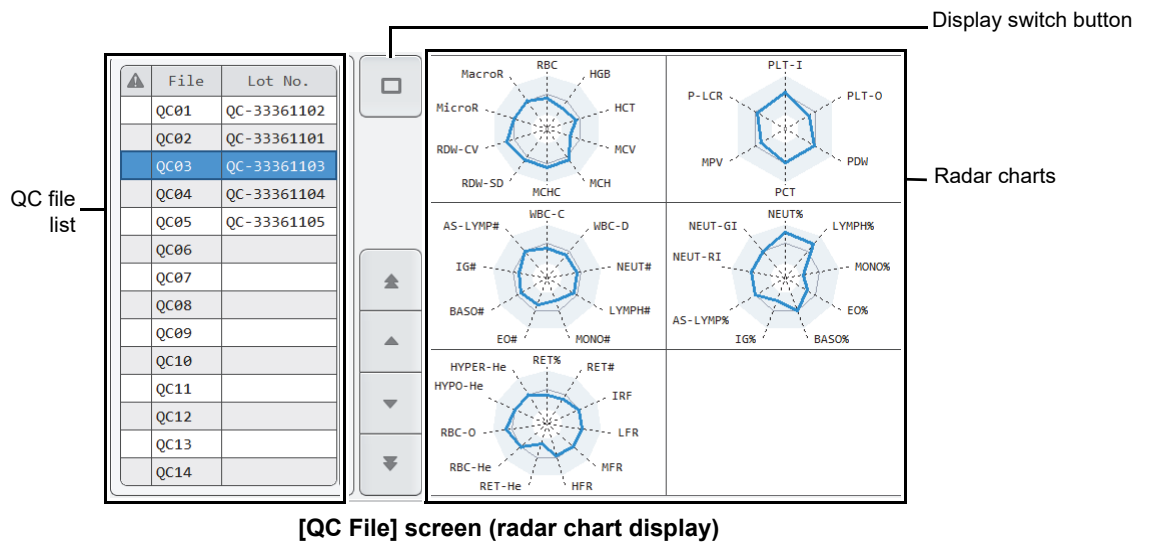


Toolbar	Displays the function buttons.
[Regist.]	Use to register a lot in the selected QC file. (▶P.73 "3.5 Registering lots")
[Modify]	Use to modify lot information in the selected QC file. (▶P.92 "3.10.1 Modifying lot information")
[QC Chart]	Touch to display the [QC Chart] screen of the selected QC file. (▶P.102 "3.12 [QC Chart] screen")
[Display]	Touch to open a submenu that allows you to change the sorting order and display conditions of the QC file list. (▶P.100 "3.11.1 Changing the display method of the QC file list (display settings)")
[File]	Touch to open a submenu that allows you to save and restore QC file data. [Backup]: Use to back up the data of the selected QC file. (▶P.95 "3.10.4 Saving QC file data (backup)") [Restore]: Use to restore the backed up data. (▶P.96 "3.10.5 Restoring saved data (restore)") Select a QC file that does not have a lot registered and restore data. X-barM control data cannot be backed up or restored.
[Delete]	Use to delete the data in the selected QC file. (▶P.94 "3.10.3 Deleting QC file data")
QC file list	Displays the QC file list. Displays the information input for lot registration and the date and time of the most recent QC analysis. If there is an error in the most recent QC analysis results,  appears in the left column.


Display switch button Touch to display the radar chart of the selected QC file.
 (>P.99 "● Radar chart display")

● **Radar chart display**

Touch the display switch button to display a radar chart of the most recent analysis results of the QC file selected in the QC file list.



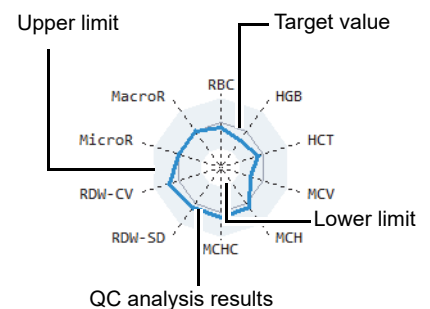
[QC File] screen (radar chart display)

QC file list Displays the QC file list.
 If there is an error in the most recent QC analysis results,  appears in the left column.

Display switch button Touch to hide the radar chart.

Radar charts Displays the most recent QC analysis results of the QC file selected in the QC file list as a radar chart.
 An analysis result that exceeds the limit value is displayed as follows.

- The parameter name is shown in white on a red background.
- The point is [x] (red).



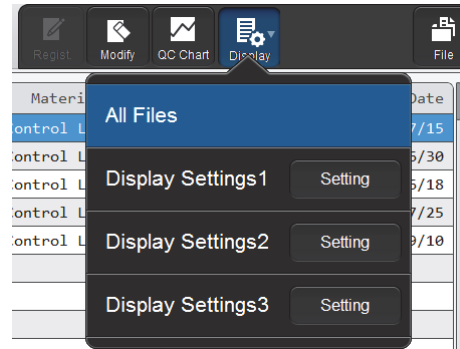
The radar charts that appear vary depending on your system configuration and the type of QC file.

3.11.1 Changing the display method of the QC file list (display settings)

You can change the sorting order of the QC file list, and specify filter conditions to display only specific QC files. Follow the steps below to change the display method.

1 Touch the [Display] button on the toolbar.

The submenu on the right appears.



2 Touch the desired display method.

The submenu closes and the display of the QC file list changes.

[All Files]	Touch to change to the standard display method (sort conditions: file number in descending order, filter conditions: none).
[Display Settings1] to [Display Settings3]	Touch to change to the sort conditions and filter conditions that have been set.
[Setting]	Touch to set the sort conditions and filter conditions.

The name of the selected display method appears next to the screen name in the upper left corner of the screen.

● Registering sort conditions and filter conditions

Follow the steps below to register display settings conditions.

1 Touch [Setting] in the submenu of the [Display] button.

The dialog box on the right appears.

2 Enter [Display Setting Name].

Enter the name you want to display in the submenu. Up to 20 characters can be entered.

3 Set the sort conditions.

Touch and select a sort key, and touch the sorting order ([Asc.]/[Desc.]).

To enable the sort key settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.

Sorting takes place according to the settings of the top key, which has priority.

The sort keys below can be selected.

[File No.]	Sorts by file number.
[Lot No.]	Sorts by lot number.
[Analysis Date]	Sorts by analysis date.

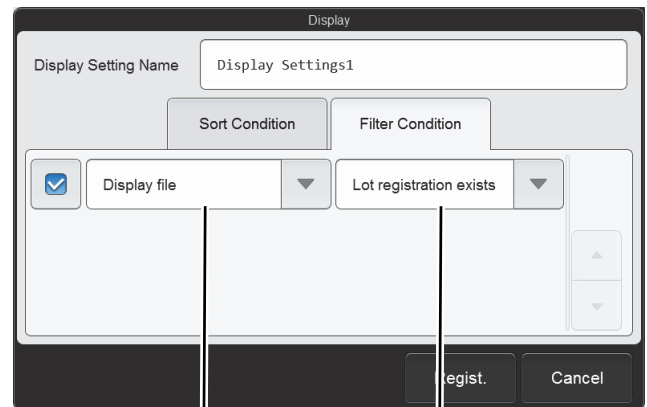
4 Touch the [Filter Condition] tab.

5 Set the filter conditions.

Touch to select the condition.

To enable the filter settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.

Filter item	Selectable condition
[Display file]	[Lot registration exists] [All Files]



Filter item

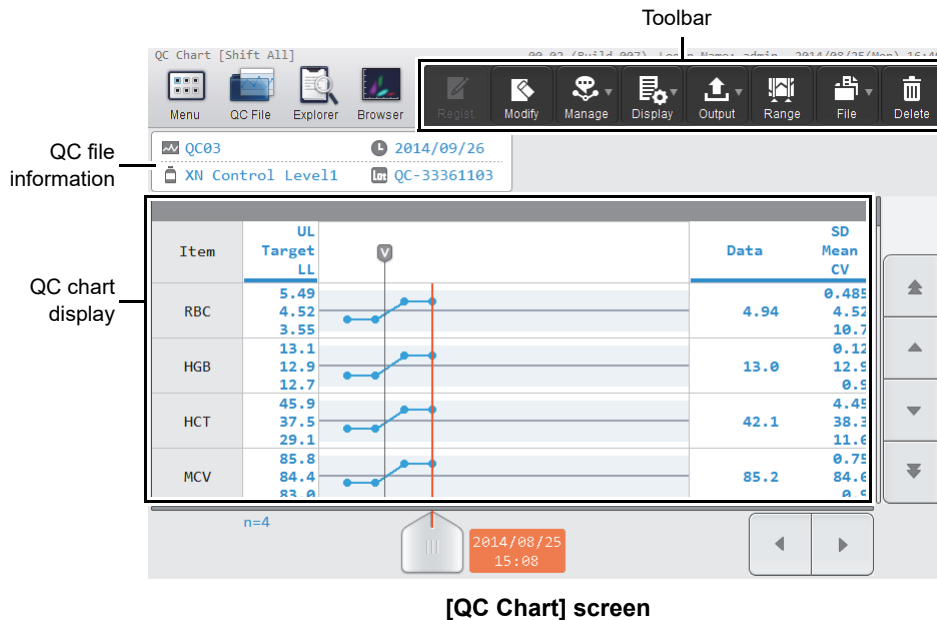
Condition

6 Touch [Regist.].

The dialog box closes and the set information is registered. The list display changes according to the set conditions.

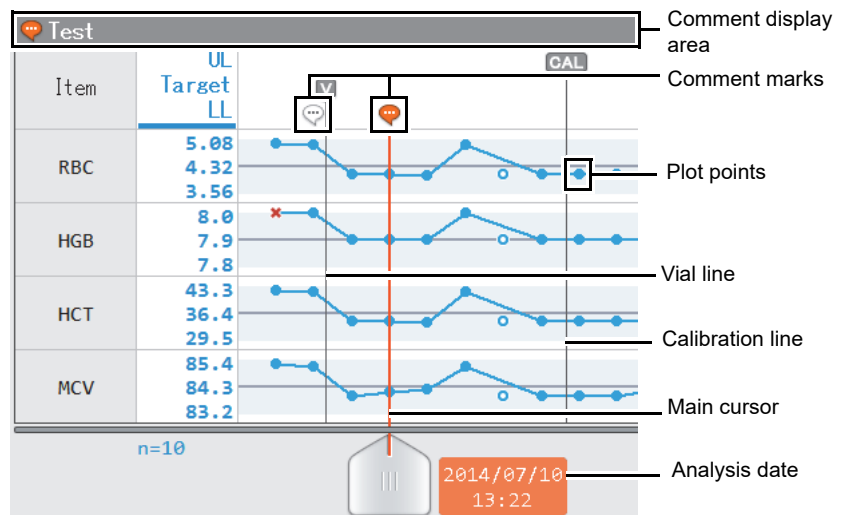
3.12 [QC Chart] screen






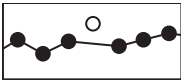



When a QC file is selected in the [QC File] screen and the [QC Chart] button is touched on the toolbar, the [QC Chart] screen of the selected QC file appears.



Toolbar	Displays the function buttons.
[Regist.]	Displayed when a lot has not been registered in the displayed QC file. Touch to display the [Input Lot Information] dialog box and register a lot. (▶P.73 "3.5 Registering lots")
[Modify]	Use to modify lot information. (▶P.92 "3.10.1 Modifying lot information")
[Manage]	Touch to open a submenu that allows you to edit the QC chart. [Vial]: Displays the vial line on the QC chart. (▶P.87 "3.7.2 Displaying the vial line") [Cursor Data Management]: Use to exclude the selected QC analysis result from QC, or add a comment. (▶P.93 "3.10.2 Configuring settings for cursor data (QC analysis results selected with the cursor)")
[Display]	Touch to open a submenu that allows you to set the display method of the QC chart display. [Sort]: Use to change the sorting order of the analysis parameters in the QC chart display. (▶P.105 "3.12.1 Changing the sorting order of the QC chart display") [Shift All]: Select the shift to display only the QC analysis results of that work shift. (▶P.106 "3.12.2 Displaying only the data of a selected shift")
[Output]	Touch to open a submenu that allows you to output the QC analysis results selected in the QC chart display to the output destination shown in the submenu. (▶P.90 "3.8 Outputting QC analysis results to the host computer or a printer")

[Range]	Touch to change the QC chart to range selection mode. (▶P.88 "3.7.3 Selecting the QC analysis result range")
[File]	Touch to open a submenu that allows you to save or restore all data in the QC file. [Backup]: Use to back up the QC file data. (▶P.95 "3.10.4 Saving QC file data (backup)") [Restore]: Use to restore the backed up data. (▶P.96 "3.10.5 Restoring saved data (restore)") [Output in SNCS Format]: Use to save the data in SNCS format. Select a QC file that does not have a lot registered in the [QC File] screen and restore data. X-barM control data cannot be backed up or restored.
[Delete]	Use to delete the QC analysis results selected in the QC chart. (▶P.89 "3.7.4 Deleting analysis results")
QC file information	Displays lot information (file number, expiration date, material, QC analysis sample number). If the control blood has expired, the expiration date appears in white on a red background. The QC analysis sample number is the lot number with [QC-] added. An X-barM control QC file is shown as follows. File number: [X-barM] Expiration date: Blank Material: Discrete ([CBC]/[DIFF]/[RET]) QC sample number: Blank
QC chart display	Displays the QC analysis results.
[Item]	Displays the analysis parameter name.
[UL]	Displays the limit value (upper).
[Target]	Displays the target value.
[LL]	Displays the limit value (lower).
QC chart	The QC analysis results are plotted over time and displayed as a broken-line graph.



Comment display area	Displays comments about the cursor data.
 Comment marks	<p>Displayed above QC analysis results that have comments.</p> <p>When a QC analysis result that has a comment is selected (cursor data), the mark in orange  appears, and the comment is shown in the comment area.</p> <p>To enter a comment, see the following. (►P.93 "3.10.2 Configuring settings for cursor data (QC analysis results selected with the cursor)")</p>
Plot points	<p>Indicate QC analysis results.</p> <p>Values and exclusion from control are indicated as follows.</p> <p> : The analysis result is within the limit range.</p> <p> : The analysis result is outside the limit range.</p> <p> : The analysis result is excluded from control.</p> <p>A plotted point that is excluded from control is not connected to the line, as shown on the right.</p>  <p>To exclude a QC analysis result from control, see the following. (►P.93 "3.10.2 Configuring settings for cursor data (QC analysis results selected with the cursor)")</p>
 Vial line	<p>Indicates that the vial was changed to a new vial.</p> <p>To display the vial line, see the following. (►P.87 "3.7.2 Displaying the vial line")</p>
 Calibration line	<p>Indicates that calibration was performed.</p> <p>The line appears to the left of the first point plotted following calibration. The calibration line cannot be deleted.</p>
 Main cursor	<p>This is a line for selection of QC analysis results. Touch the QC chart to move the line to a QC analysis result near the touched point.</p> <p>The analysis result that is selected by this line is called cursor data.</p> <p>When range selection mode is activated, the main cursor changes to the sub-cursor (fixed line) and a new main cursor appears. The range of QC analysis results between the main cursor and sub-cursor can be selected.</p> <p>For the range selection procedure, see the following. (►P.88 "3.7.3 Selecting the QC analysis result range")</p>
[Data]	<p>Displays the cursor data value.</p> <p>In range selection mode, the data value indicated by the sub-cursor is shown. If outside the limit range, the value is shown in white on a red background. If above the upper limit, [+] appears to the left of the value. If under the lower limit, [-] appears to the left of the value.</p>
[SD]	<p>Displays the standard deviation calculated from all managed QC analysis results.</p> <p>If there is only one result, this cannot be calculated and [- - -] appears.</p> <p>When range selection mode is activated, this is calculated from the managed data inside the range.</p>
[Mean]	<p>Displays the mean value calculated from all managed QC analysis results.</p> <p>When range selection mode is activated, this is calculated from the managed data inside the range.</p>

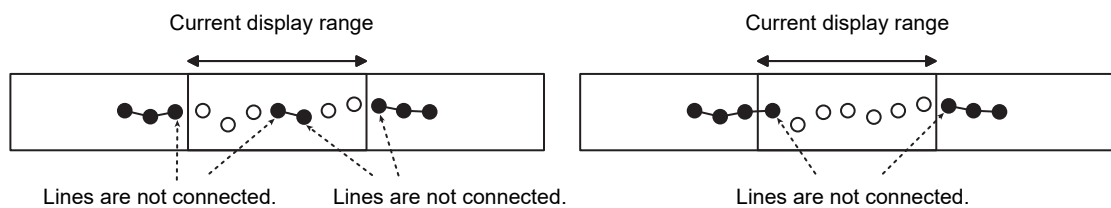
[CV] Displays the coefficient of variation calculated from all managed QC analysis results.
If there is only one result, this cannot be calculated and [- - -] appears.
When range selection mode is activated, this is calculated from the managed data inside the range.

[n=] Displays the number of QC analysis results that are managed.
When range selection mode is activated, the number of managed analysis results inside the range is shown.



Note:

- If the displayed range of the QC chart contains plotted points that are excluded from control, the plotted points are not connected to the plotted points outside the displayed range.



- Plotted points that show [- - -] or a data mask indicating non-analyzable are not joined by lines. For details on data masks, see Chapter 5.
(►P.166 "Chapter 5: 5.11.2 Display of analysis result data")

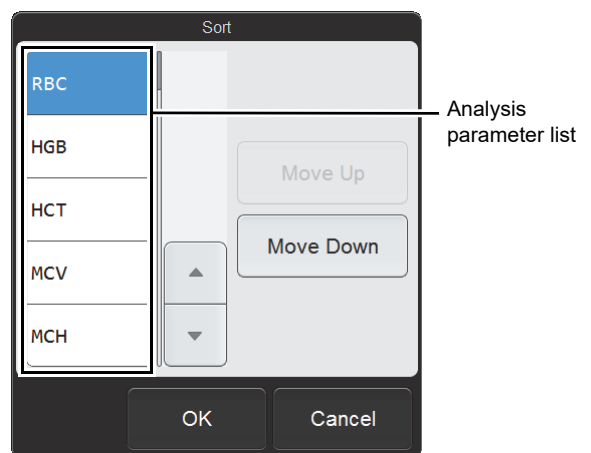
3.12.1 Changing the sorting order of the QC chart display

The sorting order of the QC chart display can be changed.
Follow the steps below to change sorting order.

1 Touch the **[Display]** button - **[Sort]** on the toolbar.

The **[Sort]** dialog box appears.

The analysis parameters in the analysis parameter list appear in the same order as the analysis parameters in the QC chart display.



[Sort] dialog box

2 Touch the analysis parameter whose position you want to change.

The touched analysis parameter is selected.

3 Touch [Move Up] or [Move Down] to move the analysis parameter to the desired position.

To move a different analysis parameter, touch the analysis parameter and then touch [Move Up] or [Move Down] in the same way.

4 Touch [OK].

The QC chart display changes to the set order.

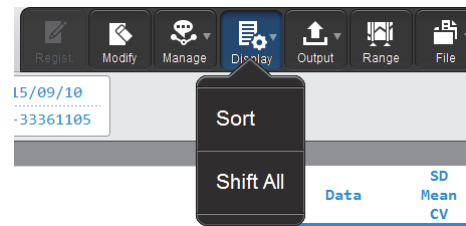
3.12.2 Displaying only the data of a selected shift

You can display the QC analysis results of a single work shift.

Follow the steps below to select the shift whose data you want to display.

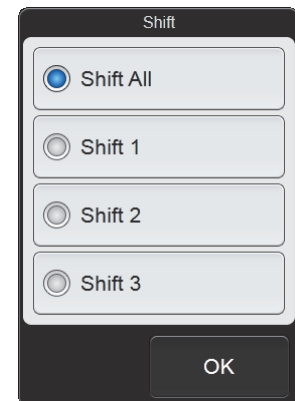
1 Touch the [Display] button on the toolbar.

The submenu on the right appears.



2 Touch [Shift All].

The [Shift] dialog box appears.



[Shift] dialog box

3 Touch the shift whose data you want to display.

The touched shift is selected.

4 Touch [OK].

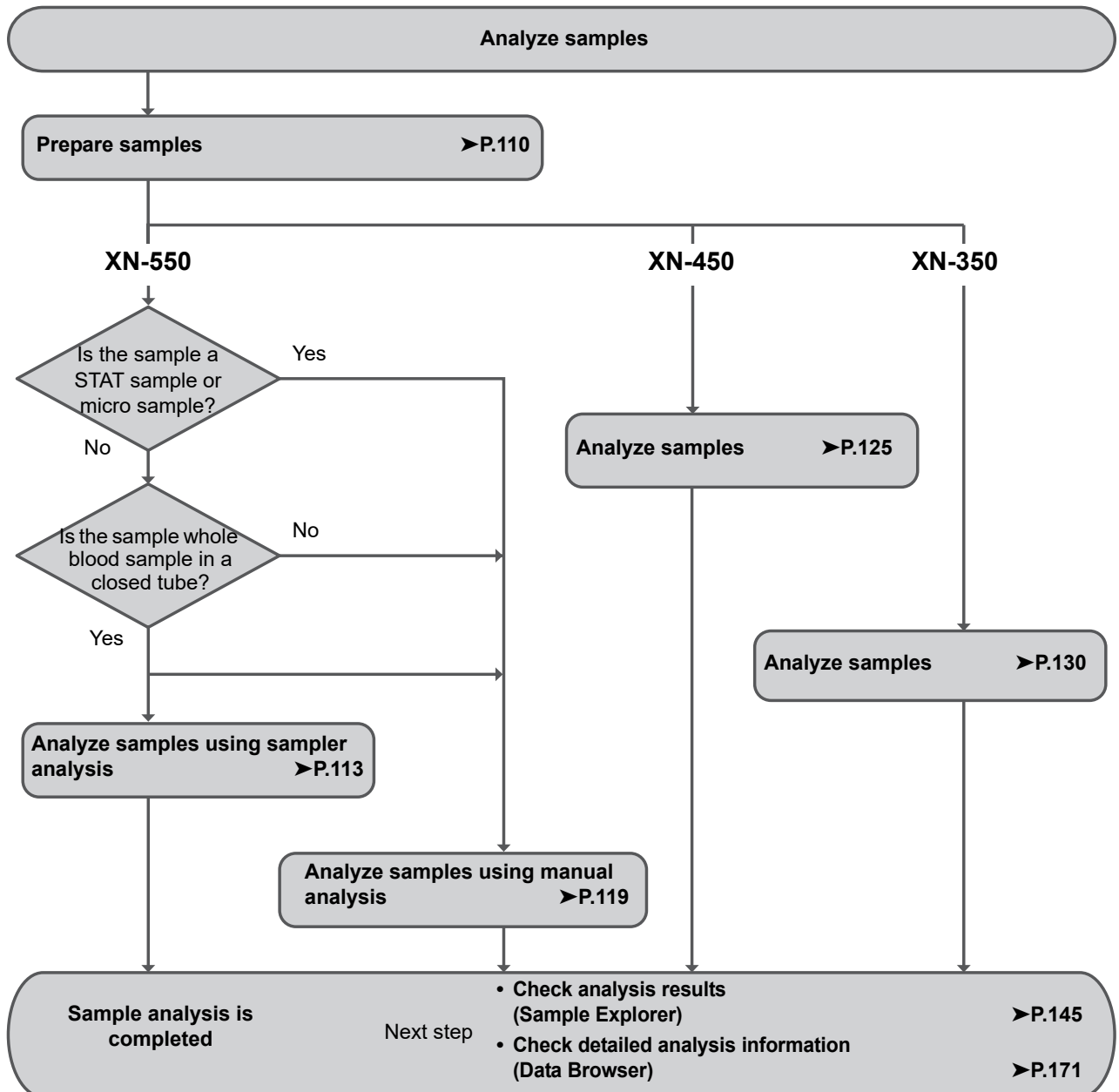
The data of only the selected shift is displayed.

[Shift All] in the submenu changes to the name of the selected shift.

Chapter 4 Analyzing Samples

4.1 Flow of sample analysis

The flow chart below shows the sequence of sample analysis. The typical flow is shown in gray.



4.2 Overview of sample analysis



Caution!

- Before placing the sample in the sample tube holder or sampler adapter (XN-550 only), check to make sure that the sample is sufficiently mixed. Exercise particular caution if the sample settles quickly or has been stored in a cooler or low-temperature environment.
- Do not analyze coagulated blood.
- The instrument is equipped with an aspiration sensor. However, there is a possibility that correct results may not be obtained if the sample volume is low and the sensor is not able to detect blood aspiration error.
- While analysis is in progress, do not remove/insert the hand-held barcode reader or turn OFF the main power switch on the instrument. There is a risk of corruption of the information that is written to the reagent cartridge.
If you accidentally remove or insert the hand-held barcode reader during analysis, restart the instrument to reset.

4.2.1 Types of analysis

The instrument supports the analysis methods below.

Model	Analysis method	Overview
XN-550	Sampler analysis	Sample tubes with the cap closed are placed in sampler adapters, and the operator executes automatic sample mixing, aspiration, and analysis by simply pressing the sampler analysis start/stop switch. The analysis mode is [Whole Blood] mode. (When a rerun test is performed by query to the host computer, [Low WBC] ^{*1} mode can be selected.) Up to 10 samples can be placed in 1 sampler adapter, and 2 sampler adapters can be placed in the instrument.
	Manual analysis	The operator mixes the sample manually, places the sample tube in the sample tube holder, and presses the start switch to execute aspiration and analysis.
XN-450	Manual analysis	When using [Pre-Dilution] mode or using a micro collection tube for analysis, the operator places the sample tube in the sample tube holder with the cap open ^{*2} .
XN-350	Manual analysis	The operator mixes the sample manually, inserts the sample tube in the aspiration pipette with the cap open, and presses the start switch to execute aspiration and analysis.

*1 The availability of [Low WBC] mode depends on your system configuration.

*2 Dead volume can be reduced by opening the sample tube cap. Analysis with regular sample tubes can also be performed with the cap open.

4.2.2 Analysis mode

Analysis modes can be selected on the instrument for a variety of sample types. Use the analysis mode that best suits your needs.

Analysis mode	Sample and application	Remarks
[Whole Blood] mode	Used for analysis of whole blood.	—
[Low WBC] mode*	Used for analysis of low white blood cells in whole blood. The count time of the WDF channel is raised to twice that of [Whole Blood] mode to increase the precision of the white blood cell analysis.	—
[Pre-Dilution] mode	Used for analysis of micro volumes of blood. Example: Sample taken from an earlobe or fingertip.	<ul style="list-style-type: none"> • 1:7 dilution • The aspiration sensor is not used.
[Body Fluid] mode*	Used for analysis of body fluid (cerebrospinal fluid, serous (peritoneal and pleural), synovial fluid, CAPD (Continuous ambulatory peritoneal dialysis) fluid).	The aspiration sensor is not used.

* The availability of [Low WBC] mode and [Body Fluid] mode depends on your system configuration.

4.2.3 Discrete

Discretets are groups of analysis parameters.

Discrete	Analysis parameter
CBC	WBC, RBC, HGB, HCT, MCV, MCH, MCHC, PLT, RDW-SD, RDW-CV, MicroR, MacroR, PDW, MPV, P-LCR, PCT
DIFF	NEUT#, LYMPH#, MONO#, EO#, BASO#, NEUT%, LYMPH%, MONO%, EO%, BASO%, IG#, IG%, AS-LYMP#*, AS-LYMP%*, NEUT-RI*, NEUT-GI*
RET*	RET#, RET%, HFR, MFR, LFR, IRF, RET-He, RBC-He, Delta-He, HYPO-He, HYPER-He

* The availability of functions depends on your system configuration.

Analysis parameters can be specified in an analysis order by selecting a discrete group rather than individual analysis parameters.

Discrete selected in analysis order	Remarks
CBC	—
CBC+DIFF	—
CBC+RET	Cannot be selected when the instrument does not have the RET analysis function.
CBC+DIFF+RET	Cannot be selected when the instrument does not have the RET analysis function.
FREE SELECT	Appears when individual analysis parameters are specified in the [Work List].

4.3 Preparing samples

Samples analyzed in each analysis mode are as follows.

- [Whole Blood]/[Low WBC]* mode: Whole blood (venous blood)
- [Pre-Dilution] mode: Diluted blood such as capillary blood that has been diluted
- [Body Fluid]* mode: Body fluid (cerebrospinal fluid, serous (peritoneal and pleural), synovial fluid, CAPD (Continuous ambulatory peritoneal dialysis) fluid)

* The availability of [Low WBC] mode and [Body Fluid] mode depends on your system configuration.

● Handling whole blood

Mix the venous blood with an anticoagulant (EDTA-2K, EDTA-3K, or EDTA-2Na). Draw the amount of venous blood that is specified for the amount of EDTA anticoagulant.

The sample should be analyzed within 24 hours after collection. * If it is not possible to analyze the sample within 24 hours, store it in a refrigerator at 2 to 8°C until it can be analyzed. When analyzing a refrigerated sample, take it out of the refrigerator at least 15 minutes prior to analysis to allow it to return to room temperature. Once restored to room temperature, mix the blood sufficiently before performing analysis.

* Sample stability for each parameter is different. For details, see "General Information".

(►General Information, "Chapter 5: 5.1 Specifications" Sample stability with time after blood collection)



Caution!

- Before placing the sample in the sample tube holder or sampler adapter (XN-550 only), check to make sure that the sample is sufficiently mixed. If too much time elapses from mixing until analysis, there is a risk that correct analysis results will not be obtained.
Exercise particular caution if the sample settles quickly or has been stored in a cooler or low-temperature environment.
- Use only the specified anticoagulant.
Using a non-specified anticoagulant may result in hemolysis or platelet aggregation, preventing correct analysis results.
- When analyzing in [Low WBC] mode, mix the sample gently and analyze promptly. Excessive mixing or the elapse of time may cause incorrect results.
- When using sample tubes, follow the instructions on the sample tube package insert.
If the sample volume is greater than the specified volume, correct analysis results may not be obtained due to insufficient mixing or sample coagulation.
When the sample volume is normal, there will be a layer of air at the top of the sample tube.
When there is no air layer, the sample will not mix when the sample tube is turned over. Check the sample volume before mixing.

● Handling diluted blood

Diluted blood is prepared by diluting capillary blood or venous blood by 1:7. For capillary blood, dispense the blood directly into the diluent after collection to prepare a 1:7 dilution. Do not use any anticoagulants. You can also collect the blood in a micro collection tube, add an anticoagulant, and dilute the blood later.

Example:

- 1 Pour CELLPACK DCL into the diluent-dispensing container*.
- 2 Dispense 120 μL of CELLPACK DCL into the micro collection tube*.
- 3 Add 20 μL of blood to the micro collection tube containing CELLPACK DCL to a dilution of 1:7.
- 4 Cap the sample and mix well.
- 5 Remove the cap and analyze.

* This instrument has a CELLPACK DCL dispensing function. For the dispensing procedure, see the following.

- XN-550:
(▶P.135 "4.8.1 Preparing diluted blood with the diluent dispensing function (XN-550)")
- XN-450:
(▶P.138 "4.8.2 Preparing diluted blood with the diluent dispensing function (XN-450)")
- XN-350:
(▶P.141 "4.8.3 Preparing diluted blood with the diluent dispensing function (XN-350)")



Caution!

- Do not dilute to other than the specified dilution ratio. Otherwise you will obtain incorrect analysis results.
- The sample should be analyzed immediately after dilution, as platelet aggregation can easily occur in diluted samples.
In addition, the dispensed diluent can cause a certain amount of error in the analysis values due to evaporation and contamination. For this reason, a new diluted blood sample should be prepared for each analysis.
- After diluting the sample, mix gently and analyze promptly. If the sample is mixed excessively after dilution, the results may not be accurate.
- It is acceptable to apply light pressure when collecting a capillary blood sample. However, too much pressure will force body fluid into the blood and lower the reliability of the analysis results.

● Handling body fluids

After collecting body fluid, add an anticoagulant such as EDTA or heparin as needed.

Analyze as soon as possible after collecting the sample. Particularly in the case of cerebrospinal fluid (CSF), it is indicated that cell breakdown starts to occur within 1 hour after collection*.

* CLSI H56-A: Clinical and Laboratory Standards Institute H56-A



Caution!

- Mix the sample gently after collection.
- Excessive mixing of a body fluid sample may cause false high values at WBC-BF and TC-BF#.
- Fat globules, crystals, high viscous synovial fluids, bacterium, and fungi may cause erroneous or misleading results.
- Failure to properly collect, store and transport specimens may compromise results. Sysmex recommends that you follow CLSI guidance documents or equivalent procedures.
- WBC-BF counts $< 0.001 \times 10^3/\mu\text{L}$ or RBC-BF counts $< 0.003 \times 10^6/\mu\text{L}$ should be confirmed using an alternate method.
- The laboratory should perform additional testing if more specific or sensitive limitation information is needed.

● Sample volume

Aspirated sample volumes and required sample volumes are indicated below.

XN-550/XN-450

Analysis method	Specimen	Sample tube	Cap	Aspirated sample volume	Required sample volume
Sampler analysis (XN-550)	Whole blood	Regular sample tube	Closed tube	25 µL	1 mL
		RBT micro collection tube	Closed tube		250 µL
Manual analysis	Whole blood	Regular sample tube	Closed tube	25 µL	1 mL
			Open tube		300 µL
		RBT micro collection tube	Closed tube		250 µL
			Open tube		100 µL
	Diluted blood	Regular sample tube	Open tube	70 µL	300 µL
		Micro collection tube	Open tube		140 µL
	Body fluid*	Regular sample tube	Closed tube	70 µL	1 mL
			Open tube		300 µL
			Open tube		140 µL

* The availability of the body fluid analysis function depends on your system configuration.

XN-350

Analysis method	Specimen	Sample tube	Cap	Aspirated sample volume
Manual analysis	Whole blood	Regular sample tube	Open tube	25 µL
	Diluted blood	Regular sample tube	Open tube	70 µL
	Body fluid*	Regular sample tube	Open tube	70 µL

* The availability of the body fluid analysis function depends on your system configuration.

4.4 Analyzing samples using sampler analysis (XN-550)



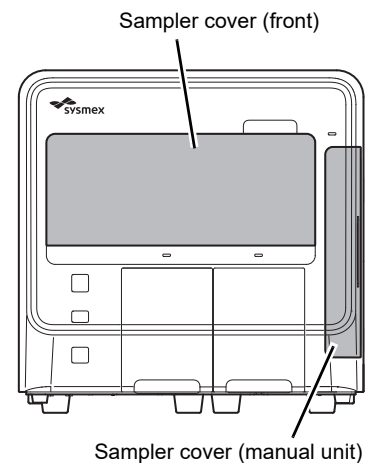
Caution!

- If the sample is left sitting for more than 4 hours and the blood cells and plasma separate, correct analysis results may not be obtained due to insufficient mixing.
To analyze this type of sample, mix the blood sufficiently before placing the sample in the sampler adapter.
- When using sample tubes, follow the instructions on the sample tube package insert.
If the sample volume is greater than the specified volume, correct analysis results may not be obtained due to insufficient mixing or sample coagulation.
- When the sample volume is normal, there will be a layer of air at the top of the sample tube.
When there is no air layer, the sample will not mix when the sample tube is turned over. Check the sample volume before mixing.

Follow the steps below to perform sampler analysis.

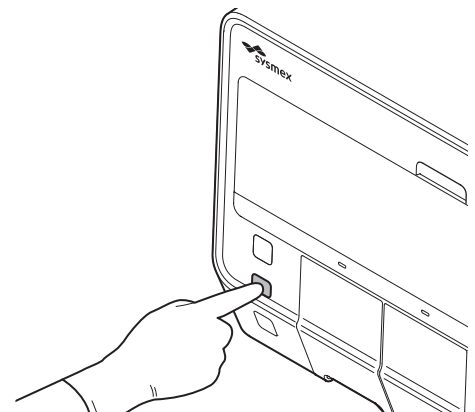
1 Make sure that the sampler cover (front) and the sampler cover (manual unit) are closed.

If either is open, close it.



2 Make sure the button on the right edge of the control menu is [Sampler]. When the mode is set to [Manual], press the mode switch.

The mode changes to sampler analysis mode.

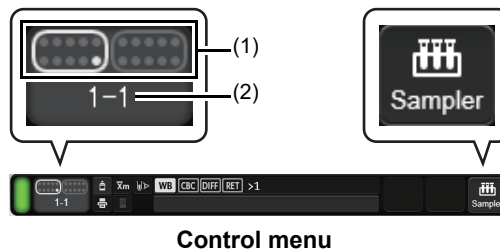


**Note:**

In sampler analysis mode, instrument status of the control menu switches to the state as shown on the right.

- (1) The starting sample tube position of the next analysis is shown visually. The rectangle with rounded corners shows the sampler adapter, and the position is indicated by a white circle.
- (2) The starting sample tube position (adapter number and sample tube position) of the next analysis is shown.

And the button on the right edge of the control menu changes to [Sampler].

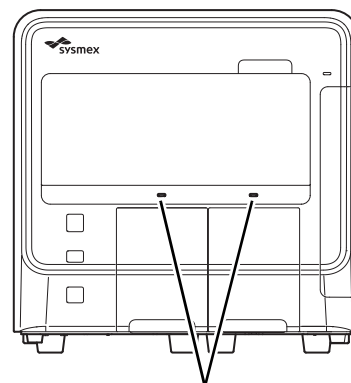


Control menu

3 Make sure that either the left or right sampler adapter holder is in a state where it can be pulled out.

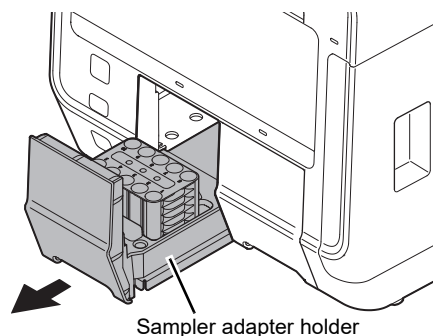
A sampler adapter holder can be pulled out when the sampler adapter status indicator LED is as follows.

- Solid green
- OFF



Sampler adapter status indicator LED

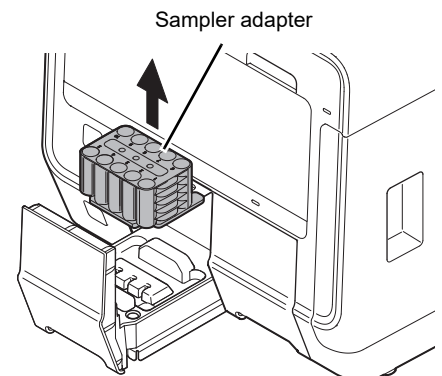
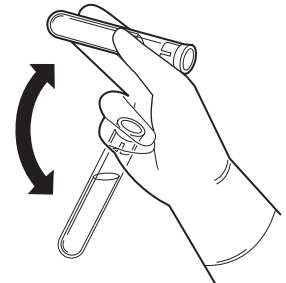
4 Pull out the sampler adapter holder that you want to use.



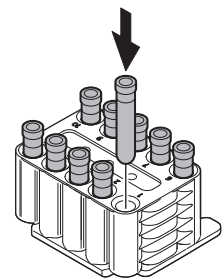
Sampler adapter holder

5 Remove the sampler adapter.

If analyzed sample tubes are placed, remove them and prepare new samples.

**6 Mix the sample tube as shown.**

Example: Regular sample tube

7 Place the sample tube in the sampler adapter.**Caution!**

Use the appropriate sampler adapter for the sample tube.

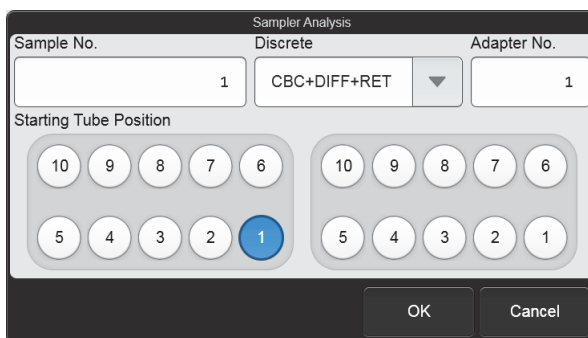
If an unsuitable adapter is used, aspiration problems may cause incorrect analysis results, and instrument damage may occur.

For the types of sampler adapters, see "General Information".

(►General Information, "Chapter 5: 5.3.3 Supported sampler adapter")

8 Touch [Sampler] on the right edge of the control menu.

The [Sampler Analysis] dialog box appears.



[Sampler Analysis] dialog box

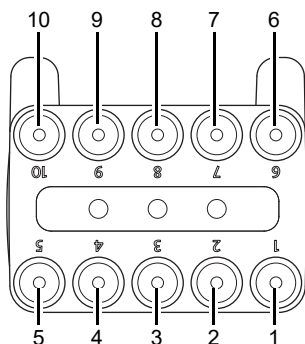
9 Touch an item to set the condition.

[Starting Tube Position]	Pull out the sampler adapter holder that you want to use.
[Sample No.]	Set the number of the sample in the starting sample tube position. The [Sample No.] of each sample tube from the second tube on is determined by automatically incrementing the previous number. When querying for the analysis order using barcodes, this does not need to be set.
[Discrete]	Set the analysis discrete for the sample in each sample tube position. When querying for the analysis order using barcodes, this does not need to be set.
[Adapter No.]	Set the adapter number of the sampler adapter with the sample tube from which analysis will start. The [Adapter No.] of the sampler adapter that will be analyzed afterward will be assigned by automatically incrementing the adapter number.

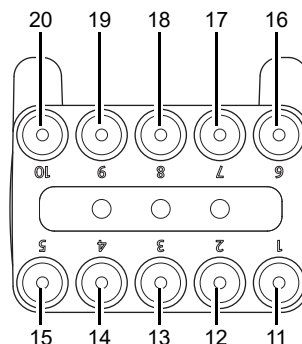


Note:

Analysis takes place in the order of the sampler adapter sample tube positions, starting from the analysis start position set in [Starting Tube Position] in the [Sampler Analysis] dialog box.
If 2 sampler adapters are set and analysis is started with [Starting Tube Position] set to the 1st position of the left adapter, the order of analysis will be as shown below.



Sampler adapter set in the sampler adapter holder (left)



Sampler adapter set in the sampler adapter holder (right)

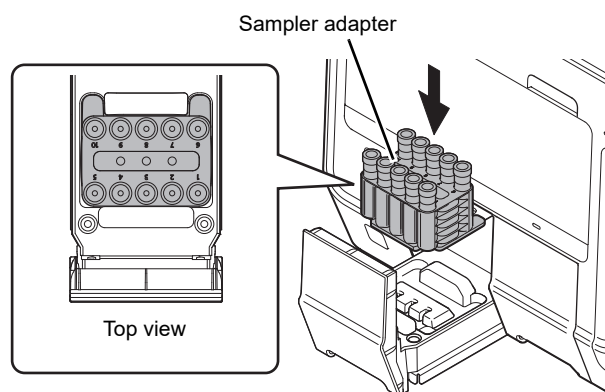
10 Touch [OK].

The dialog box closes, and the analysis order is set.

11 Place the sampler adapter in the sampler adapter holder selected in the [Sampler Analysis] dialog box.

You can also check whether the left or right sampler adapter is selected in the instrument status in the control menu.

Attach the sampler adapter in the orientation shown in the illustration.

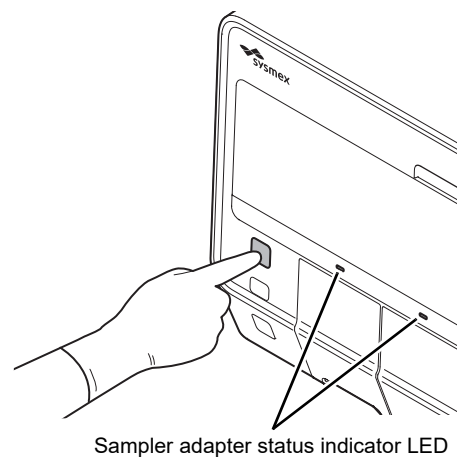
**12 Push in the sampler adapter holder.**

The sampler adapter status indicator LED lights green.

13 Press the sampler analysis start/stop switch.

A beep sounds and analysis starts.

The sampler adapter status indicator LED lights green during analysis, and turns OFF when the analysis is finished.

**Note:**

If the instrument is set to perform retesting, it will automatically analyze the sample multiple times.

- **If you need to analyze a STAT sample during sampler analysis**

Press the mode switch. Sampler analysis will pause when analysis of the current sample is completed, and the mode will change to manual analysis mode.

Analyze the STAT sample in manual analysis mode.

When analysis of the STAT sample is completed, close the sampler cover (manual unit) and press the mode switch. Sampler analysis will resume from the next pending sample.

- **If you need to stop sampler analysis**

To stop sampler analysis after analysis of the current sample is completed, press the sampler start/stop switch during sampler analysis.

If you want to repeat analysis, set the sample tube start position and other parameters again, and then start sampler analysis.

14 Pull out the analyzed sampler adapter holder, and remove the sampler adapter.

If you are using 2 sampler adapters for sampler analysis, 1 sampler adapter holder can be opened and closed even while analysis of the other sampler adapter is in progress.

15 Remove the sample tube from the sampler adapter.

16 If you have another sample to analyze, place the sampler adapter in the sampler adapter holder.

17 Push in the sampler adapter holder.

The sampler adapter status indicator LED lights green.

For details on checking the analysis results, see Chapter 5.

(►P.146 "Chapter 5: 5.2 Checking analysis results")

4.5 Analyzing samples using manual analysis (XN-550)



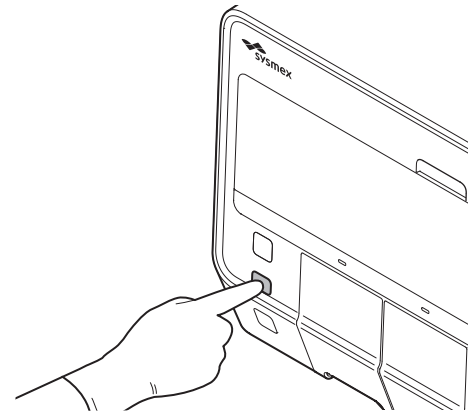
Caution!

- The instrument does not mix the sample. Be sure to perform mixing immediately before starting analysis.
- Analysis cannot be performed in [Pre-Dilution] mode or [Body Fluid] mode when an RBT micro collection tube is used.

Follow the steps below to perform manual analysis.

- 1 Make sure the button on the right edge of the control menu is [Manual]. When the mode is set to [Sampler], press the mode switch.**

The mode changes to manual analysis mode.



Note:

If the mode switch is pressed while analysis is in progress in sampler analysis mode, sampler analysis will pause when analysis of the current sample is completed, and the mode will change to manual analysis mode.

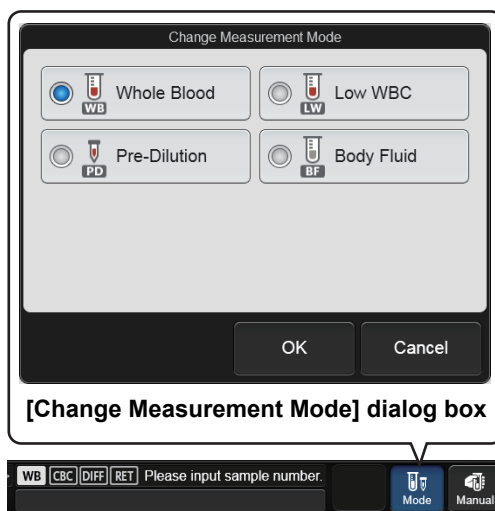
- 2 Make sure the instrument is in the ready state.**

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

3 If you want to change the analysis mode, touch [Mode] in the control menu.

The [Change Measurement Mode] dialog box appears.
The analysis modes that appear depend on your system configuration.

This step is not necessary if you will continue using the currently selected analysis mode. Go to step 6.



4 Touch the analysis mode you want to set.

The touched analysis mode is selected.

When changing to [Pre-Dilution] mode, the mode change will take time. Wait until the mode change is completed.

5 Touch [OK].

The dialog box closes.

- If you change to [Body Fluid] mode

A background check of body fluid analysis parameters starts.

Checked parameter	Background limits	Remarks
WBC-BF	$0.001 \times 10^3/\mu\text{L}$ or less	White blood cell counts in body fluid measured from the WDF channel
RBC-BF	$0.003 \times 10^6/\mu\text{L}$ or less	Red blood cell counts in body fluid measured from the RBC/PLT channel

If the results are not within the allowable range after 3 analyses, a background check error occurs. See "Troubleshooting". (►Troubleshooting, "Chapter 1: 1.1 Error message list (in alphabetical order)")

6 Touch [Manual] on the right edge of the control menu.

A dialog box corresponding to the selected mode appears.

[Whole Blood] mode/[Low WBC] mode

[Pre-Dilution] mode

[Body Fluid] mode

The check parameters that appear in [Method] vary depending on the settings. [Patient Information] appears only if the logged on user has [Display and Modify Patient Info.] permission.



Note:

If the sample number is set to [Automatically increment Sample No. (manual mode)] and the analysis settings are the same as the previously analyzed sample, settings of this dialog box can be omitted. For details on auto increment of sample numbers, see Chapter 7.

(▶ **P.224** "Chapter 7: 7.8.4 Sample number auto increment settings")

7 Touch an item to set the condition.

[Sample No.]	Enter the sample number. You can also enter a sample number by reading the sample tube barcode label using the hand-held barcode reader.
[Discrete]	Select analysis parameters using discretetes. Analysis parameters cannot be selected individually. To select individual analysis parameters, register the analysis order in the [Work List]. If analysis ordering is performed, the settings of the registered analysis order are given priority.

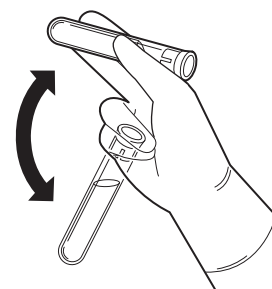
[Patient Information]	Touch [Input] to enter the patient ID with the software keyboard. If the patient information of the entered patient ID is registered in the instrument, the information (patient name, date of birth, etc.) will appear. If analysis ordering is performed, the settings of the registered analysis order are given priority.
[Query to Host]	Specify whether or not the host computer is queried for the analysis order. Select this checkbox to query the host. Remove the checkmark when analyzing a sample without a registered analysis order, such as a STAT sample.
[Aspiration Sensor]	Specify whether or not the aspiration sensor is used. Select the checkbox to use the aspiration sensor. When the volume of blood to be aspirated is low, remove this checkmark.
[Cap Open]	Select this checkbox to perform micro sample analysis (analysis with the sample tube cap open).
[Raised Bottom Tube]	Select the checkbox to use an RBT micro collection tube.
[Dispense]	Use to prepare diluted blood. Touch to start dispensing CELLPACK DCL. For the dispensing procedure, see the following. (▶P.135 "4.8.1 Preparing diluted blood with the diluent dispensing function (XN-550)")

**Note:**

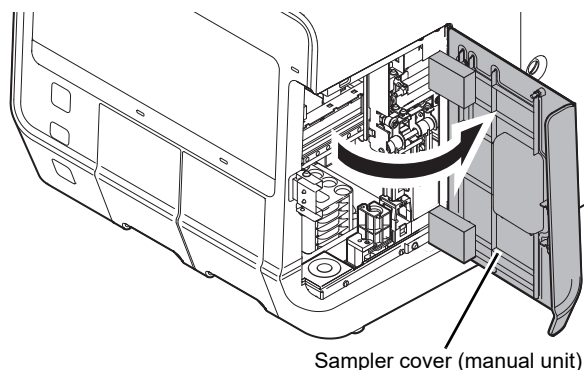
- The instrument is equipped with an aspiration sensor. However, there is a possibility that correct results may not be obtained if the sample volume is low and the sensor is not able to detect blood aspiration error.
- If you know in advance that the blood sample is extremely thin, such as blood from a dialysis patient, disable the aspiration sensor. For details, see Chapter 7.
(▶P.233 "Chapter 7: 7.9.1 Aspiration sensor settings")

8 Touch [OK].

The dialog box closes.

9 Mix the sample tube as shown.

Example: Regular sample tube

10 Open the sampler cover (manual unit).

Sampler cover (manual unit)

11 If you are performing micro sample analysis (open analysis) with a regular sample tube, or are performing analysis with a micro collection tube, remove the sample tube cap.

When removing the cap, take care that the sample does not spill.

12 Place the sample tube in the sample tube holder.

- **Placing a regular sample tube or RBT micro collection tube**

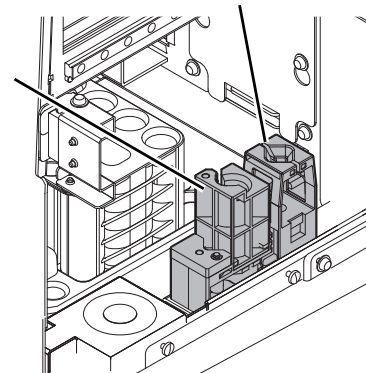
Place a regular sample tube or RBT micro collection tube in the regular sample tube position at the front of the sample tube holder.

- **Placing a micro collection tube**

Place the micro collection tube in the micro collection tube position at the back of the sample tube holder.

Micro collection tube holder

Regular sample tube holder

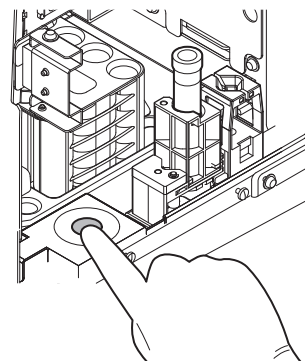
**Caution!**

If you are using an RBT micro collection tube, be sure to select the [Raised Bottom Tube] checkbox in step 7. Otherwise there is a risk of instrument damage.

13 Press the start switch.

The sample tube holder retracts into the instrument. Aspiration and analysis start.

When sample aspiration finishes, the sample tube holder is ejected.



Example: When a regular sample tube is placed



Information

If a message appears during analysis prompting you to replace a reagent, replace the reagent. If the reagent is replaced when the reagent is low, bubbling may occur and raise the blank value.

14 Remove the sample tube.

15 Close the sampler cover (manual unit).

For details on checking the analysis results, see Chapter 5.

(►P.146 "Chapter 5: 5.2 Checking analysis results")

4.6 Analyzing samples (XN-450)

Caution!

- The instrument does not mix the sample. Be sure to perform mixing immediately before starting analysis.
- Analysis cannot be performed in [Pre-Dilution] mode or [Body Fluid] mode when an RBT micro collection tube is used.

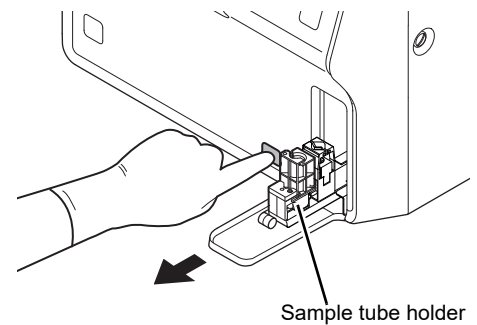
Follow the steps below to perform analysis.

1 Make sure the instrument is in the ready state.

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

2 If the sample tube holder is not ejected, press the sample tube holder open/close switch.

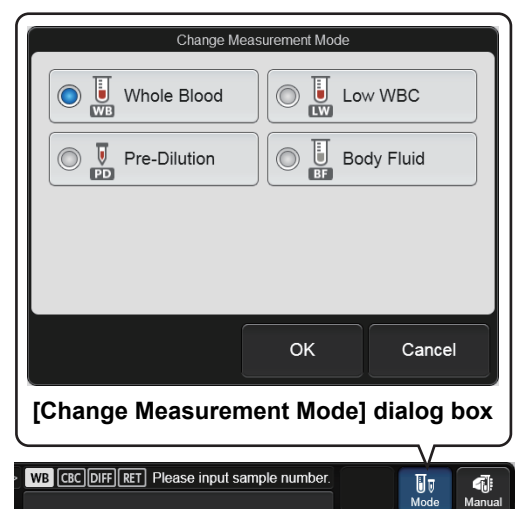
The sample tube holder is ejected.



3 If you want to change the analysis mode, touch [Mode] in the control menu.

The [Change Measurement Mode] dialog box appears. The analysis modes that appear depend on your system configuration.

This step is not necessary if you will continue using the currently selected analysis mode. Go to step 6.



4 Touch the analysis mode you want to set.

The touched analysis mode is selected.

When changing to [Pre-Dilution] mode, the mode change will take time. Wait until the mode change is completed.

5 Touch [OK].

The dialog box closes.

- If you change to [Body Fluid] mode

A background check of body fluid analysis parameters starts.

Checked parameter	Background limits	Remarks
WBC-BF	0.001 x 10 ³ /μL or less	White blood cell counts in body fluid measured from the WDF channel
RBC-BF	0.003 x 10 ⁶ /μL or less	Red blood cell counts in body fluid measured from the RBC/PLT channel

If the results are not within the allowable range after 3 analyses, a background check error occurs. See "Troubleshooting". (▶Troubleshooting, "Chapter 1: 1.1 Error message list (in alphabetical order)")

6 Touch [Manual] on the right edge of the control menu.

A dialog box corresponding to the selected mode appears.

[Whole Blood] mode/[Low WBC] mode

[Pre-Dilution] mode

[Body Fluid] mode

The check parameters that appear in [Method] vary depending on the settings. [Patient Information] appears only if the logged on user has [Display and Modify Patient Info.] permission.

**Note:**

If the sample number is set to [Automatically increment Sample No. (manual mode)] and the analysis settings are the same as the previously analyzed sample, settings of this dialog box can be omitted. For details on auto increment of sample numbers, see Chapter 7.

(►P.224 "Chapter 7: 7.8.4 Sample number auto increment settings")

7 Touch an item to set the condition.

[Sample No.]	Enter the sample number. You can also enter a sample number by reading the sample tube barcode label using the hand-held barcode reader.
[Discrete]	Select analysis parameters using discretets. Analysis parameters cannot be selected individually. To select individual analysis parameters, register the analysis order in the [Work List]. If analysis ordering is performed, the settings of the registered analysis order are given priority.
[Patient Information]	Touch [Input] to enter the patient ID with the software keyboard. If the patient information of the entered patient ID is registered in the instrument, the information (patient name, date of birth, etc.) will appear. If analysis ordering is performed, the settings of the registered analysis order are given priority.
[Query to Host]	Specify whether or not the host computer is queried for the analysis order. Select this checkbox to query the host. Remove the checkmark when analyzing a sample without a registered analysis order, such as a STAT sample.
[Aspiration Sensor]	Specify whether or not the aspiration sensor is used. Select the checkbox to use the aspiration sensor. When the volume of blood to be aspirated is low, remove this checkmark.
[Cap Open]	Select this checkbox to perform micro sample analysis (analysis with the sample tube cap open).
[Raised Bottom Tube]	Select the checkbox to use an RBT micro collection tube.
[Dispense]	Use to prepare diluted blood. Touch to start dispensing CELLPACK DCL. For the dispensing procedure, see the following. (►P.138 "4.8.2 Preparing diluted blood with the diluent dispensing function (XN-450)")

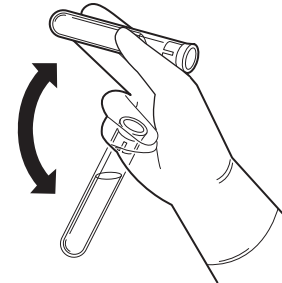
**Note:**

- The instrument is equipped with an aspiration sensor. However, there is a possibility that correct results may not be obtained if the sample volume is low and the sensor is not able to detect blood aspiration error.
- If you know in advance that the blood sample is extremely thin, such as blood from a dialysis patient, disable the aspiration sensor. For details, see Chapter 7.
(►P.233 "Chapter 7: 7.9.1 Aspiration sensor settings")

8 Touch [OK].

The dialog box closes.

9 Mix the sample tube as shown.



Example: Regular sample tube

10 If you are performing micro sample analysis (open analysis) with a regular sample tube, or are performing analysis with a micro collection tube, remove the sample tube cap.

When removing the cap, take care that the sample does not spill.

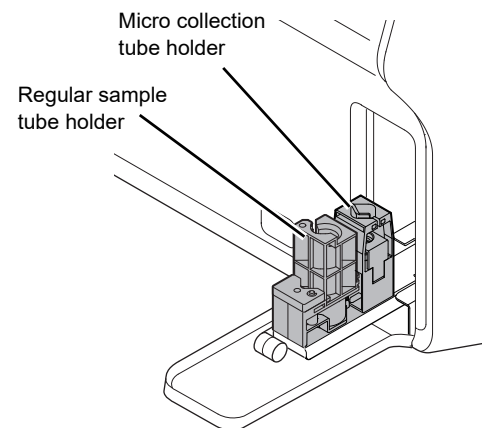
11 Place the sample tube in the sample tube holder.

● **Placing a regular sample tube or RBT micro collection tube**

Place a regular sample tube or RBT micro collection tube in the regular sample tube position at the front of the sample tube holder.

● **Placing a micro collection tube**

Place the micro collection tube in the micro collection tube position at the back of the sample tube holder.



Caution!

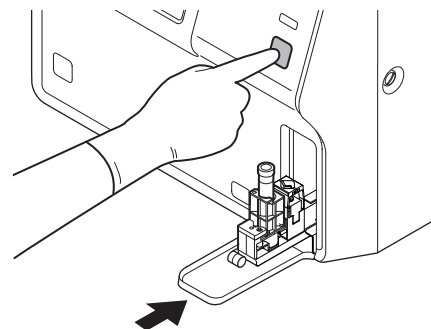
If you are using an RBT micro collection tube, be sure to select the [Raised Bottom Tube] checkbox in step 7.

Otherwise there is a risk of instrument damage.

12 Press the start switch.

The sample tube holder retracts into the instrument. Aspiration and analysis start.

When analysis finishes, the sample tube holder is ejected.



Example: When a regular sample tube is placed

**Information**

If a message appears during analysis prompting you to replace a reagent, replace the reagent. If the reagent is replaced when the reagent is low, bubbling may occur and raise the blank value.

13 Remove the sample tube.

If you have finished performing analysis, make sure that analysis is completed and then press the sample tube holder open/close switch to close the sample tube holder.

For details on checking the analysis results, see Chapter 5.

(►P.146 "Chapter 5: 5.2 Checking analysis results")

4.7 Analyzing samples (XN-350)



Caution!

The instrument does not mix the sample. Be sure to perform mixing immediately before starting analysis.

Follow the steps below to perform analysis.

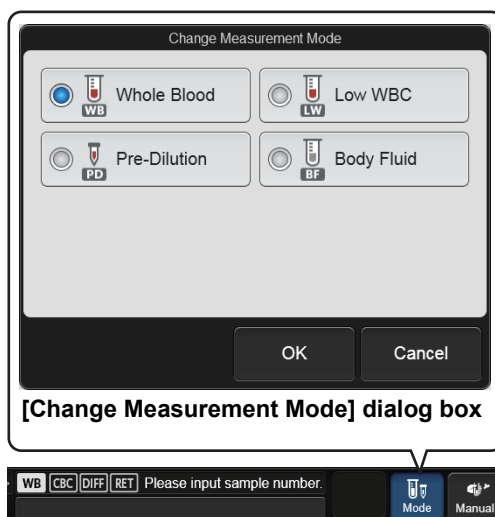
1 Make sure the instrument is in the ready state.

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

2 If you want to change the analysis mode, touch [Mode] in the control menu.

The [Change Measurement Mode] dialog box appears. The analysis modes that appear depend on your system configuration.

This step is not necessary if you will continue using the currently selected analysis mode. Go to step 5.



3 Touch the analysis mode you want to set.

The touched analysis mode is selected.

When changing to [Pre-Dilution] mode, the mode change will take time. Wait until the mode change is completed.

4 Touch [OK].

The dialog box closes.

- If you change to [Body Fluid] mode
A background check of body fluid analysis parameters starts.

Checked parameter	Background limits	Remarks
WBC-BF	0.001 x 10 ³ /μL or less	White blood cell counts in body fluid calculated from the WDF channel
RBC-BF	0.003 x 10 ⁶ /μL or less	Red blood cell counts in body fluid calculated from the RBC/PLT channel

If the results are not within the allowable range after 3 analyses, a background check error occurs. See "Troubleshooting". (► Troubleshooting, "Chapter 1: 1.1 Error message list (in alphabetical order)")

5 Touch [Manual] on the right edge of the control menu.

A dialog box corresponding to the selected mode appears.

[Whole Blood] mode/[Low WBC] mode

[Pre-Dilution] mode

[Body Fluid] mode

The check parameters that appear in [Method] vary depending on the settings. [Patient Information] appears only if the logged on user has [Display and Modify Patient Info.] permission.



Note:

If the sample number is set to [Automatically increment Sample No. (manual mode)] and the analysis settings are the same as the previously analyzed sample, settings of this dialog box can be omitted. For details on auto increment of sample numbers, see Chapter 7. (► P.224 "Chapter 7: 7.8.4 Sample number auto increment settings")

6 Touch an item to set the condition.

[Sample No.]	Enter the sample number. You can also enter a sample number by reading the sample tube barcode label using the hand-held barcode reader.
[Discrete]	Select analysis parameters using discretets. Analysis parameters cannot be selected individually. To select individual analysis parameters, register the analysis order in the [Work List]. If analysis ordering is performed, the settings of the registered analysis order are given priority.
[Patient Information]	Touch [Input] to enter the patient ID with the software keyboard. If the patient information of the entered patient ID is registered in the instrument, the information (patient name, date of birth, etc.) will appear. If analysis ordering is performed, the settings of the registered analysis order are given priority.
[Query to Host]	Specify whether or not the host computer is queried for the analysis order. Select this checkbox to query the host. Remove the checkmark when analyzing a sample without a registered analysis order, such as a STAT sample.
[Aspiration Sensor]	Specify whether or not the aspiration sensor is used. Select the checkbox to use the aspiration sensor. When the volume of blood to be aspirated is low, remove this checkmark.
[Dispense]	Use to prepare diluted blood. Touch to start dispensing CELLPACK DCL. For the dispensing procedure, see the following. (▶P.141 "4.8.3 Preparing diluted blood with the diluent dispensing function (XN-350)")

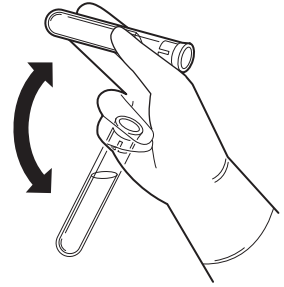


Note:

- The instrument is equipped with an aspiration sensor. However, there is a possibility that correct results may not be obtained if the sample volume is low and the sensor is not able to detect blood aspiration error.
- If you know in advance that the blood sample is extremely thin, such as blood from a dialysis patient, disable the aspiration sensor. For details, see Chapter 7.
(▶P.233 "Chapter 7: 7.9.1 Aspiration sensor settings")

7 Touch [OK].

The dialog box closes.

8 Mix the sample tube as shown.

Example: Regular sample tube

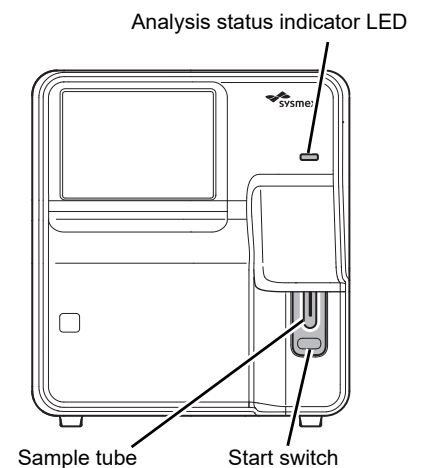
9 Remove the sample tube cap.

When removing the cap, take care that the sample does not spill.

10 Insert the pipette all the way to the bottom of the sample tube, and press the start switch.

A beep sounds and sample aspiration starts.

The analysis status indicator LED blinks green during sample aspiration. When aspiration ends, the instrument sounds two beeps and the analysis status indicator LED turns OFF.

**Information**

If a message appears during analysis prompting you to replace a reagent, replace the reagent. If the reagent is replaced when the reagent is low, bubbling may occur and raise the blank value.

11 Remove the sample tube from the pipette.

Remove the sample tube without bending the pipette.

When the instrument is ready to analyze the next sample, a beep sounds and the analysis status indicator LED lights green.

For details on checking the analysis results, see Chapter 5.

(►P.146 "Chapter 5: 5.2 Checking analysis results")



Caution!

After the sample is aspirated, remove the sample tube straight down so that it does not hit the pipette. Otherwise correct analysis results may not be obtained or the sample may spill.

4.8 Preparing diluted blood with the diluent dispensing function

The diluent dispensing function can be used to dispense 120 μL of CELLPACK DCL with the piercer (XN-550/XN-450) or pipette (XN-350).

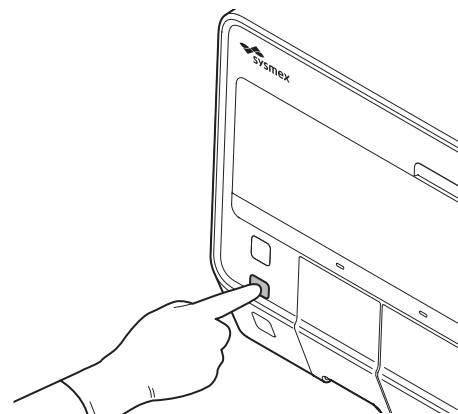
After dispensing 120 μL of CELLPACK DCL into an empty micro collection tube with the diluent dispensing function, dispense 20 μL of sample to prepare the diluted blood.

4.8.1 Preparing diluted blood with the diluent dispensing function (XN-550)

Follow the steps below to prepare diluted blood.

- 1 Make sure the button on the right edge of the control menu is [Manual]. When the mode is set to [Sampler], press the mode switch.**

The mode changes to manual analysis mode.



Note:

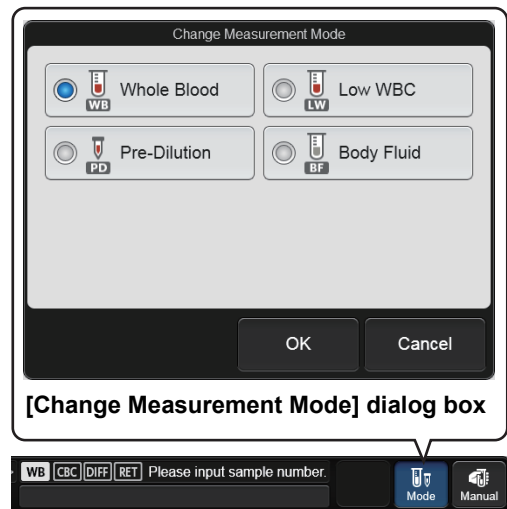
If the mode switch is pressed while analysis is in progress in sampler analysis mode, sampler analysis will pause when analysis of the current sample is completed, and the mode will change to manual analysis mode.

- 2 Make sure the instrument is in the ready state.**

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

3 Touch [Mode] on the control menu.

The [Change Measurement Mode] dialog box appears. The analysis modes that appear depend on your system configuration.



4 Touch [Pre-Dilution].

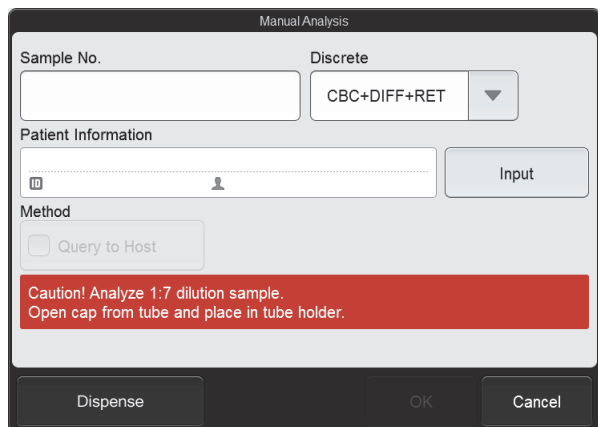
When changing to [Pre-Dilution] mode, the mode change will take time. Wait until the mode change is completed.

5 Touch [OK].

The dialog box closes.

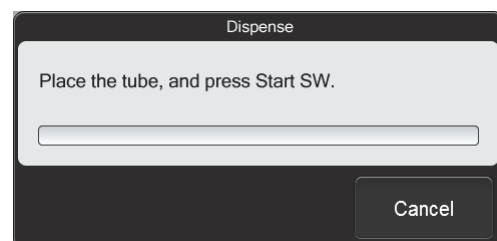
6 Touch [Manual] on the right edge of the control menu.

The dialog box on the right appears.



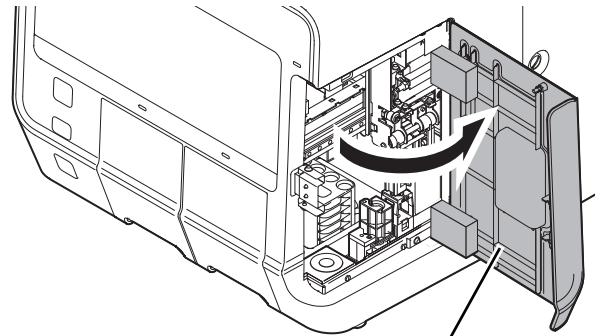
7 Touch [Dispense].

The instrument prepares for diluent dispensing, and when it completes preparations, the dialog box on the right appears.



8 Remove the cap from an empty micro collection tube.

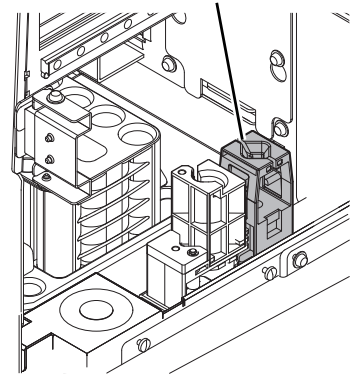
9 Open the sampler cover (manual unit).



Sampler cover (manual unit)

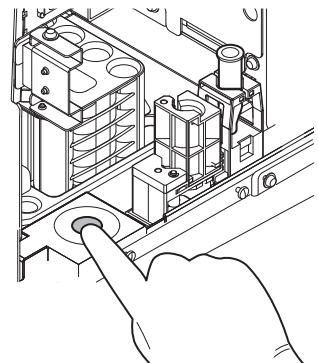
10 Place the empty micro collection tube in the sample tube holder.

Micro collection tube holder



11 Press the start switch.

The sample tube holder retracts into the instrument and diluent dispensing starts. When diluent dispensing finishes, the sample tube holder is ejected.

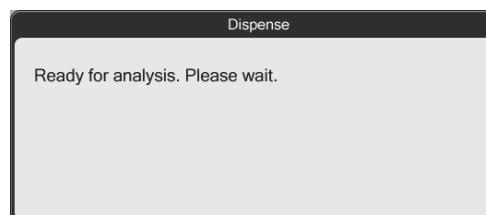


12 Remove the micro collection tube.

If you are preparing multiple diluted blood samples, repeat steps 10 to 12.

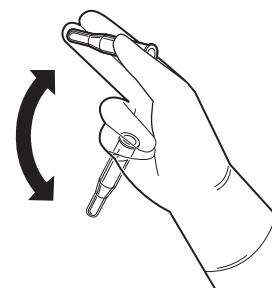
13 Touch [Cancel].

The diluent dispensing function finishes and the instrument enters the analysis ready state. The dialog box on the right appears during analysis preparation, and closes when preparation finishes.

**14 Dispense 20 µL of the sample into the micro collection tube containing the diluent.****15 Cap the micro collection tube and mix as shown.**

If you are analyzing prepared diluted blood, go to the following step.

(►P.119 "4.5 Analyzing samples using manual analysis (XN-550)" Step 7)



4.8.2 Preparing diluted blood with the diluent dispensing function (XN-450)

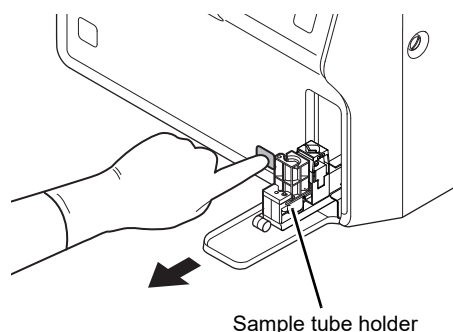
Follow the steps below to prepare diluted blood.

1 Make sure the instrument is in the ready state.

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

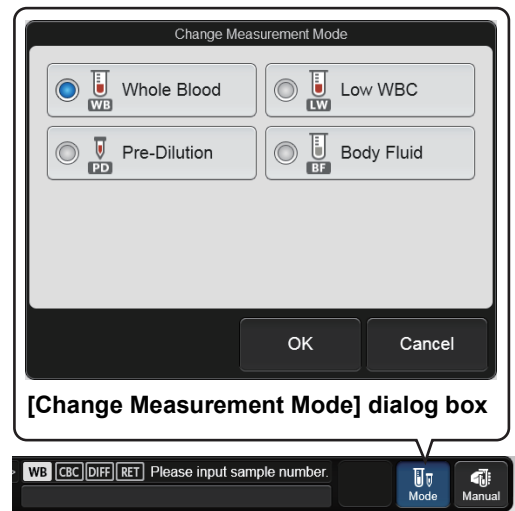
2 If the sample tube holder is not ejected, press the sample tube holder open/close switch.

The sample tube holder is ejected.



3 Touch [Mode] on the control menu.

The [Change Measurement Mode] dialog box appears.
The analysis modes that appear depend on your system configuration.



4 Touch [Pre-Dilution].

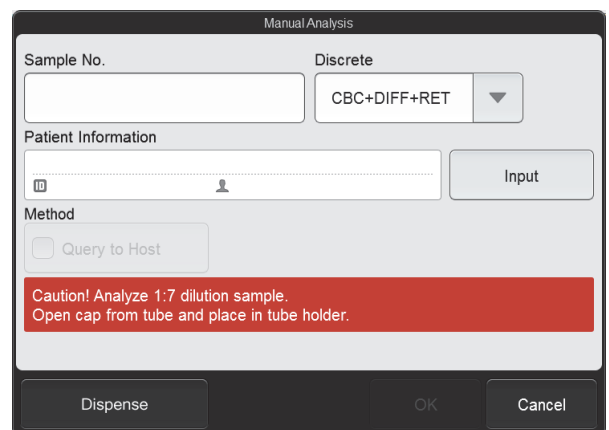
When changing to [Pre-Dilution] mode, the mode change will take time. Wait until the mode change is completed.

5 Touch [OK].

The dialog box closes.

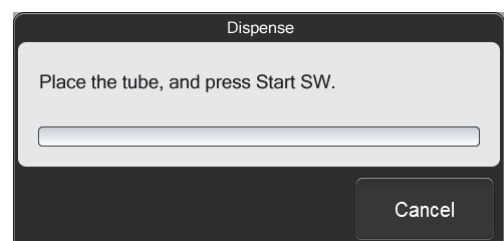
6 Touch [Manual] on the right edge of the control menu.

The dialog box on the right appears.



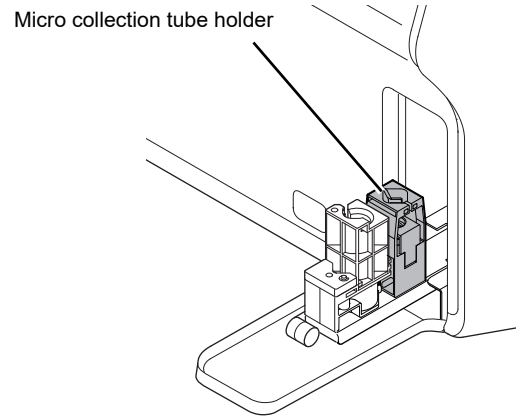
7 Touch [Dispense].

The instrument prepares for diluent dispensing, and when it completes preparations, the dialog box on the right appears.



8 Remove the cap from an empty micro collection tube.

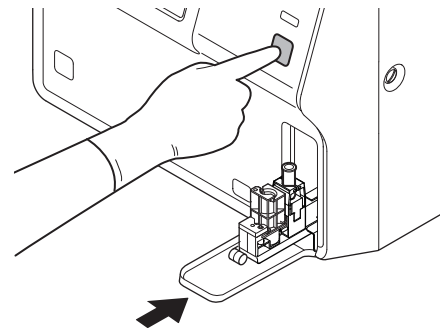
9 Place the empty micro collection tube in the sample tube holder.



10 Press the start switch.

The sample tube holder retracts into the instrument and diluent dispensing starts.

When diluent dispensing finishes, the sample tube holder is ejected.

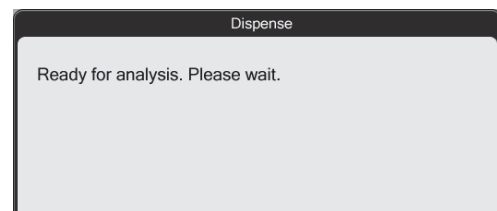


11 Remove the micro collection tube.

If you are preparing multiple diluted blood samples, repeat steps 9 to 11.

12 Touch [Cancel].

The diluent dispensing function finishes and the instrument enters the analysis ready state. The dialog box on the right appears during analysis preparation, and closes when preparation finishes.

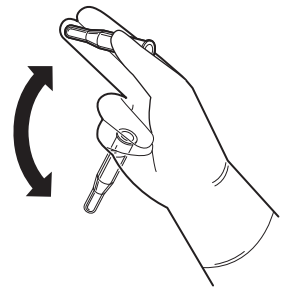


13 Dispense 20 μ L of the sample into the micro collection tube containing the diluent.

14 Cap the micro collection tube and mix as shown.

If you are analyzing prepared diluted blood, go to the following step.

(►P.125 "4.6 Analyzing samples (XN-450)" Step 7)



4.8.3 Preparing diluted blood with the diluent dispensing function (XN-350)

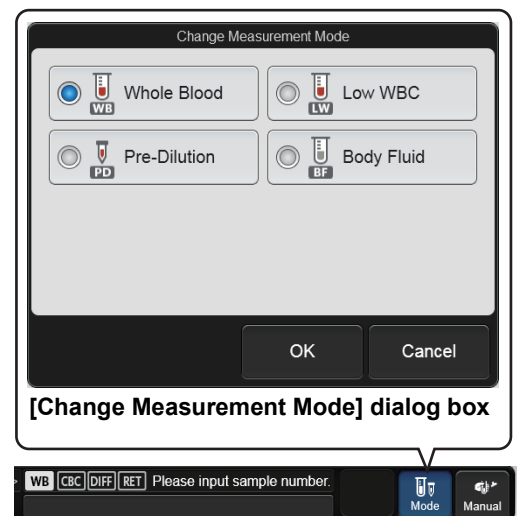
Follow the steps below to prepare diluted blood.

1 Make sure the instrument is in the ready state.

If the instrument status at the bottom left of the screen is not green, wait until it becomes green.

2 Touch [Mode] on the control menu.

The [Change Measurement Mode] dialog box appears.
The analysis modes that appear depend on your system configuration.

**3 Touch [Pre-Dilution].**

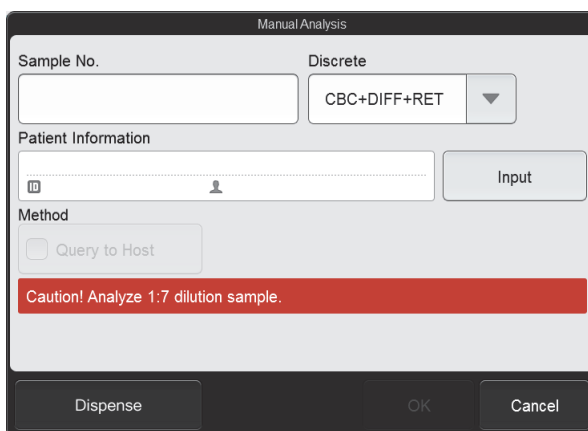
When changing to [Pre-Dilution] mode, the mode change will take time. Wait until the mode change is completed.

4 Touch [OK].

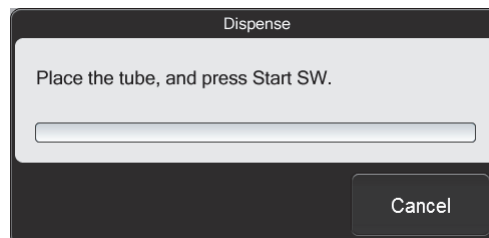
The dialog box closes.

5 Touch [Manual] on the right edge of the control menu.

The dialog box on the right appears.

**6 Touch [Dispense].**

The instrument prepares for diluent dispensing, and when it completes preparations, the dialog box on the right appears.

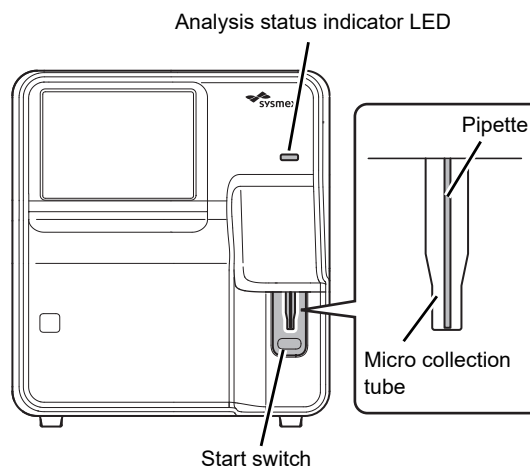
**7 Remove the cap from an empty micro collection tube.****8 Insert the pipette until it contacts the bottom of the micro collection tube, and press the start switch.**

Diluent dispensing starts.

While dispensing, keep the pipette in contact with the bottom of the micro collection tube.

While diluent is dispensed, the analysis status indicator LED blinks green and the beeper sounds repeatedly.

When dispensing finishes, the analysis status indicator LED turns OFF and the beeping stops.



9 Remove the micro collection tube from the pipette.

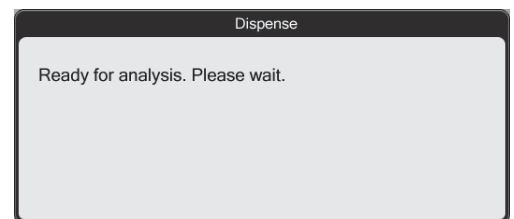
Remove the micro collection tube without bending the pipette.
If you are preparing multiple diluted blood samples, repeat steps 7 to 9.

**Caution!**

After dispensing the diluent, remove the micro collection tube straight down so that it does not hit the pipette. Otherwise correct analysis results may not be obtained or the sample may spill.

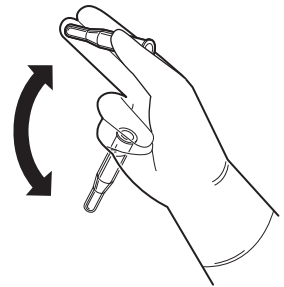
10 Touch [Cancel].

The diluent dispensing function finishes and the instrument enters the analysis ready state. The dialog box on the right appears during analysis preparation, and closes when preparation finishes.

**11 Dispense 20 μL of the sample into the micro collection tube containing the diluent.****12 Cap the micro collection tube and mix as shown.**

If you are analyzing prepared diluted blood, go to the following step.

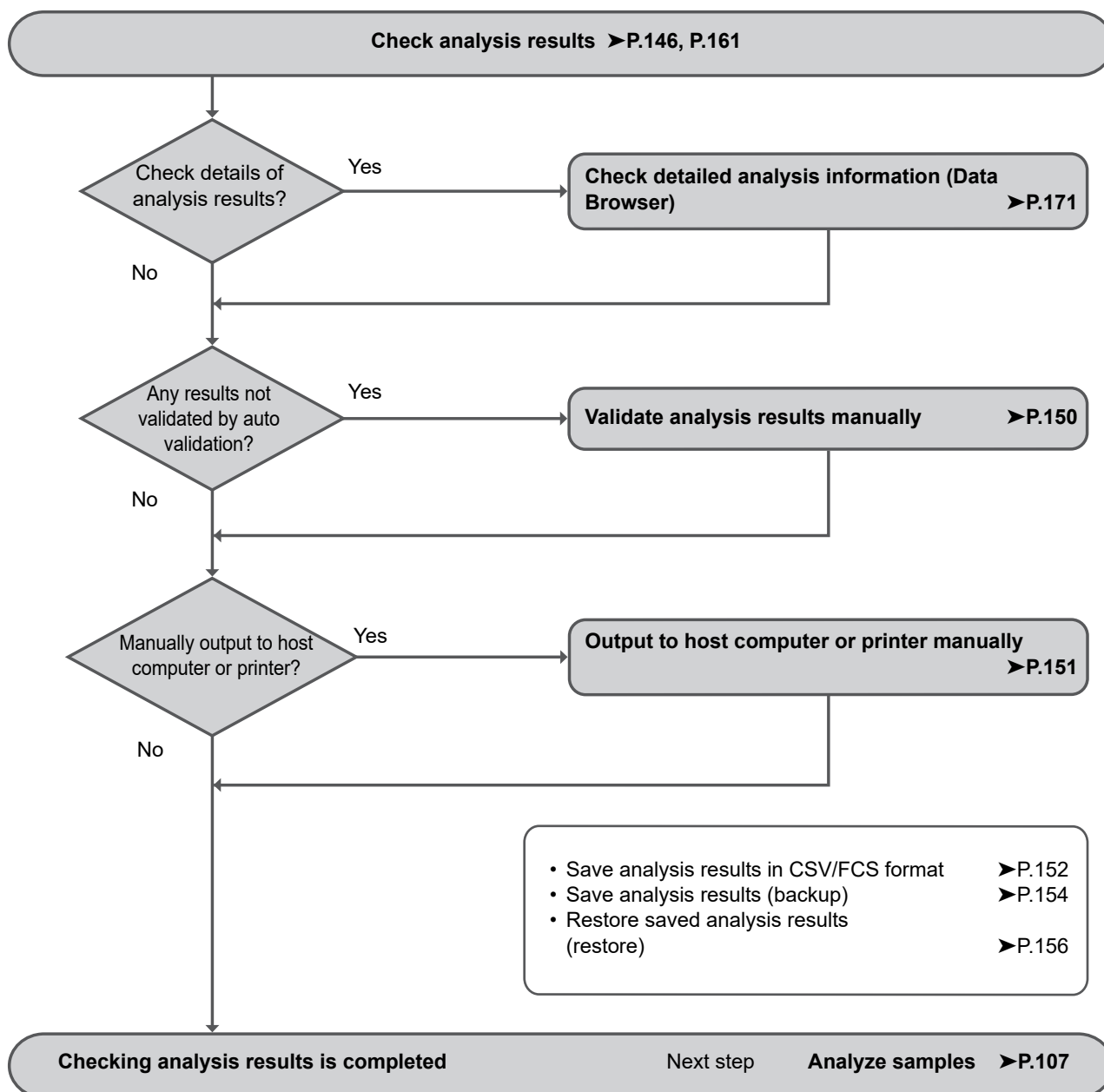
(►P.130 "4.7 Analyzing samples (XN-350)" Step 6)



Chapter 5 Checking Analysis Results (Sample Explorer)

5.1 Flow of checking analysis results

The flow chart below shows the sequence followed to check analysis results. The typical flow is shown in gray.



5.2 Checking analysis results

The saved analysis results can be checked in the [Sample Explorer] screen.



Note:

Up to 100,000 analysis results can be saved. Once 100,000 results are saved, each new result automatically deletes the result with the oldest analysis date and time.

1 Touch the [Sample Explorer] icon in the [Menu] screen.

Or touch the [Explorer] button on the toolbar.

The [Sample Explorer] screen appears.

Sample No.	Date	Time	Seq.	Adapter	Pos.	
407-0007-bf001	2014/03/07	23:22:58	16			
2	2014/03/07	11:01:01	8			CBC+H
1	2014/03/07	10:58:51	7			CBC
P216-L3-3336-01	2014/03/07	10:54:40	1			CBC+H
CAL-CAL-02	2014/03/05	16:12:24	2			CBC+H
CAL-CAL-01	2014/03/05	16:11:58	1			CBC+H
CAL-CAL-01	2014/03/05	16:11:58	1			CBC+H
QC-33361102	2014/02/27	16:09:27	15			CBC+H
QC-33361101	2014/02/27	16:09:27	15			CBC+H
QC-33361101	2014/02/27	16:09:27	15			CBC+H

[Sample Explorer] screen

2 Check the analysis results.

For details on the [Sample Explorer] screen, see the following.

(►P.161 "5.11 [Sample Explorer] screen")



Information

- Flags (IP messages) are only intended for use in the clinical laboratory and are not for patient diagnosis. Flags notify the operator of the possibility of a specific sample abnormality that requires examination of the analysis results.
- Analysis results of research parameters are indicated by a gray background to distinguish them from report parameters. Analysis results of research parameters must not be used for the diagnosis of patients.

5.2.1 Searching for the analysis results (samples)

You can search for an analysis results by sample number, patient name, and other information.



Note:

You cannot search for a sample when the last 10 samples are displayed using [Display].
For details on [Display], see the following.
(►P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")

Follow the steps below to search for analysis results.

1 Touch the [FIND] button on the toolbar.

The [FIND] dialog box appears.

[FIND] dialog box

2 Specify the search conditions.

Touch a search item to select it, and a condition field will appear on the right. Touch the condition field and enter conditions.

Up to 3 search items can be specified from the items below.

[Sample No.]	Up to 22 characters can be entered for the condition. Double-byte characters cannot be entered.
[Patient ID]	Up to 16 characters can be entered for the condition. Double-byte characters cannot be entered.
[Last Name] (the patient's last name)	Up to 20 characters can be entered for the condition.
[First Name] (the patient's first name)	Up to 20 characters can be entered for the condition.
[Ward Name]	Up to 20 characters can be entered for the condition.
[Doctor Name]	Up to 20 characters can be entered for the condition.



Note:

You can enter "?" and "*" as wildcard characters in your search.

- "?": Used as a wildcard for 1 character.
Example: If you search for "99?99", "99099", "99999", and "99A99" are all selected.
- *": Used as a wildcard for 0 or more characters.
Example: If you search for "9*9", "909", "9119", and "99A99" are all selected.

3 Touch [PREV.] or [NEXT].

The analysis results that match the search conditions are selected in the list. The dialog box is reduced and only the button area appears.

[PREV.]	Touch to search upward from the analysis result selected in the list.
[NEXT]	Touch to search downward from the analysis result selected in the list.



Note:

Touch [Condition] to return to the dialog box that shows the condition.

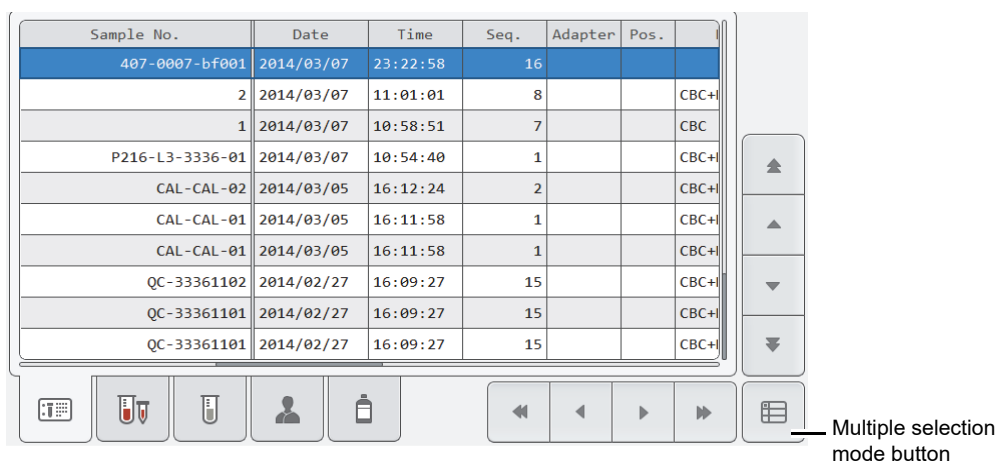
4 Touch [Close].

The dialog box closes.

5.3 Selecting analysis results to validate/output

To validate or output analysis results, first select the analysis results in the analysis result list.

In the regular display, only the set of analysis results on the line where the cursor is positioned can be selected.

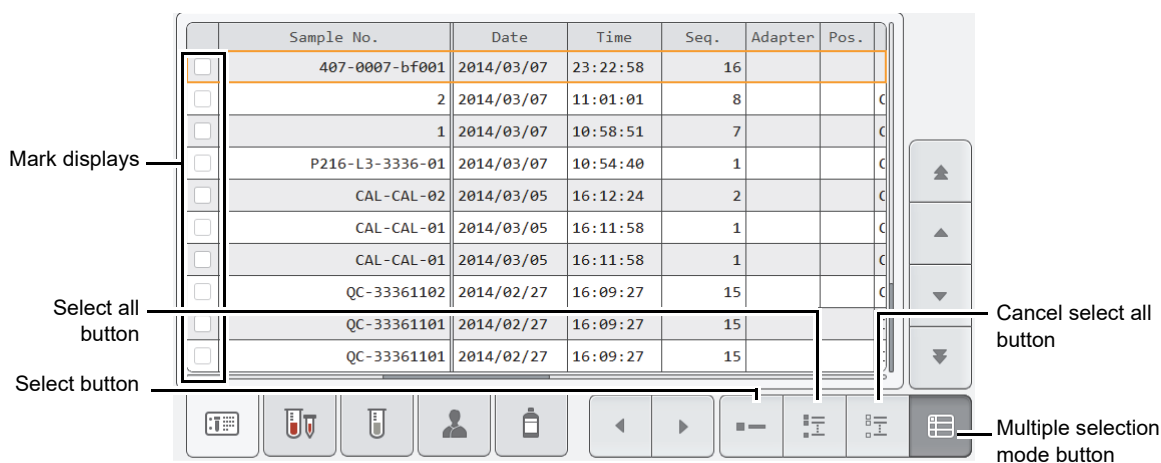


[Sample Explorer] screen (Regular display)

If you want to perform an operation using the analysis results of multiple samples, change the mode of the analysis result list to multiple selection mode.

Touch the multiple selection mode button to change to the multiple selection mode display below.

Enter marks to specify the analysis results you want to select.



[Sample Explorer] screen (Multiple selection mode display)

Mark displays	Analysis results that are marked (orange) will be the target of the operation.
Select button	Touch to add marks to the analysis results on the line where the cursor is positioned. If a mark already appears, the mark is cleared.
Select all button	Touch to add a mark to all analysis results.
Cancel select all button	Touch to clear the marks from all analysis results.
Multiple selection mode button	Touch to change the analysis result list to the regular display.

5.4 Validating analysis results

To validate analysis results means to accept them so that they can be output externally for reporting purposes.



Note:

- You cannot validate analysis results when the last 10 samples are displayed using [Display]. For details on [Display], see the following.
(►P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")
- You can also set validation to be performed automatically. See Chapter 7.
(►P.224 "Chapter 7: 7.8.5 Auto validate settings")

Follow the steps below to validate analysis results. This procedure is also used to cancel validation.

1 Select the analysis results you want to validate in the analysis result list.

If you want to perform an operation using the analysis results of multiple samples, change the mode of the analysis result list to multiple selection mode and add marks. For the multiple selection mode, see the following.
(►P.149 "5.3 Selecting analysis results to validate/output")

2 Touch the [Validate] button on the toolbar.

The selected analysis results are validated, and [V] appears in the [V] (validate) column.
If the selected analysis results are already validated, validation is canceled and the [V] (validate) column becomes blank.

If the analysis result list is in multiple selection mode and the analysis results of multiple samples are selected, all selected analysis results change to the same validation state as the results where the cursor is positioned.



Note:

After validating, the sample number or other sample information cannot be changed. If you need to change any information, cancel validation.

5.5 Outputting analysis results to host computer or printer

From the analysis result list in the [Sample Explorer] screen, the analysis results of the selected samples can be output to various output destinations.

Up to 100 samples can be output at once.



Note:

- In the cases below, the analysis results cannot be output.
 - The sample has not been validated.
 - The last 10 samples are displayed using [Display].
For details on [Display], see the following.
(▶P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")
 - The instrument is not connected to a host computer or printer.
- You can also set auto output to a host computer or graphic printer. See Chapter 7. (▶P.226 "Chapter 7: 7.8.6 Auto output settings")

Follow the steps below to output to a host computer or printer.

1 Select the analysis results you want to output in the analysis result list.

If you want to perform an operation using the analysis results of multiple samples, change the mode of the analysis result list to multiple selection mode and add marks. For the multiple selection mode, see the following. (▶P.149 "5.3 Selecting analysis results to validate/output")

2 Touch the output destination from the [Output] button on the toolbar.

Destinations that are not connected are grayed out and cannot be selected.

[Host Computer (HC)]	Output to the host computer.
[Report (GP)]	Output to a graphic printer in report format.
[Ledger (LP)]	Output to a list printer.
[Report for Lab Use Only]	Output to a graphic printer in lab only format.

5.6 Saving analysis results in CSV/FCS format

Analysis results selected in the [Sample Explorer] screen can be saved to a USB memory stick as a file in CSV/FCS format.



Note:

- CSV output is not possible when the last 10 samples are displayed using [Display]. For details on [Display], see the following.
(▶P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")
- Note the following points when performing CSV output.
 - The order of the output items cannot be changed.
 - Headers of research parameters are enclosed in [].
 - Scattergrams and distributions are separately output to an image file*.

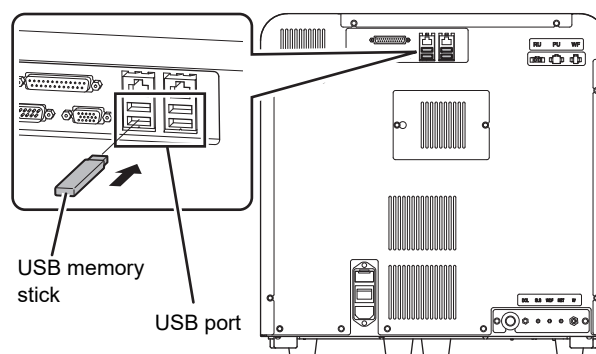
* Varies depending on the settings.

Follow the steps below to save the analysis results in CSV/FCS format.

1 Insert the USB memory stick.

Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 Select the analysis results you want to save in the analysis result list.

If you want to perform an operation using the analysis results of multiple samples, change the mode of the analysis result list to multiple selection mode and add marks. For the multiple selection mode, see the following.
(▶P.149 "5.3 Selecting analysis results to validate/output")

3 Touch the [File] button - [Output in CSV Format]/[Output in FCS Format] on the toolbar.

The data save starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the data save is complete.



Note:

If you selected multiple analysis results for output, the results will be output in order from the top of list.

4 Remove the USB memory stick.

● Save directory and file name

When you save the results, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

- Analysis results file when output in CSV format.
Instrument ID_Software version_SAMPLE.csv
Example: XN-XXX_00-01_SAMPLE.csv
- Analysis results file when output in FCS format.
[Instrument ID][Software version][Fcs][Date analyzed_Time analyzed][Sample number][Channel name].fcs
Example: [XN-XXX][00-01][Fcs][20140505_080808][1234][WDF].fcs
- Image file
Instrument ID_Software version_Analysis date_Analysis time_Sample number_Image name.png (or bmp)
Example: XN-XXX_00-01_20140505_080808_1234_RBC.png

* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

5.7 Saving analysis results (backup)

Analysis results can be backed up to a USB memory stick.
Up to 100 samples can be backed up at once.



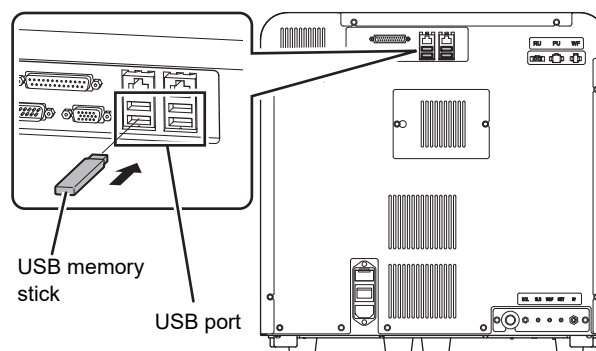
Note:

- You cannot back up data when the last 10 samples are displayed using [Display].
For details on [Display], see the following.
(▶P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")
- Whether or not the backup data includes patient information depends on the security settings. For details on security, see Chapter 7.
(▶P.234 "Chapter 7: 7.9.3 Security settings")

Follow the steps below to save the analysis results in a file.

1 Insert the USB memory stick.

Insert the USB memory stick into a free USB port on the back of the instrument.
A USB memory stick with a password lock function cannot be used.



2 Select the analysis results you want to save in the analysis result list.

If you want to perform an operation using the analysis results of multiple samples, change the mode of the analysis result list to multiple selection mode and add marks. For the multiple selection mode, see the following.
(▶P.149 "5.3 Selecting analysis results to validate/output")



Note:

If you selected analysis results of multiple samples, all selected analysis results are backed up to multiple files.

3 Touch the [File] button - [Backup] on the toolbar.

The backup starts and the [Waiting to complete execution] dialog box appears.
The [Waiting to complete execution] dialog box closes when the backup is complete.

4 Remove the USB memory stick.

● Backup directory and file name

When backup is executed, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

[Instrument ID][Software version][Date analyzed_Time analyzed][Sample number].smp

Example: [XN-XXX][00-01][20140505_080808][1234].smp

* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

5.8 Restoring saved analysis results (restore)

You can restore saved analysis results.

Up to 100 samples of analysis results can be restored.



Note:

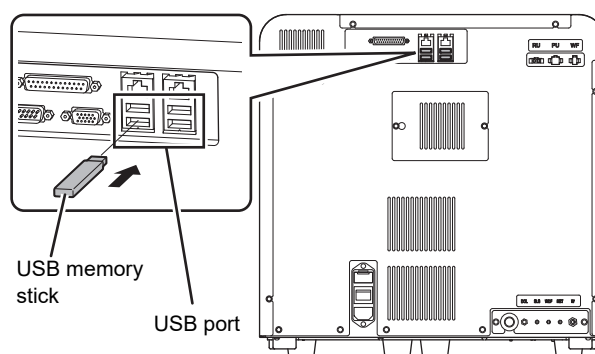
You cannot restore analysis results when the last 10 samples are displayed using [Display].
For details on [Display], see the following.
(►P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")

Follow the steps below to restore the analysis results.

1 Insert the USB memory stick that contains the analysis result file.

Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 Touch the [File] button - [Restore] on the toolbar.

The [Import] dialog box appears.

If there is only 1 file, the [Import] dialog box does not appear.



[Import] dialog box

3 Select the checkboxes of the files you want to restore.

Files with checkmarks will be restored.

Each time you touch the checkbox, the checkbox is selected or unselected.

4 Touch [OK].

The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the analysis result restore is complete.

**Note:**

If the logged on user does not have [Display and Modify Patient Info.] permission, a dialog box appears to warn the user that patient information cannot be restored. To restore the data except for patient information, touch [OK]. For details on [Display and Modify Patient Info.] permission, see Chapter 7. (►P.217 "Chapter 7: 7.8.1 User information management (user registration)")

- When there are analysis results with non-matching patient information

When the patient information of the restored analysis results differs from the registered patient information, the dialog box on the right appears.

The dialog box is titled "Confirmation" and contains the following text: "The Patient ID (1234567890) included in the file you are attempting to restore is already registered, and the patient information is different. Are you sure you want to overwrite?". Below the text are two radio button options: "Overwrite" (which is selected) and "Register in different ID". To the right of the "Register in different ID" option is an empty text input field. At the bottom of the dialog are three buttons: "Yes", "No", and "Cancel".

- To change (overwrite) the registered patient information to the patient information in the backup file: Select [Overwrite] and touch [Yes].
- To register the patient information in the backup file using a different ID: Select [Register in different ID], enter the new patient ID in the entry field on the right, and touch [Yes]. Up to 16 characters can be entered for the patient ID. Double-byte characters cannot be entered.
- To restore analysis results without the patient information in the backup file: Touch [No].

[Sample Comment] Displays comments about the sample.
Up to 40 characters can be entered.

* If the patient ID was changed, delta check is performed.

4 Touch [OK].

The modified sample information is saved.

5.10 Deleting analysis results

Analysis results can be deleted.



Note:

You cannot delete analysis results when the last 10 samples are displayed using [Display].
For details on [Display], see the following.
(►P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")

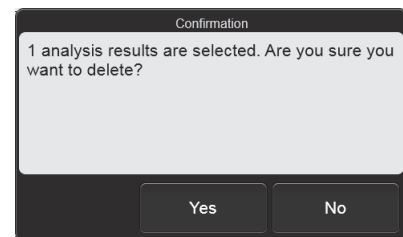
Follow the steps below to delete analysis results.

1 Select the analysis results you want to delete in the analysis result list.

If you want to perform an operation using the analysis results of multiple samples, change the mode of the analysis result list to multiple selection mode and add marks. For the multiple selection mode, see the following.
(►P.149 "5.3 Selecting analysis results to validate/output")

2 Touch the [Delete] button on the toolbar.

The dialog box on the right appears.



3 Touch [Yes].

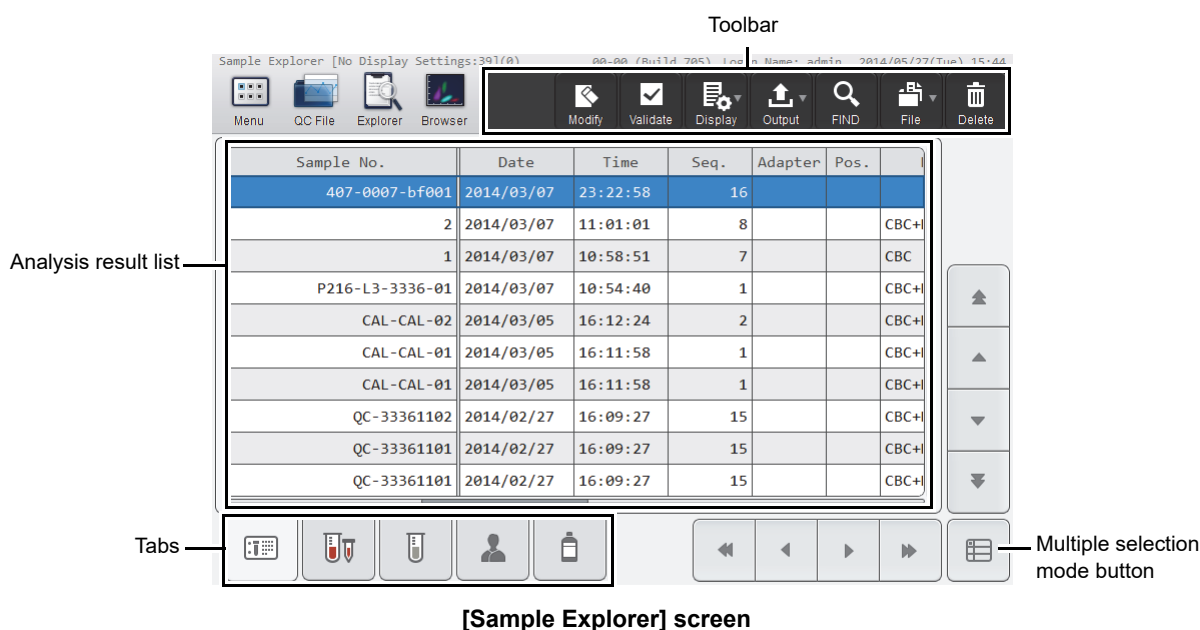
The deletion starts and the [Waiting to complete execution] dialog box appears.
The [Waiting to complete execution] dialog box closes when the deletion is complete.

5.11 [Sample Explorer] screen






Touch the [Sample Explorer] icon in the [Menu] screen to display the [Sample Explorer] screen. You can also touch the [Explorer] button on the toolbar.

Information

- Flags (IP messages) are only intended for use in the clinical laboratory and are not for patient diagnosis. Flags notify the operator of the possibility of a specific sample abnormality that requires examination of the analysis results.
- Analysis results of research parameters are indicated by a gray background to distinguish them from report parameters. Analysis results of research parameters must not be used for the diagnosis of patients.



Toolbar	Displays the function buttons.
[Modify]	Use to modify the sample information of the analysis results selected in the analysis result list. (>P.158 "5.9 Modifying sample information")
[Validate]	Touch to validate the selected analysis results in the analysis result list. If already validated, this cancels the validation. (>P.150 "5.4 Validating analysis results")
[Display]	Touch to open a submenu that allows you to change the sorting order and display conditions of the analysis result list. (>P.167 "5.11.3 Changing the display method of the analysis result list (display settings)")
[Output]	Touch to open a submenu that allows you to output the analysis results selected in the analysis result list to the output destination shown in the submenu. (>P.151 "5.5 Outputting analysis results to host computer or printer")
[FIND]	Use to search for an analysis result. (>P.147 "5.2.1 Searching for the analysis results (samples)")

[File]	<p>Touch to open a submenu that allows you to save and restore an analysis result.</p> <p>[Output in CSV Format]: Use to save the analysis result in CSV format. (▶P.152 "5.6 Saving analysis results in CSV/FCS format")</p> <p>[Output in FCS Format]: Use to save the analysis result in FCS format. (▶P.152 "5.6 Saving analysis results in CSV/FCS format")</p> <p>[Backup]: Use to back up the analysis result. (▶P.154 "5.7 Saving analysis results (backup)")</p> <p>[Restore]: Use to restore the backed up data. (▶P.156 "5.8 Restoring saved analysis results (restore)")</p>
[Delete]	<p>Use to delete the data selected in the analysis result list. (▶P.160 "5.10 Deleting analysis results")</p>
Analysis result list	<p>Displays a list of the analysis results. For details, see the following.</p> <p>(▶P.163 "● Items that appear in the Sample Information tab") (▶P.165 "● Items that appear in the Whole Blood Measurement tab") (▶P.165 "● Items that appear in the Body Fluid Measurement tab") (▶P.165 "● Items that appear in the Patient Information tab") (▶P.165 "● Items that appear in the Reagent tab")</p>
Tabs	<p>Touch to change the items displayed in the analysis result list.</p> <p> : Sample Information tab</p> <p> : Whole Blood Measurement tab</p> <p> : Body Fluid Measurement tab</p> <p> : Patient Information tab</p> <p> : Reagent tab</p> <p>The Body Fluid Measurement tab does not appear when the instrument does not have the body fluid analysis function.</p>
Multiple selection mode button	<p>Touch to change the analysis result list to the multiple selection mode. For the multiple selection mode, see the following. (▶P.149 "5.3 Selecting analysis results to validate/output")</p>

5.11.1 Analysis result list

● Items that appear in the Sample Information tab

[Sample No.]	Displays the sample number.
[V] (validate)	[V] will appear for validated samples. If a sample has not been validated, nothing is displayed.
Measurement mode	Displays the analysis mode. [WB]: [Whole Blood] mode [LW]: [Low WBC] mode [PD]: [Pre-Dilution] mode [BF]: [Body Fluid] mode (Shown with a red background when carryover occurs.)
Sample information	Displays how the sample number was obtained. [A]: Auto increment [B]: ID barcode reading [M]: Manual input [C]: Query to a host computer by adapter number or sample tube position
[Output]	Displays the output status of the analysis results. [G]: Has not been output to a graphic printer. [H]: Has not been output to a host computer. Up to 40 seconds is required for an output result to be reflected in the above.
[P/N]	Displays the Positive/Negative judgment of the analysis results. [D]: Diff. Positive [M]: Morph. Positive [C]: Count Positive On Negative samples, [D], [M], and [C] are not shown.
[Action]	When there is an action message, this shows the type. [Check]: Displayed when a sample needs to be checked. [Review]: Displayed when an analysis result needs to be checked. [Retest]: Displayed when analysis must be repeated. The action message can be checked in the [Data Browser] screen.
[Error]	Displays any errors that occurred during analysis. [Result]: Displayed when one of the following errors has occurred: [Blood cannot be aspirated.], [Insufficient blood volume], [Low count error]. [Func.]: Displayed when an error other than one of the [Result] errors or barcode read error has occurred.
[Date]	Displays the date when the analysis result was made available.
[Time]	Displays the time when the analysis result was made available.
[Seq.]	Displays the sequential number of the analysis day the instrument was turned on.
[Adapter]	Parameter only for XN-550. Displays the adapter number when sampler analysis is performed. For all other types of analysis, nothing is displayed.
[Pos.]	Parameter only for XN-550. Displays the sample tube position number when sampler analysis is performed. For all other types of analysis, nothing is displayed.

[Discrete]	Displays the discrete. For the discrete, see Chapter 4. (►P.109 "Chapter 4: 4.2.3 Discrete")
[Distribution]	Displayed when there is an abnormality in a distribution. [R]: Abnormality in an RBC distribution [P]: Abnormality in a PLT distribution
[IP (WBC)]	IP messages are displayed by flag number.
[IP (RBC)]	For details, see "Troubleshooting".
[IP (PLT)]	(►Troubleshooting, "Chapter 5: 5.2 List of IP messages")
[Order Type]	Displays the order type. [Initial]: First analysis order for sampler analysis [Initial/Repeat]: An order that resulted in an error in the initial test for sampler analysis and was re-analyzed [Rerun]: An order for a repeat analysis of the same parameters as the initial test in sampler analysis [Reflex]: An order for analysis of additional parameters after the initial test of sampler analysis [Rerun/Repeat]: An order for re-analysis due to an error that occurred after a [Rerun] test in sampler analysis [Reflex/Repeat]: An order for re-analysis due to an error that occurred after a [Reflex] test in sampler analysis [Manual]: An order for manual analysis [Manual (Open)]: An order for open analysis On the XN-450, [Manual] or [Manual (Open)]. On the XN-350, always [Manual (Open)].
[Rule Result]	Parameter only for XN-550. Displays the result of the rule judgment for the analysis result of the initial test. If a rule judgment was not performed, nothing is displayed. [Repeat]: Analysis must be repeated due to an error in the initial test. [Rerun]: Analysis must be repeated for the same parameters as in the initial test. [Reflex]: Analysis must be performed with additional parameters. [Query To HOST]: The host must be queried. [None]: It is not necessary to query the host or repeat analysis. Some rules will display the number of comments in parentheses after the judgment. Example: [Reflex] with 1 comment: [Reflex (1)]
[Validator]	If validation was performed manually, this field shows the name of the logged on user. When auto validation takes place, [(Auto Validate)] appears.
[Sample Comment]	Displays the comment entered when the sample was registered.

● Items that appear in the Whole Blood Measurement tab

Displays the sample numbers and the analysis results of blood samples.

Displayed item	Remarks
WBC, RBC, HGB, HCT, MCV, MCH, MCHC, PLT, RDW-SD, RDW-CV, MicroR, MacroR, PDW, MPV, P-LCR, PCT	CBC parameters
NEUT#, LYMPH#, MONO#, EO#, BASO#, NEUT%, LYMPH%, MONO%, EO%, BASO%, IG#, IG%, AS-LYMP#*, AS-LYMP%*, NEUT-RI*, NEUT-GI*	DIFF parameters
RET%, RET#, HFR, MFR, LFR, IRF, RET-He, RBC-He, Delta-He, HYPO-He, HYPER-He	RET parameters*

* The availability of functions depends on your system configuration.

An abnormality in the analysis results may be shown by a mask or a mark.

For details, see the following.

(►P.166 "5.11.2 Display of analysis result data")

● Items that appear in the Body Fluid Measurement tab

Displays the sample numbers and the analysis results of the body fluid samples.

Displayed item
WBC-BF, RBC-BF, MN#, PMN#, MN%, PMN%, TC-BF#

● Items that appear in the Patient Information tab

[Sample No.]	Displays the sample number.
[Patient ID]	Displays the patient information registered for the sample.
[Patient Name]	
[Sex]	
[Age]	
[Ward]	
[Doctor Name]	
[Patient Comment]	

● Items that appear in the Reagent tab

[Sample No.]	Displays the sample number.
[CELLPACK DCL]	[CELLPACK DFL] and [Fluorocell RET] do not appear when the instrument does not have the RET analysis function.
[SULFOLYSER]	
[Lysercell WDF]	Displays the lot number of the reagent that was used at the time the sample was analyzed.
[Fluorocell WDF]	If the lot number is not registered, [Not Registered] appears.
[CELLPACK DFL]	
[Fluorocell RET]	For details on reagents, see "General Information". (►General Information, "Chapter 7: Reagents")

5.11.2 Display of analysis result data

When an analysis result could not be obtained due an error or other problem, the result is masked. When an analysis result is determined to be abnormal, a mark appears.

Data masks

Display	Meaning	Description
[- - -]	Analysis not possible	Indicates that an analysis error or a data calculation error occurred and the data cannot be displayed.
[++++]	Out of range	Indicates that the data cannot be displayed because the analysis result is outside the display range.
[]	No order	Indicates that there is no analysis order.

Marks^{*1,2}

Display	Meaning	Description
[*]	Low reliability	Indicates that the reliability of the data is low.
[@]	Out of range	Indicates that the data is outside the linearity limits.
[!]	Over critical value upper limit /under lower limit Exceeds allowable background check value	Indicates that the value is over or under the clinical critical value. Also indicates that the value is over the allowable value for a background check.
[+]	Over upper limit	Indicates that the value is higher than the reference interval.
[-]	Under lower limit	Indicates that the value is under the reference interval.

1 Only 1 mark can be shown per data. If an analysis result has multiple abnormalities, the abnormality that has the highest priority is indicated. The order of priority is the same as the order of appearance of the marks in the above table ([] has the highest priority).

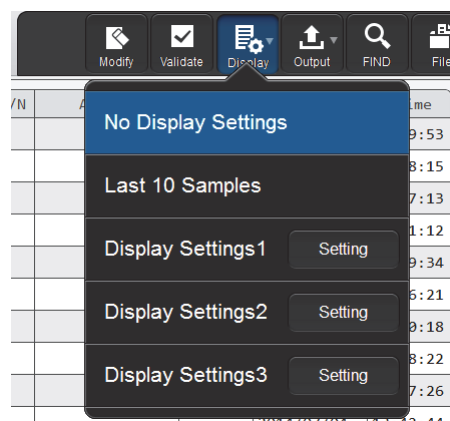
2 The priority levels of [] and [@] are changed in the service settings.

5.11.3 Changing the display method of the analysis result list (display settings)

You can change the sorting order of the analysis result list, and specify filter conditions to display only specific samples. Follow the steps below to change the display method.

1 Touch the [Display] button on the toolbar.

The submenu on the right appears.



2 Touch the desired display method.

The submenu closes and the display of the analysis result list changes.

[No Display Settings]	Touch to change to the standard display method (sort conditions: date and time of analysis in descending order, filter conditions: none).
[Last 10 Samples]	Touch to change to the display of only the last 10 samples by the standard display method.
[Display Settings1] to [Display Settings3]	Touch to change to the sort conditions and filter conditions set in the corresponding item.
[Setting]	Touch to set the sort conditions and filter conditions.

The name of the selected display method appears next to the screen name in the upper left corner of the screen.

● Registering sort conditions and filter conditions

Follow the steps below to register display setting conditions.

1 Touch [Setting] in the submenu of the [Display] button.

The dialog box on the right appears.

2 Enter [Display Setting Name].

This is the name that appears in the submenu. Up to 20 characters can be entered.

3 Set the sort conditions.

Touch and select a sort key, and touch the sorting order ([Asc.]/[Desc.]).

To enable the sort key settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.

Sorting takes place according to the settings of the top key, which has priority.

The sort keys below can be selected.

[Date]	Sorts by the date the data was analyzed.
[Time]	Sorts by the time the data was analyzed.
[Sample No.]	Sorts by sample number.
[Tube Pos.]	Sorts by sample tube position number.
[Sequence No.]	Sorts by the sequential number of analysis dates.

4 Touch the [Filter Condition] tab.

5 Set the filter conditions.

Touch a filter item, and touch and enter the condition for that item.

To enable the filter settings, select the checkbox on the left. Each time you touch the checkbox, the checkbox is selected or unselected.

The conditions that can be selected vary by filter item. For the conditions of each item, see the following.

(▶P.169 "● List of filter items and conditions")

Filter items

Conditions

6 Touch [Regist.].

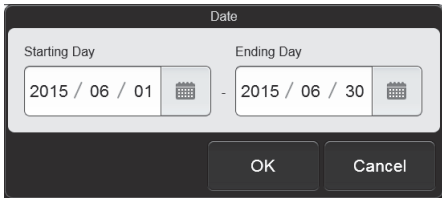
The dialog box closes and the set information is registered. The list display changes according to the set conditions.



Note:

If analysis data is selected with display conditions specified and a condition is no longer satisfied due to the date being changed or other reason, the selected state cannot be maintained. A dialog box appears to notify you of the change of selection range.

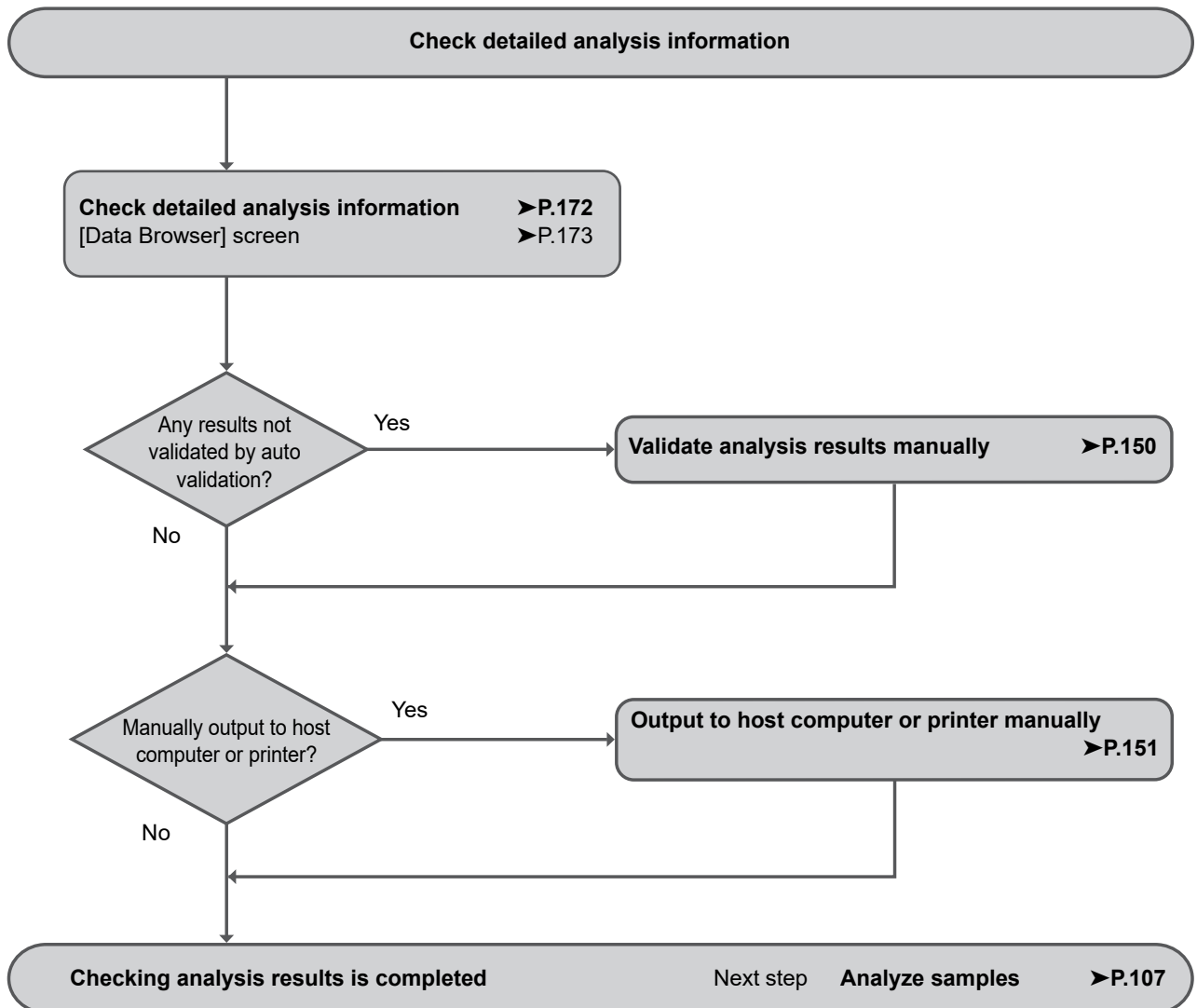
● List of filter items and conditions

Filter item	Selectable condition	Remarks
[Date]	[Today] [Yesterday] [Day before Yesterday] [Specify]	When [Specify] is selected, the dialog box below appears. Set the range. 
[Output]	[Not Output Host Computer] [Not Output Graphic Printer] [Not Output Ticket Printer]	—
[Discrete]	[CBC] [CBC+DIFF] [CBC+RET] [CBC+DIFF+RET]	On an instrument that does not have the RET analysis function, [CBC+RET] and [CBC+DIFF+RET] do not appear.
[Validation]	[Execute] [Not Execute]	—
[Reference Interval]	[Inside] [Outside]	—
[Measurement Mode]	[WB] [PD] [LW] [WB+PD+LW] [BF]	[BF] does not appear when the instrument does not have the body fluid analysis function. [LW] does not appear when the instrument cannot use [Low WBC] mode.
[Error]	[Error Occurred] [Error Did Not Occur]	—
[QC Sample]	[Displayed] [Not Displayed]	When set to [Not Displayed], QC analysis results (analysis results of sample numbers that start with [QC-]) are excluded.
[Order Type]	[Manual] [Initial] [Repeat] [Reflex] [Rerun]	—
[Judgment]	[Positive] [Negative]	—
[Patient ID]	Enter a patient ID. Up to 16 characters can be entered. Double-byte characters cannot be entered.	Displayed only if the logged on user has [Display and Modify Patient Info.] permission. For details on [Display and Modify Patient Info.] permission, see Chapter 7. (►P.217 "Chapter 7: 7.8.1 User information management (user registration)")
[Background Check]	[Displayed] [Not Displayed]	When set to [Not Displayed], the background check data is excluded.

Chapter 6 Checking Detailed Analysis Information (Data Browser)

6.1 Flow of checking detailed analysis results

The flow chart below shows the sequence followed to check detailed analysis results. The typical flow is shown in gray.



6.2 Checking detailed analysis information

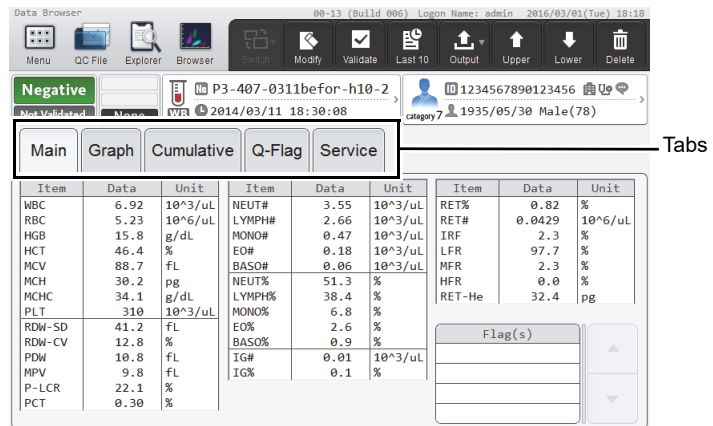
1 In the [Sample Explorer] screen, select the analysis results for which you want to check details.

2 Touch the [Browser] button on the toolbar.

The [Data Browser] screen appears.

For details, see the following.

(▶P.173 "6.3 [Data Browser] screen")



[Data Browser] screen

3 Touch tabs.

The screen of the selected tab appears.

Tab name	Displayed item	Refer to
[Main]	<ul style="list-style-type: none"> Analysis result numerical data IP message (flag information) 	▶P.180
[Graph]	<ul style="list-style-type: none"> Distribution Scattergram 	▶P.181
[Cumulative]*	Cumulative analysis results of patients	▶P.182
[Q-Flag]	Positive/Negative level bar graph of IP messages	▶P.184
[Service]	Service data	▶General Information, "Chapter 8: 8.1 Checking service data"

* This is not displayed in [Body Fluid] mode.



Note:

When the [Data Browser] icon in the [Menu] screen is touched, the analysis results displayed in the [Data Browser] screen changes according to the [Display] of the [Sample Explorer] screen.

- When set to [Last 10 Samples]
The latest analysis results appear.
- When set to other than [Last 10 Samples]
The analysis results selected in the [Sample Explorer] screen appear.

For details on [Display] in the [Sample Explorer] screen, see Chapter 5.

(▶P.167 "Chapter 5: 5.11.3 Changing the display method of the analysis result list (display settings)")

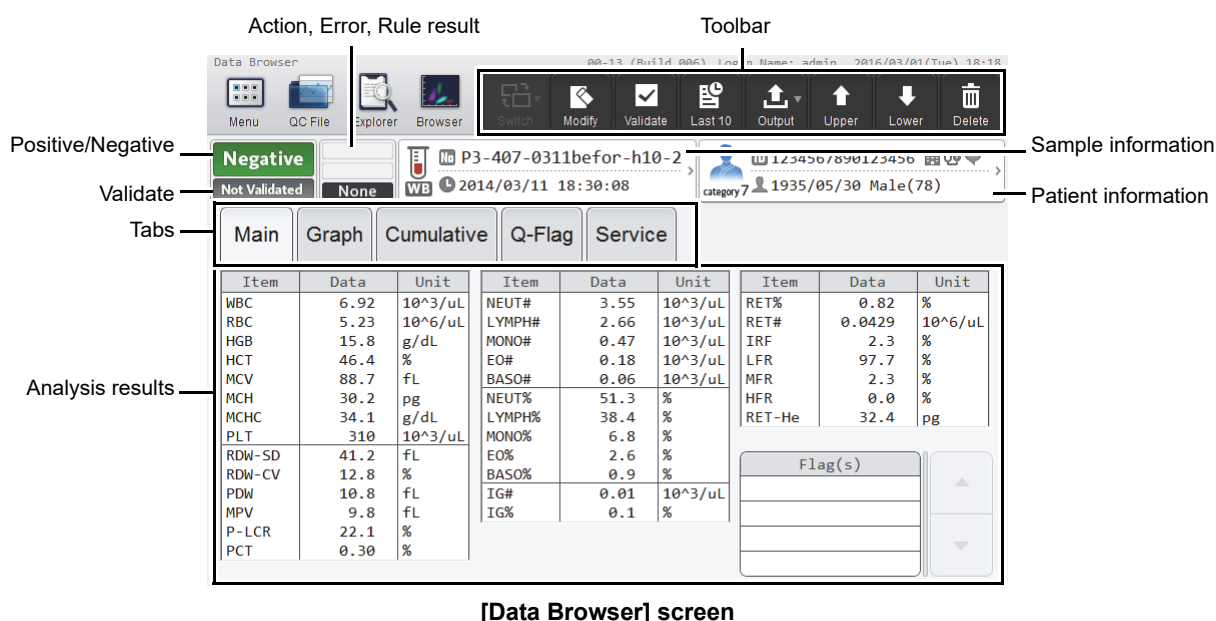
6.3 [Data Browser] screen

Touch the [Data Browser] icon in the [Menu] screen to display the [Data Browser] screen. You can also touch the [Browser] button on the toolbar.



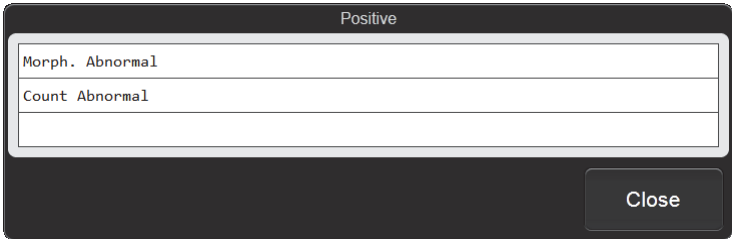
Information

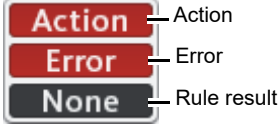
- IP messages are only intended for use in the clinical laboratory and are not for patient diagnosis. Flags notify the operator of the possibility of a specific sample abnormality that requires examination of the analysis results.
- Analysis results of research parameters are indicated by a gray background to distinguish them from report parameters. Analysis results of research parameters must not be used for the diagnosis of patients.




Toolbar	Displays the function buttons.
[Switch]	Touch to open a submenu that allows you to change the screen display method. The contents of the submenu vary depending on the screen of each tab. When the [Main] tab, or [Graph] tab is displayed: Cannot be used. When the [Cumulative] tab is displayed: [Numerical]: Numerical data is displayed as a time series. [Graph]: Time series broken-line graphs are displayed. [Scattergram/Distribution]: Time series scattergrams and distributions are displayed. When the [Service] tab is displayed: [RBC/PLT]: Displays the details of RBC/PLT data. [WDF]: Displays the details of WDF data. [RET]*: Displays the details of RET data. [HARDWARE]: Displays the details of HARDWARE data. [ADJUSTMENT]: Displays the details of ADJUSTMENT data.

* Does not appear when the instrument does not have the RET analysis function.

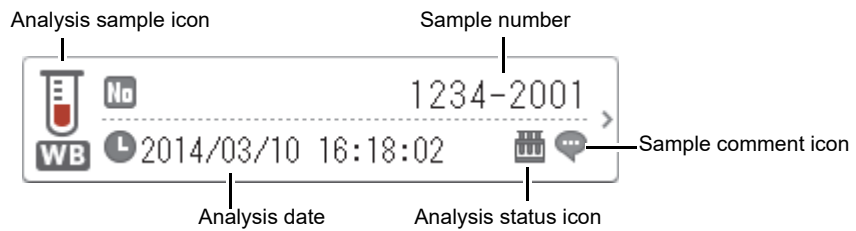
[Modify]	Use to modify the sample information in displayed analysis results. (►P.158 "Chapter 5: 5.9 Modifying sample information")												
[Validate]	Touch to validate the displayed analysis results. If already validated, this cancels the validation. (►P.150 "Chapter 5: 5.4 Validating analysis results")												
[Last 10]	Touch to display the most recent analysis results in the [Data Browser] screen. The display settings of the [Sample Explorer] changes to [Last 10 Samples].												
[Output]	Touch to open a submenu that allows you to output the displayed analysis results to the output destination shown in the submenu. (►P.151 "Chapter 5: 5.5 Outputting analysis results to host computer or printer") The items below appear in addition to the items in [Output] of the [Sample Explorer] screen. <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">[Cumulative Report]:</td> <td>Touch to output time series data to a graphic printer. This may not appear, depending on your system configuration. The logged on user must have the permissions below to use this function.</td> </tr> <tr> <td></td> <td> <ul style="list-style-type: none"> • [Display and Modify Patient Info.] • [Display and Output of Research Items] • [Output Results] </td> </tr> </table>	[Cumulative Report]:	Touch to output time series data to a graphic printer. This may not appear, depending on your system configuration. The logged on user must have the permissions below to use this function.		<ul style="list-style-type: none"> • [Display and Modify Patient Info.] • [Display and Output of Research Items] • [Output Results] 								
[Cumulative Report]:	Touch to output time series data to a graphic printer. This may not appear, depending on your system configuration. The logged on user must have the permissions below to use this function.												
	<ul style="list-style-type: none"> • [Display and Modify Patient Info.] • [Display and Output of Research Items] • [Output Results] 												
[Upper]	Touch to move to the previous analysis data.												
[Lower]	Touch to move to the next analysis data.												
[Delete]	Use to delete the displayed analysis results. (►P.160 "Chapter 5: 5.10 Deleting analysis results")												
Positive/Negative	Shows whether an analysis result is Positive or Negative. <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">[Positive]:</td> <td>Abnormal blood cell analysis value or cell morphology</td> </tr> <tr> <td style="padding-right: 10px;">[Negative]:</td> <td>No abnormalities in sample</td> </tr> <tr> <td style="padding-right: 10px;">Blank:</td> <td>Judgment not made</td> </tr> </table> <p>Touch [Positive] to display the [Positive] dialog box. This shows the reason for the Positive judgment.</p> <div style="text-align: center; margin: 10px 0;">  </div> <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">[Diff. Abnormal]:</td> <td>Abnormal blood cell differentiation value</td> </tr> <tr> <td style="padding-right: 10px;">[Morph. Abnormal]:</td> <td>Abnormal cell morphology</td> </tr> <tr> <td style="padding-right: 10px;">[Count Abnormal]:</td> <td>Abnormal blood cell count</td> </tr> </table>	[Positive]:	Abnormal blood cell analysis value or cell morphology	[Negative]:	No abnormalities in sample	Blank:	Judgment not made	[Diff. Abnormal]:	Abnormal blood cell differentiation value	[Morph. Abnormal]:	Abnormal cell morphology	[Count Abnormal]:	Abnormal blood cell count
[Positive]:	Abnormal blood cell analysis value or cell morphology												
[Negative]:	No abnormalities in sample												
Blank:	Judgment not made												
[Diff. Abnormal]:	Abnormal blood cell differentiation value												
[Morph. Abnormal]:	Abnormal cell morphology												
[Count Abnormal]:	Abnormal blood cell count												

Validate	<p>Displays the validation status of the analysis results.</p> <p>[Validated]: The sample has been validated.</p> <p>[Not Validated]: The sample has not been validated.</p> <p>Blank: No sample</p>
Action, Error, Rule result*	<p>Action, Error, and Rule judgments appear. Touch to open the [Action/Error] dialog box. (► P.178 "● [Action/Error] dialog box")</p> 
[Action]	<p>When there is an action message, the message appears. Blank if there is no message.</p>
[Error]	<p>Displayed when there is an analysis error. Blank if there is no error.</p>
Rule result	<p>One of the following will appear if there is a rule result.</p> <p>[Repeat]: Analysis must be repeated due to an error in the initial test.</p> <p>[Rerun]: Analysis must be repeated for the same parameters as in the initial test.</p> <p>[Reflex]: Due to the results of the initial test, analysis must be performed with additional parameters.</p> <p>[None]: No need to query the host or repeat analysis.</p> <p>Blank: No rule result.</p>

When there is a rule comment, the comment icon  appears on the right.



* The judgment results are only for use in the clinical laboratory. They are not intended for patient diagnosis.



Sample information Displays the sample information.







Touch to display the [Sample Info] dialog box.
 (▶P.178 "● [Sample Info] dialog box")

Analysis sample icon Indicates the type of analysis sample.

 : Normal sample


 : Diluted sample



 : Body fluid
 When body fluid analysis is performed without resetting [Analysis result is high], [BF] appears in white characters on a red background and body fluid icon appears darker.


 : Low white blood cell


Sample number Displays the sample number.

Analysis date Displays the dates and times when the analysis results were made available.

Analysis status icon Indicates the analysis status.

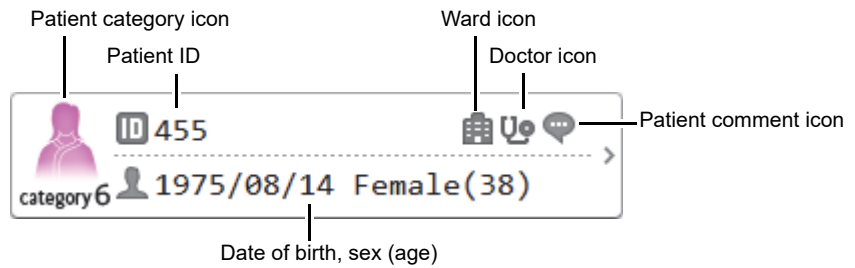
 : Displayed when the sample was analyzed in sampler analysis mode.*

 : Displayed when the sample was analyzed in open analysis mode.

Sample comment icon Displayed when there is a comment about the sample.

* XN-550 only.

Patient information Displays the patient information.



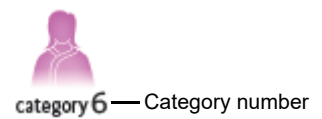
Touch to display the [Patient Information] dialog box.

(>P.179 "● [Patient Information] dialog box")

If the logged on user does not have [Display and Modify Patient Info.] permission, only the patient category icon appears.

Patient category icon

A different icon appears for each sex.
The category number of the patient is below the icon. If there is no category, a category number does not appear.



Patient ID

Displays the ID of the patient.

Ward icon

Displayed when a ward is set.

Doctor icon

Displayed when a doctor is set.

Patient comment icon

Displayed when there is a comment about the patient.

Tabs

Touch to change the screen.

Analysis results

Displays the detailed analysis results.

The display method of analysis results differs depending on the selected tab.

For details, see the following.

[Main]: >P.180 "6.3.1 [Main] tab"

[Graph]: >P.181 "6.3.2 [Graph] tab"

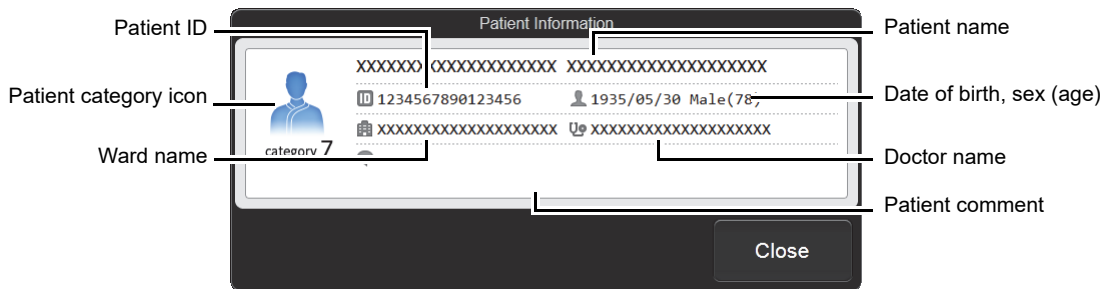
[Cumulative]: >P.182 "6.3.3 [Cumulative] tab"

[Q-Flag]: >P.184 "6.3.4 [Q-Flag] tab"

[Service]: >General Information, "Chapter 8: 8.1 Checking service data"

● **[Patient Information] dialog box**

Touch the patient information display to open this dialog box.



[Patient Information] dialog box

Patient category icon	A different icon appears for each sex. The category number of the patient is below the icon. If there is no corresponding category, no number is displayed.
Patient name	Displays the name of the patient.
Patient ID	Displays the ID of the patient.
Date of birth Sex (age)	Displays the patient's date of birth, sex, and age.
Ward name	Displays the patient's ward name or the name of the clinical service.
Doctor name	Displays the name of the doctor assigned to the patient.
Patient comment	Displays comments about the patient.

If the logged on user does not have [Display and Modify Patient Info.] permission, only the patient category icon appears.

6.3.1 [Main] tab

The numerical values of analysis results and IP messages (flag information) appear.

Main			Graph			Cumulative			Q-Flag			Service		
Item	Data	Unit	Item	Data	Unit	Item	Data	Unit	Item	Data	Unit	Item	Data	Unit
WBC	6.92	10 ³ /uL	NEUT#	3.55	10 ³ /uL	RET%	0.82	%	RET#	0.0429	10 ⁶ /uL	IRF	2.3	%
RBC	5.23	10 ⁶ /uL	LYMPH#	2.66	10 ³ /uL	MFR	2.3	%	LFR	97.7	%	HFR	0.0	%
HGB	15.8	g/dL	MONO#	0.47	10 ³ /uL	RET-He	32.4	pg						
HCT	46.4	%	EO#	0.18	10 ³ /uL									
MCV	88.7	fL	BASO#	0.06	10 ³ /uL									
MCH	30.2	pg	NEUT%	51.3	%									
MCHC	34.1	g/dL	LYMPH%	38.4	%									
PLT	310	10 ³ /uL	MONO%	6.8	%									
RDW-SD	41.2	fL	EO%	2.6	%									
RDW-CV	12.8	%	BASO%	0.9	%									
PDW	10.8	fL	IG#	0.01	10 ³ /uL									
MPV	9.8	fL												
P-LCR	22.1	%												
PCT	0.30	%												

[Data Browser] screen ([Main] tab)
 Example: [Whole Blood]/[Low WBC]^{*1}/[Pre-Dilution] mode

Main			Graph			Cumulative			Q-Flag			Service		
Item	Data	Unit										Flag(s)		
WBC-BF	0.302	10 ³ /uL												
RBC-BF	0.076	10 ⁶ /uL												
MN#	0.132	10 ³ /uL												
PMN#	0.170	10 ³ /uL												
MN%	43.7	%												
PMN%	56.3	%												
TC-BF#	0.302	10 ³ /uL												

[Data Browser] screen ([Main] tab)
 Example: [Body Fluid] mode^{*2}

[Item] ^{*3}	Displays the analysis items.
[Data] ^{*3}	The numerical data for each item appear. If a value is abnormal, a mark will appear after the value.
[Unit] ^{*3}	Displays the units of each item.
[Flag(s)]	When there is an IP message, the flag appears. The flags are displayed in the order of abnormal messages, then suspect messages.

*1 The availability of [Low WBC] mode depends on your system configuration.

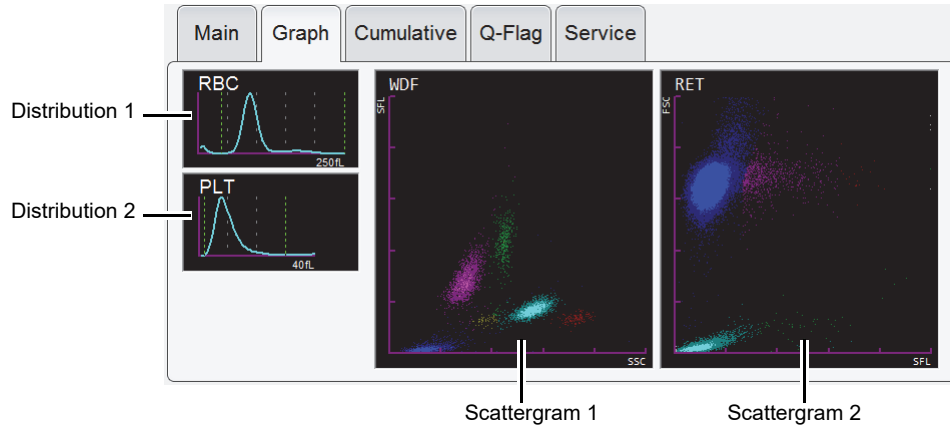
*2 The availability of [Body Fluid] mode depends on your system configuration.

*3 Some items may not appear, depending on your system configuration. Research parameters appear on a gray background.

6.3.2 [Graph] tab

This screen shows distributions and scattergrams (2D distributions).

If the instrument does not have the RET channel, an IP message is displayed.



[Data Browser] screen ([Graph] tab)

RET channel	Discrete, analysis mode	Distribution 1	Distribution 2	Scattergram 1	Scattergram 2
Yes	CBC	RBC	PLT	WDF-CBC	-
	CBC+DIFF	RBC	PLT	WDF	-
	CBC+RET ^{*1}	RBC	PLT	WDF-CBC	RET
	CBC+DIFF+RET ^{*1}	RBC	PLT	WDF	RET
None	CBC	RBC	PLT	WDF-CBC	IP message
	CBC+DIFF	RBC	PLT	WDF	IP message
-	[Body Fluid] mode ^{*2}	RBC	-	WDF	WDF (EXT)

*1 The availability of RET analysis function depends on your system configuration.

*2 The availability of [Body Fluid] mode depends on your system configuration.

6.3.3 [Cumulative] tab

The analysis results selected in the [Sample Explorer] screen and the sample results of the patient's prior 4 tests (total of 5 tests) are restored and displayed as data changes over time.

The [Cumulative] tab is displayed only if the logged on user has [Display and Modify Patient Info.] permission.

For details on [Display and Modify Patient Info.] permission, see Chapter 7.

(►P.217 "Chapter 7: 7.8.1 User information management (user registration)")



Information

The analysis results below are not shown.

- Body fluid analysis
- Analysis error
- [Patient ID] is not registered

If there are multiple analysis results with the same reception date, only the analysis results of the sample with the most recent analysis date and time are displayed.

There are 3 methods for displaying the [Cumulative] tab. The method can be changed in the submenu of the [Switch] button on the toolbar.

[Numerical]	Touch to display the numerical data over time. (►P.182 "● Cumulative numerical display")
[Graph]	Touch to display time series broken-line graphs. (►P.183 "● Cumulative graph display")
[Scattergram/ Distribution]	Touch to display time series scattergrams and distributions. (►P.183 "● Cumulative scattergram display")

● Cumulative numerical display

The analysis results of 5 past analyses, going backward in time from the selected analysis results, are displayed as a numerical list.

The screenshot shows the Data Browser screen with the Cumulative tab selected. The table displays analysis results for five different dates, with the most recent date on the right. The analysis items are listed on the left, and the results are numerical values. The table is scrollable, as indicated by the up and down arrows on the right side.

	2014/02/27	2014/03/11	2014/05/28	2014/06/05	2014/06/05
Date					
Time	15:00:37	18:30:09	17:01:11	15:07:59	15:14:31
WBC	6.93	6.92	6.53	6.53	6.71
RBC	4.18	5.23	3.98	3.98	3.99
HGB	11.8	15.8	12.7	12.7	12.8
HCT	40.9	46.4	34.1	34.1	34.0
MCV	97.8	88.7	85.7	85.7	85.2
MCH	28.2	30.2	31.9	31.9	32.1
MCHC	28.9	34.1	37.2	37.2	37.6
PLT	236	310	222	222	230

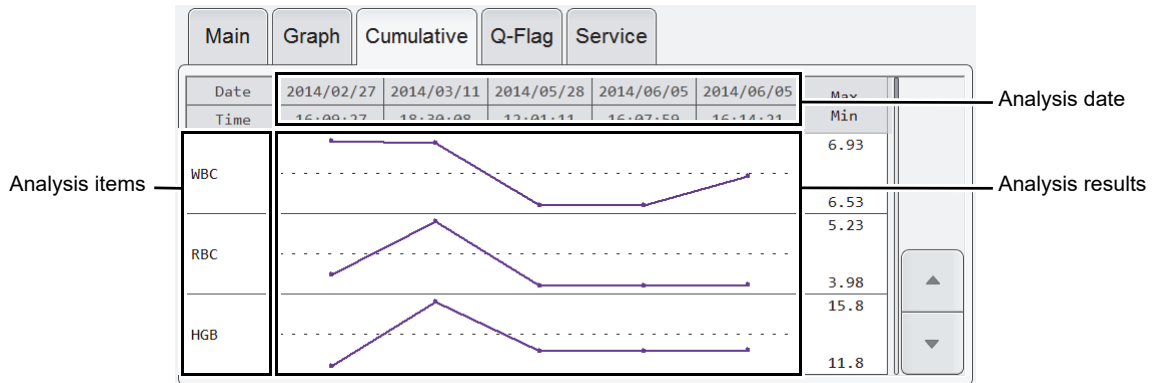
[Data Browser] screen ([Cumulative] tab - numerical display)

Analysis date	Displays the dates and times when the analysis results were made available.
Analysis items*	Displays the analysis items.
Analysis results*	Displays the analysis item data as numerical values.

* Research parameters are displayed on a gray background.

● Cumulative graph display

The analysis results of 5 past analyses, going backward in time from the selected analysis results, are displayed as a broken-line graphs.



[Data Browser] screen ([Cumulative] tab - graph display)

Analysis date	Displays the dates and times when the analysis results were made available.
Analysis items*	Displays the analysis items.
Analysis results*	Displays the analysis item data as broken-line graphs. The right side of each graph shows the maximum value and minimum value of the past 5 analysis results.

* Research parameters are displayed on a gray background.

● Cumulative scattergram display

The analysis results of 5 past analyses, going backward in time from the selected analysis results, are displayed as scattergrams and distributions.

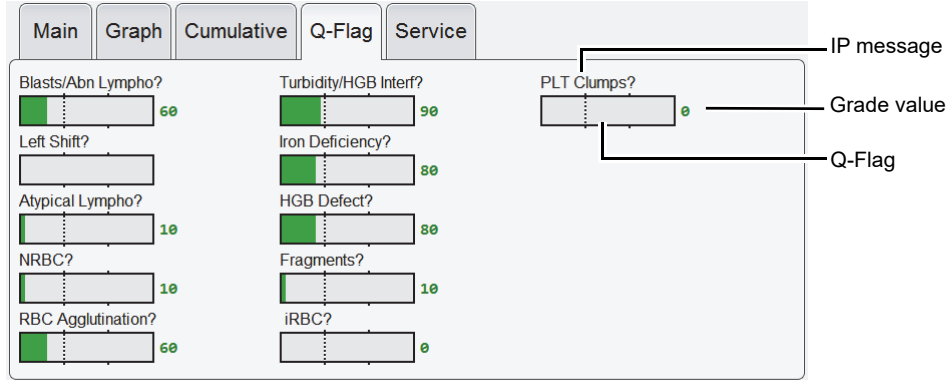


[Data Browser] screen ([Cumulative] tab - scattergram display)


Analysis date	Displays the dates and times when the analysis results were made available.
Analysis items	Displays the analysis items.
Analysis results	Displays the analysis results of items as scattergrams and distributions.

6.3.4 [Q-Flag] tab

The Positive/Negative level of an IP message for an analysis result is shown as a bar graph.



[Data Browser] screen ([Q-Flag] tab)

IP message	<p>Suspect IP messages appear.</p> <p>[Blasts/Abn Lympho?]: Possibility that blasts are present/Possibility of abnormal lymphocytes</p> <p>[Left Shift?]: Possibility of left shift</p> <p>[Atypical Lympho?]: Possibility of atypical lymphocytes</p> <p>[NRBC?]: Possibility of nucleated red blood cells</p> <p>[RBC Agglutination?]: Possibility of RBC agglutination</p> <p>[Turbidity/HGB Interf?]: Possibility of effect on HGB by chylemia</p> <p>[Iron Deficiency?]: Possibility of iron deficiency</p> <p>[HGB Defect?]: Possibility of HGB abnormality</p> <p>[Fragments?]: Possibility of fragmented red blood cells</p> <p>[iRBC?]*: Possibility of erythrocyte inclusions</p> <p>[PLT Clumps?]: Possibility of PLT clumps</p> <p>For details on IP message judgment conditions and judgment methods, see "Troubleshooting".</p> <p>(▶Troubleshooting, "Chapter 5: 5.3 IP message judgment conditions and judgment methods")</p>
Q-Flag	<p>A Negative result appears in green, and a Positive result appears in red.</p>  <p>Trigger level Positive if on or to right of this line Negative if to left of this line</p>
Grade value	<p>This shows the Q-Flag result converted to a numerical value from 0 to 300 in increments of 10. When it is greater than or equal to the trigger level (threshold value for Positive), the result is Positive.</p> <p>In addition, the following may appear in the judgment value position. Nothing is displayed on the bar graph.</p> <p>[Discrete]: The parameter used for judgment has not been analyzed (appears in gray).</p> <p>[Error]: Judgment not possible.</p> <p>Blank: Prerequisite for judgment not met or suspect judgment not performed due to blank data or otherwise.</p>

* Only when the iRBC flag license is registered.

Chapter 7 Instrument Settings

7.1 Settings by objective

The table below shows the functions that can be set on the instrument.

Not all users have permission to change settings.

Only a user who has [All Administrators] or [Modify Settings] permission can change the settings of the functions. For details on user permissions, see the following.

(▶P.217 "7.8.1 User information management (user registration)")

Desired action		Setting procedure	
User permissions	Set operation permissions separately for each user.	Set in the [User Management] dialog box.	▶P.217
	Set a logged on user automatically when the instrument is started.		
	Increase password security.	Set in the [Password Management] dialog box.	▶P.231
Screen display	Change the display language.	Change in the [System Language] dialog box.	▶P.196
	Change the date format.	Change in the [General Date Format] dialog box.	▶P.196
	Change the units.	Change in the [Unit Setting] dialog box.	▶P.222
	Change the instrument name.	Change in the [Instrument Name Setting] dialog box.	▶P.197
	Change the facility name.	Change in the [Facility Information] dialog box.	▶P.197
	Have the screen lock when not used for a set length of time.	Set in the [Security Settings] dialog box.	▶P.234
Alarm sound	<ul style="list-style-type: none"> Change the alarm sound for errors. Turn OFF the alarm sound for errors. Change the number of times the alarm sounds for an error. 	Change in the [Alarm Setting] dialog box.	▶P.223
Quality control (QC)	Perform QC analysis.	Set in the [QC Setting] dialog box.	▶P.212
	Issue a warning when QC is not performed for a certain interval of time.	Set in the [QC Alarm Setting] dialog box.	▶P.213
	Preset comments that are entered for QC analysis results.	Set in the [QC Chart Fixed Comment] dialog box.	▶P.214
	<ul style="list-style-type: none"> Output QC analysis results automatically to a host computer or graphic printer. Set the conditions for auto output. 	Set in the [QC Chart Data Auto Output Setting] dialog box.	▶P.215

Desired action		Setting procedure		
Analysis	General	Analyze the blood from a dialysis patient.	Set [Aspiration Sensor] to OFF.	►P.233
		Set the criteria for abnormal judgments.	Set in the [Patient Category Settings] dialog box.	►P.204
			Set in the [Setting Reference Interval] dialog box.	►P.205
		Change the conditions for flag judgment.	Change in the [WBC Abnormal Flags] dialog box.	►P.207
			Change in the [RBC Abnormal Flags] dialog box.	►P.208
			Change in the [PLT Abnormal Flags] dialog box.	►P.209
			Change in the [WBC Abnormal Flag (Body Fluid Analysis)] dialog box.	►P.210
		Change the upper and lower limit values for analysis parameters.	Change in the [Critical Value Setting] dialog box.	►P.206
	Compare the most recent analysis data of a patient with previous data to determine if there are any abnormal changes.	Turn ON delta check.	►P.229	
	<ul style="list-style-type: none"> Validate the analysis results automatically. Set the conditions for auto validate. 	Set in the [Auto Validate Conditions] dialog box.	►P.224	
	Sampler analysis (XN-550)	Perform repeat analysis automatically (repeating the first analysis).	Set [Repeat] ON/OFF.	►P.230
			Configure rule settings.	►P.249
		<ul style="list-style-type: none"> Perform repeat analysis automatically (comparing the first analysis result and the second analysis result). Perform repeat analysis automatically (testing of additional parameters due to the results of the first analysis). 	Set [Rerun/Reflex] ON/OFF.	►P.230
			Configure rule settings.	►P.249
	Change the conditions for stopping analysis. Selectable items: <ul style="list-style-type: none"> Barcode reading error Analysis value error Aspiration error Quality control error Reagent expiration 	Change in the [Sampler Stop Conditions] dialog box.	►P.237	
Manual analysis	Automatically assign sample numbers.	Enable auto increment of sample numbers.	►P.224	

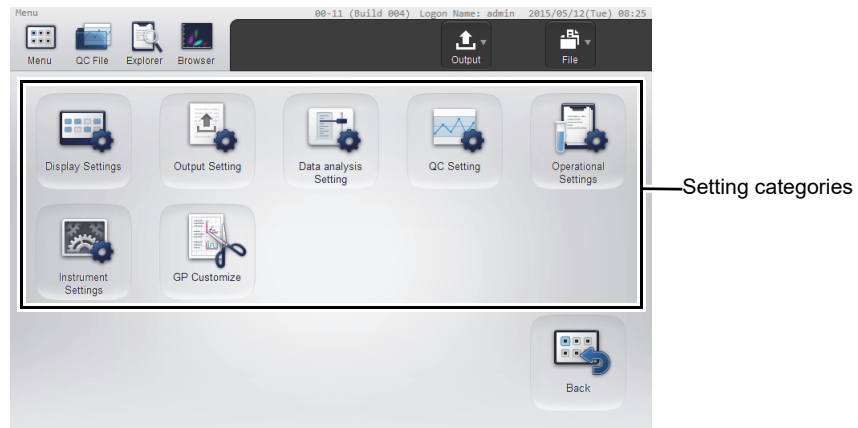
Desired action			Setting procedure	
Peripheral devices	General	<ul style="list-style-type: none"> Automatically output validated samples to a host computer or graphic printer. Set the conditions for auto output. 	Set in the [Auto Output Conditions] dialog box.	►P.226
	Host computer	Connect a host computer.	Enable the host computer connection.	►P.200
		Acquire analysis orders from the host computer.	Set in the [Analysis Ordering] dialog box.	►P.228
	Printer	Set the print format used by the graphic printer (GP).	Set in the [GP Customize] screen.	►P.238
Backup	Settings	<ul style="list-style-type: none"> Print settings. Back up or restore settings. Initialize settings. 	Select from the toolbar in the [Setting] menu screen.	►P.190
	Analysis results	<ul style="list-style-type: none"> Output analysis results to a file in CSV format. Output a scattergram or distribution to a file in PNG or BMP format. 	Set in the [CSV Output Setting] dialog box.	►P.202
		Include patient information when analysis results are output in CSV format or backed up.	Set in the [Security Settings] dialog box.	►P.234
When the host computer is down	<ul style="list-style-type: none"> Stop using barcodes (XN-550). Change the type of barcode used (XN-550). 	Set in the [Barcode Reader Connection] dialog box.	►P.235	
	<ul style="list-style-type: none"> Disconnect from the host computer. Change the host computer that the instrument connects to. 	Set in the [Host Computer Connection Settings] dialog box.	►P.200	

7.2 Changing instrument settings

Instrument settings are configured in the various setting screens.
Follow the steps below to change settings.

1 Touch the [Setting] icon in the [Menu] screen.

The [Setting] menu screen appears.



[Setting] menu screen

Setting categories	Touch an icon to display the setting dialog box of the category.
---------------------------	------------------------------------------------------------------

[Back]	Touch to return to the [Menu] screen.
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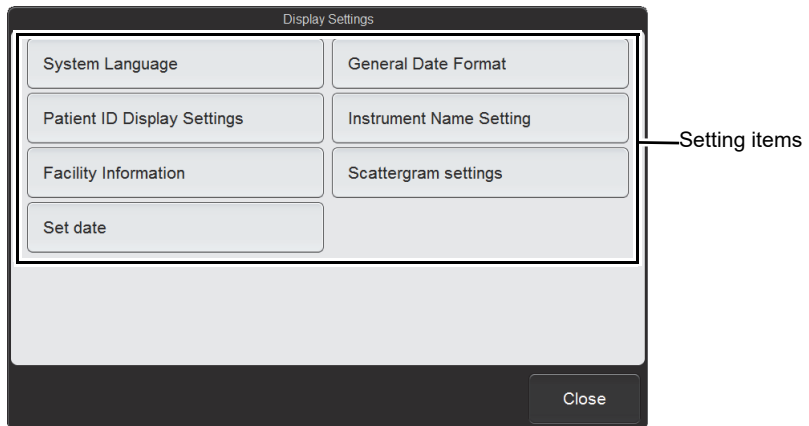


Note:

Settings cannot be configured while the instrument is in operation. Analysis cannot be started while settings are being configured.

2 Touch the icon of the desired category.

The setting dialog box of the touched category appears.



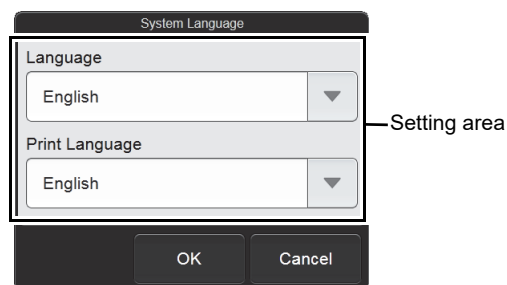
Example: [Display Settings] dialog box

Setting items	Touch a button to display the setting screen.
[Close]	The dialog box closes.

3 Touch the button of the item you want to set.

The setting dialog box of the touched item appears.

4 Change the settings.



Example: [System Language] dialog box

Setting area	Execute settings. A new dialog box may appear when you touch the button of some items.
[OK]	Touch to save your setting changes and close the dialog box.
[Cancel]	The dialog box closes without saving your setting changes.

5 Touch [OK].

Your setting changes are saved and the dialog box closes.

7.3 Managing settings

When the [Setting] menu screen appears, the [Output] button and [File] button appear on the toolbar. When either button is touched, the submenu below of that button appears.

The settings are managed from these submenus.

[Output]

[Ledger (LP)]	Touch to print the settings to the list printer. (▶P.190 "7.3.1 Printing settings")
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[File]

[Backup ALL Settings Files]	Touch to back up the settings files. (▶P.191 "7.3.2 Saving settings (backup)")
[Restore ALL Settings Files]*	Touch to change the current settings to the settings in the backup settings files. (▶P.192 "7.3.3 Restoring backed up settings (restore)")
[Initialize ALL Settings Files]*	Touch to initialize the settings to the factory settings. (▶P.194 "7.3.4 Initializing settings")

* Only the [admin] (instrument administrator) can use this setting.

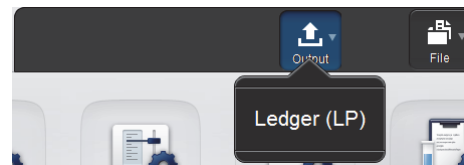
7.3.1 Printing settings

The print format is ledger. The settings are printed in 2 columns, with the first column showing the setting name and the second column showing the settings.

Follow the steps below to print settings.

1 Touch the [Output] button on the toolbar in the [Setting] menu screen.

The submenu on the right appears.



2 Touch the [Ledger (LP)] button.

The current settings are printed to the list printer.

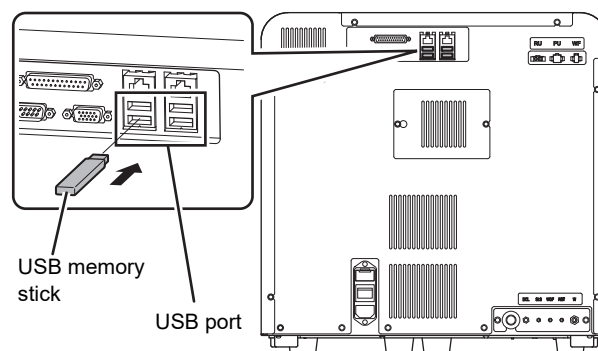
7.3.2 Saving settings (backup)

Settings can be backed up to a USB memory stick.
Follow the steps below to back up the settings files.

1 Insert the USB memory stick.

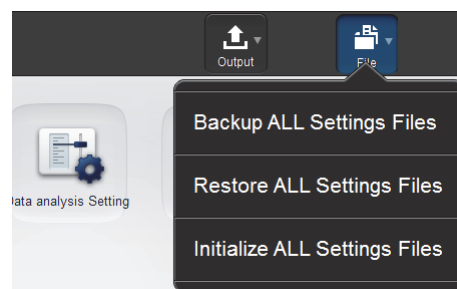
Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



2 Touch the [File] button on the toolbar in the [Setting] menu screen.

The submenu on the right appears.



3 Touch [Backup ALL Settings Files].

The backup starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the backup is complete.

4 Remove the USB memory stick.

● Backup directory and file name

When backup is executed, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

[Instrument ID][Software version][Date saved_Time saved].ini

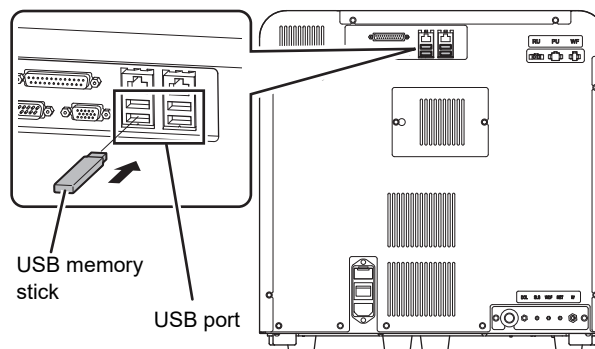
* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

7.3.3 Restoring backed up settings (restore)

The current settings can be changed to the settings in the backed up settings files.
Follow the steps below to restore the backed up settings.

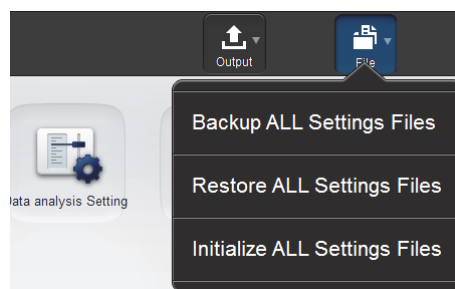
1 Insert the USB memory stick that contains the settings file.

Insert the USB memory stick into a free USB port on the back of the instrument.
A USB memory stick with a password lock function cannot be used.



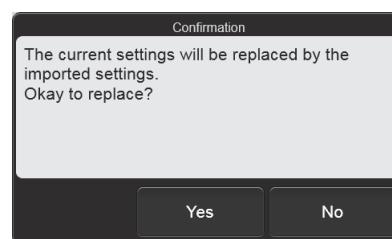
2 Touch the [File] button on the toolbar in the [Setting] menu screen.

The submenu on the right appears.



3 Touch [Restore ALL Settings Files].

The [Confirmation] dialog box appears.



[Confirmation] dialog box

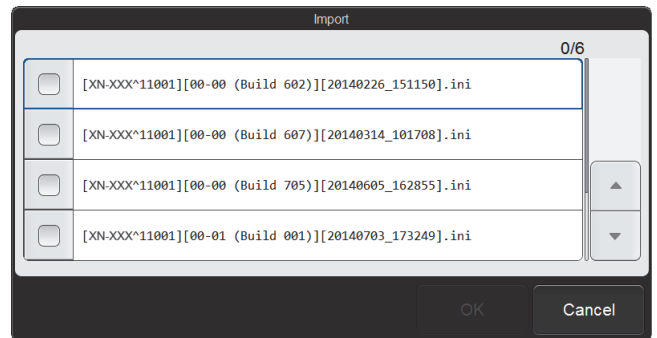
4 Touch [Yes].

If there is only one setting file in the USB memory stick, the restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the restore is complete.

● When the [Import] dialog box appears

When the USB memory stick contains multiple settings files, the [Import] dialog box appears.



[Import] dialog box

Follow the steps below to select and restore backup files.

1 Select the checkboxes of the files you want to restore.

Files with checkmarks will be restored.

Each time you touch the checkbox, the checkbox is selected or unselected.

2 Touch [OK].

The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the restore is complete.

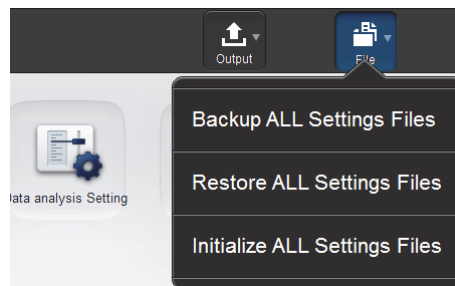
5 Remove the USB memory stick.

7.3.4 Initializing settings

All settings can be initialized to the factory settings.
Follow the steps below to initialize settings.

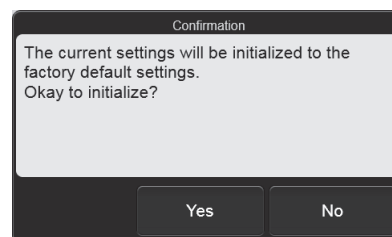
1 Touch the [File] button on the toolbar in the [Setting] menu screen.

The submenu on the right appears.



2 Touch [Initialize ALL Settings Files].

The dialog box on the right appears.

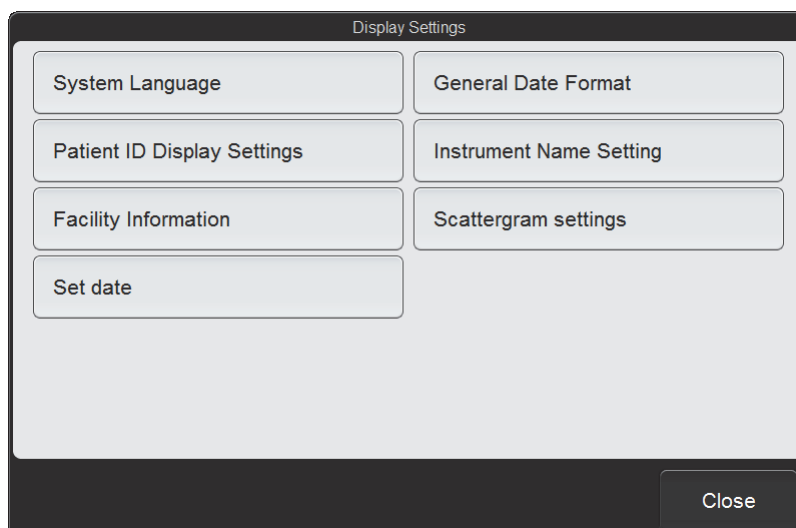


3 Touch [Yes].

The settings are initialized.

7.4 Display settings

To display the [Display Settings] dialog box, touch the [Display Settings] icon in the [Setting] menu screen.



[Display Settings] dialog box

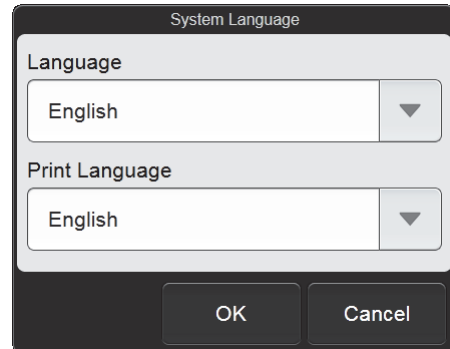
Touch the buttons to display screens for the settings below.

[System Language]	Touch to set the language that appears on the screen and the language used for printing. (▶P.196 "7.4.1 Changing the display language (system language)")
[General Date Format]	Touch to set the format of the date that is displayed and printed. (▶P.196 "7.4.2 Date format settings")
[Patient ID Display Settings]	Touch to set how the patient ID is displayed. (▶P.197 "7.4.3 Patient ID display settings")
[Instrument Name Setting]	Touch to set the instrument name. (▶P.197 "7.4.4 Instrument name settings")
[Facility Information]	Touch to set the name of the facility that is using the system. (▶P.197 "7.4.5 Facility information settings")
[Scattergram settings]	Touch to set the background color of scattergrams. (▶P.198 "7.4.6 Scattergram settings")
[Set date]	Touch to set the date and time of the system. (▶P.198 "7.4.7 Date and time settings")
[Close]	The dialog box closes.

7.4.1 Changing the display language (system language)

Touch [System Language] in the [Display Settings] dialog box.

[Language]	The language that appears on the screen can be changed. Select from [English], [German], [French], [Italian], [Spanish], [Greek], [Russian], [Korean], [Portuguese], [Brazilian Portuguese], [Chinese], [Traditional Chinese], [Indonesian], and [Turkish].
[Print Language]	The language used for printing can be changed. Languages that can be selected are the same as in [Language].



[System Language] dialog box



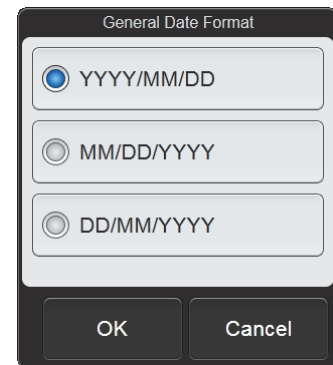
Note:

Changed settings will be applied the next time startup or logon is performed.

7.4.2 Date format settings

Touch [General Date Format] in the [Display Settings] dialog box.

[General Date Format]	The date format shown on the screen and used for printing can be changed. Select from the following. [YYYY/MM/DD]: Year 4 digits/Month 2 digits/ Day 2 digits [MM/DD/YYYY]: Month 2 digits/Day 2 digits/ Year 4 digits [DD/MM/YYYY]: Day 2 digits/Month 2 digits/ Year 4 digits
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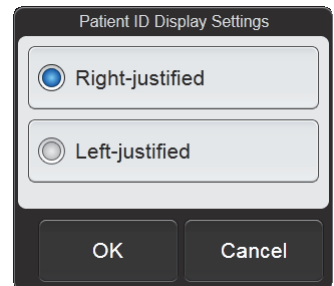


[General Date Format] dialog box

7.4.3 Patient ID display settings

Touch [Patient ID Display Settings] in the [Display Settings] dialog box.

[Patient ID Display Settings]	The way of displaying the patient ID can be changed. Select from [Right-justified] or [Left-justified].
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[Patient ID Display Settings] dialog box



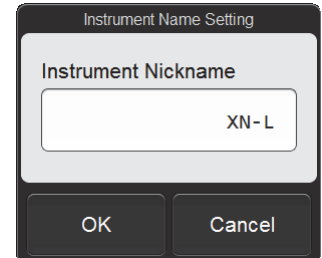
Note:

The patient ID displayed in the patient information area is always left-justified, regardless of the settings.

7.4.4 Instrument name settings

Touch [Instrument Name Setting] in the [Display Settings] dialog box.

[Instrument Nickname]	The instrument name can be changed. The instrument name is used in output to the host computer and in printing. Up to 11 characters can be entered.
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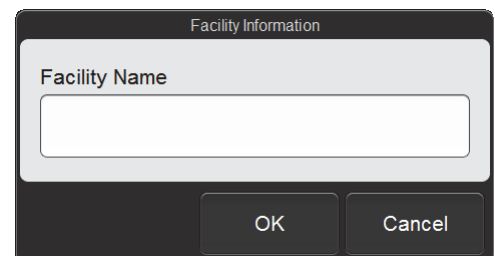


[Instrument Name Setting] dialog box

7.4.5 Facility information settings

Touch [Facility Information] in the [Display Settings] dialog box.

[Facility Name]	The name of the facility that is using the system can be changed. The facility name is used in printing. Up to 32 characters can be entered.
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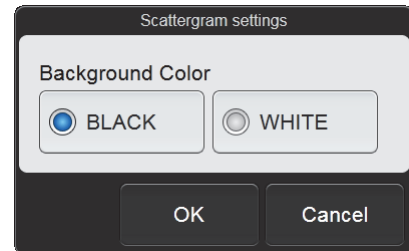


[Facility Information] dialog box

7.4.6 Scattergram settings

Touch [Scattergram settings] in the [Display Settings] dialog box.

[Background Color]	The background color of scattergrams can be changed. Select from [BLACK] or [WHITE].
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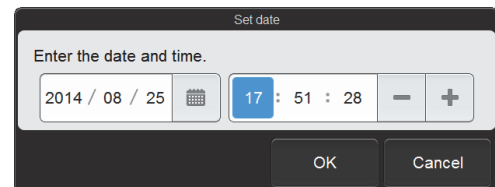


[Scattergram settings] dialog box

7.4.7 Date and time settings

Touch [Set date] in the [Display Settings] dialog box.

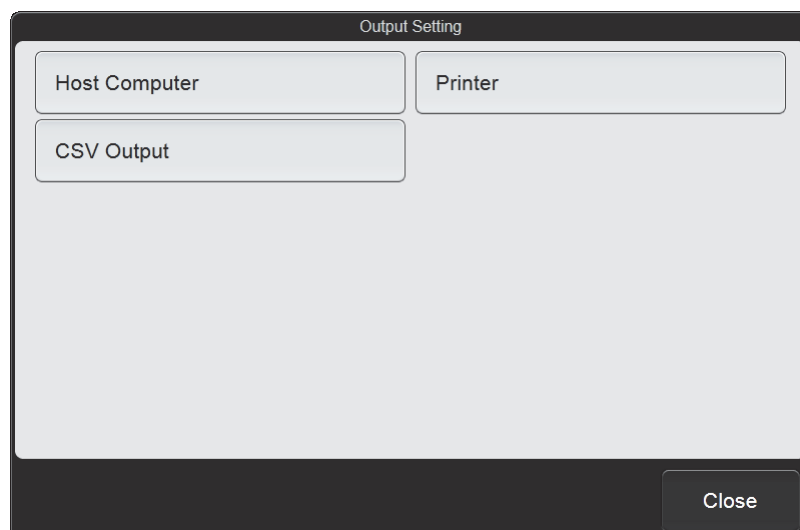
Date	The date of system can be set.
Time	The time of system can be set. Touch [-] to decrease the value. Touch [+] to increase the value.



[Set date] dialog box

7.5 Output settings

To display the [Output Setting] dialog box, touch the [Output Setting] icon in the [Setting] menu screen.



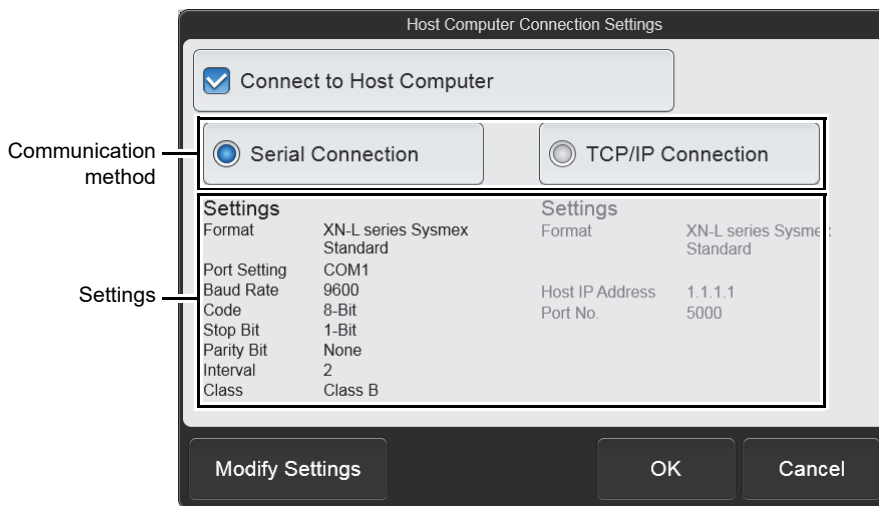
[Output Setting] dialog box

Touch the buttons to display screens for the settings below.

[Host Computer]	Set whether or not the instrument is connected to the host computer. If connected, set the communication method. (▶ P.200 "7.5.1 Host computer connection")
[Printer]	Set whether or not the instrument is connected to a printer. (▶ P.202 "7.5.2 Printer connection")
[CSV Output]	Specify whether image data is output when analysis results are output in CSV format. If output, set the output format and background color. (▶ P.202 "7.5.3 CSV output settings")
[Close]	The dialog box closes.

7.5.1 Host computer connection

Touch [Host Computer] in the [Output Setting] dialog box.

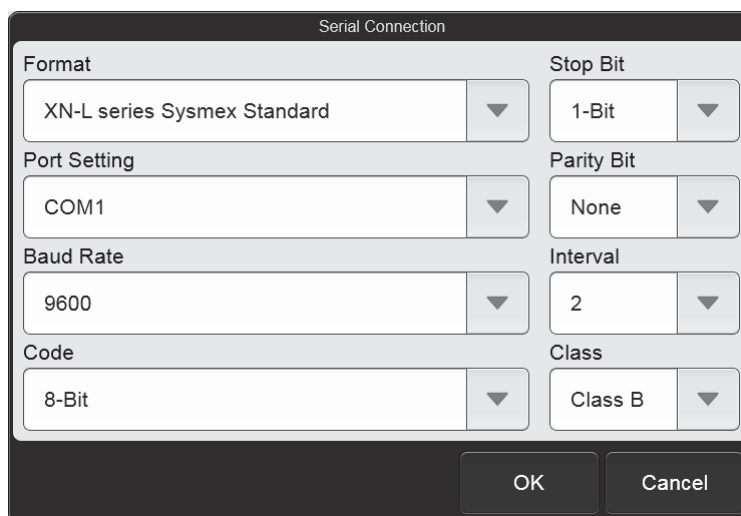


[Host Computer Connection Settings] dialog box

[Connect to Host Computer]	Select this checkbox to enable connection to the host computer. This must be selected to configure connection settings.
Communication method	Select [Serial Connection] or [TCP/IP Connection] for the method of communication with the host computer.
Settings	Displays the detailed settings for the selected communication method.
[Modify Settings]	Use to configure detailed settings for the selected communication method.

● Advanced serial connection settings

Touch [Modify Settings] after [Serial Connection] has been selected to display the [Serial Connection] dialog box.



[Serial Connection] dialog box

[Format]	Select [XN-L series Sysmex Standard] or [XN-L series ASTM] for the communication format*. When [XN-L series ASTM] is selected, the class cannot be selected.
[Port Setting]	Select the port used for the connection.
[Baud Rate]	Select the transmission speed.
[Code]	Select the data bit length.
[Stop Bit]	Select the stop bit length.
[Parity Bit]	Select the parity check method.
[Interval]	Select the transmission interval.
[Class]	Select the transmission method.

* To use a format other than the above, service settings are required.

● Advanced TCP/IP connection settings

Touch [Modify Settings] after [TCP/IP Connection] has been selected to display the [TCP/IP Connection] dialog box.

[TCP/IP Connection] dialog box

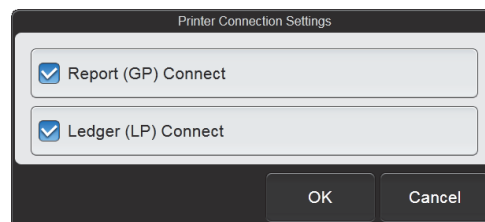
[Format]	Select [XN-L series Sysmex Standard] or [XN-L series ASTM] for the communication format*.
[Host IP Address]	Set the IP address of the host computer.
[Port No.]	Set the port number of the host computer. Touch [-] to decrease the value. Touch [+] to increase the value.

* To use a format other than the above, service settings are required.

7.5.2 Printer connection

Touch [Printer] in the [Output Setting] dialog box.

[Report (GP) Connect]	Select this checkbox to enable connection to a graphic printer.
[Ledger (LP) Connect]	Select this checkbox to enable connection to a list printer.

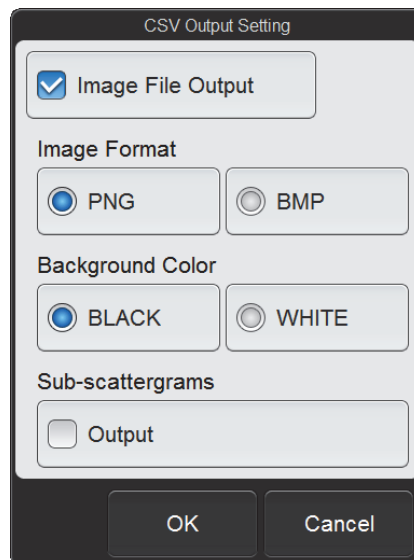


[Printer Connection Settings] dialog box

7.5.3 CSV output settings

Touch [CSV Output] in the [Output Setting] dialog box.

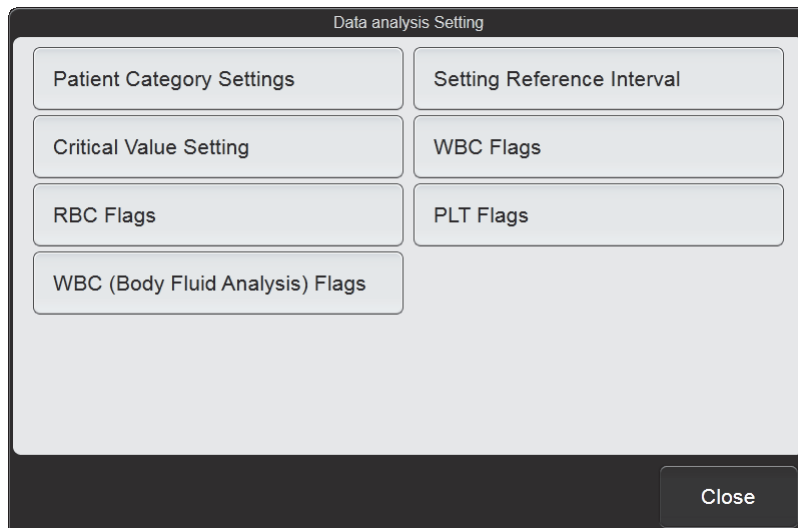
[Image File Output]	Select this checkbox to have image data output when data is saved in CSV format.
[Image Format]	Select [PNG] or [BMP] for the image data format.
[Background Color]	Select [BLACK] or [WHITE] for the image data background color.
[Sub-scattergrams]	Select this checkbox to have sub-scattergram output when data is saved in CSV format.



[CSV Output Setting] dialog box

7.6 Data analysis settings

To display the [Data analysis Setting] dialog box, touch the [Data analysis Setting] icon in the [Setting] menu screen.



[Data analysis Setting] dialog box

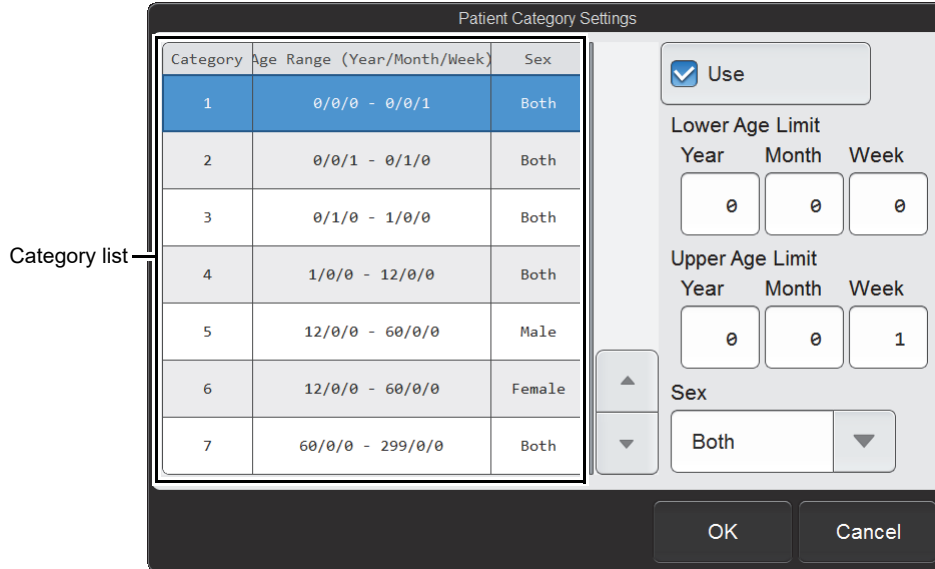
Touch the buttons to display screens for the settings below.

[Patient Category Settings]	Set the patient category (category by age or sex). (▶P.204 "7.6.1 Patient category settings")
[Setting Reference Interval]	Set the reference interval for each analysis parameter of each patient category. (▶P.205 "7.6.2 Reference interval settings")
[Critical Value Setting]	Set the critical values (upper and lower limit values) for each analysis parameter. (▶P.206 "7.6.3 Critical value settings")
[WBC Flags]	Set whether WBC abnormal flags (WBC abnormal IP messages) are displayed and the judgment value. (▶P.207 "7.6.4 WBC abnormal flag settings")
[RBC Flags]	Set whether RBC abnormal flags (RBC abnormal IP messages) are displayed and the judgment value. (▶P.208 "7.6.5 RBC abnormal flag settings")
[PLT Flags]	Set whether PLT abnormal flags (PLT abnormal IP messages) are displayed and the judgment value. (▶P.209 "7.6.6 PLT abnormal flag settings")
[WBC (Body Fluid Analysis) Flags]*	Set whether WBC abnormal flags (WBC abnormal IP messages) of body fluid analysis are displayed and the judgment value. (▶P.210 "7.6.7 WBC abnormal flag settings (body fluid analysis)")
[Close]	The dialog box closes.

* Does not appear when the instrument does not have the body fluid analysis function.

7.6.1 Patient category settings

Touch [Patient Category Settings] in the [Data analysis Setting] dialog box.



[Patient Category Settings] dialog box

Category list	Displays a list of the patient category. When a category is selected, the settings are displayed on the right. The settings can be changed.
[Use]	Select this checkbox to enable the settings of the selected category.
[Lower Age Limit], [Upper Age Limit]	Set values in [Year], [Month], and [Week]. [Year], [Month], and [Week] of [Lower Age Limit] and [Upper Age Limit] are the time elapsed after birth, not a date.
[Sex]	Select the sex.



Note:

If there is no information on the age or sex, or there is no applicable category, the limit values of the universal category are automatically used.

7.6.2 Reference interval settings

Touch [Setting Reference Interval] in the [Data analysis Setting] dialog box.

Item	Lower Limit	Upper Limit	Unit
WBC	3.00	15.00	10 ³ /uL
RBC	2.50	5.50	10 ⁶ /uL
HGB	8.0	17.0	g/dL
HCT	26.0	50.0	%
MCV	86.0	110.0	fL
MCH	26.0	38.0	pg
MCHC	31.0	37.0	g/dL
PLT	50	400	10 ³ /uL
RDW-SD	37.0	54.0	fL

[Setting Reference Interval] dialog box

[Specify Patient Category]	Select the patient category whose settings are to be configured. The settings of the selected category appear on the right. (►P.204 "7.6.1 Patient category settings")
Reference interval value list	Displays a list of the reference interval values of the selected category. When an item is selected, the settings appear on the right. The settings can be changed.
[Lower Limit]*, [Upper Limit]*	Enter a value to set the lower limit and the upper limit for abnormal judgments. If a reference interval value is not needed, set the lower limit to [0] and the upper limit to a high value such as 999.9.

* The XN-L series displays the decimal point symbol set in Windows. The only decimal point symbols displayed are "." (period) and "," (comma).



Note:

- When the analysis value of a parameter exceeds the reference Interval, "+" or "-" appears on the right of the data.
- Units cannot be set in this dialog box. To set the units, see the following. (►P.222 "7.8.2 Unit settings")

7.6.3 Critical value settings

Touch [Critical Value Setting] in the [Data analysis Setting] dialog box.

Item	Lower Limit	Upper Limit	Unit
WBC	0.03	440.00	10 ³ /uL
RBC	0.01	8.60	10 ⁶ /uL
HGB	0.1	0.26	g/dL
HCT	0.1	75.0	%
MCV	0.0	999.9	fL
MCH	0.0	999.9	pg
MCHC	0.0	999.9	g/dL
PLT	2	5000	10 ³ /uL
RDW-SD	0.0	999.9	fL
RDW-CV	0.0	999.9	%
PDW	0.0	999.9	fL
MPV	0.0	999.9	fL

Item: WBC
Lower Limit: 0.03
Upper Limit: 440.00

[Critical Value Setting] dialog box

Critical value list Displays a list of the critical values (upper and lower limit values of analysis parameters).
When an item is selected, the settings appear on the right. The settings can be changed.

[Lower Limit]*,
[Upper Limit]* Enter a value to set the upper limit and the lower limit for analysis items.

* The XN-L series displays the decimal point symbol set in Windows.
The only decimal point symbols displayed are "." (period) and "," (comma).

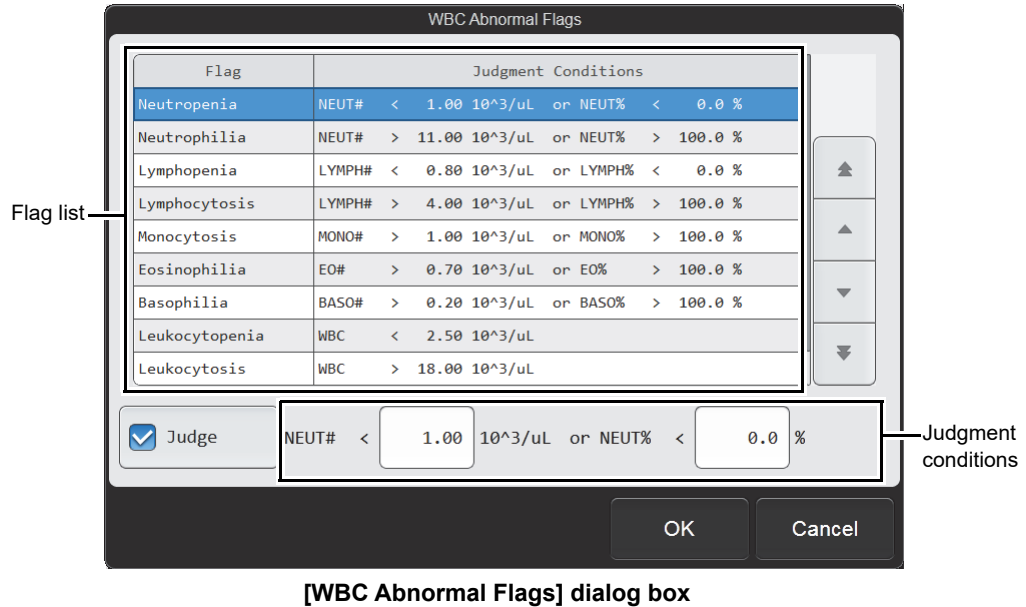


Note:

- When the analysis value of a parameter exceeds the critical value, "!" appears next to the data.
- Sampler analysis can be set to stop when there is data with "!". (XN-550)
- Units cannot be set in this dialog box. To set the units, see the following.
(▶P.222 "7.8.2 Unit settings")

7.6.4 WBC abnormal flag settings

Touch [WBC Flags] in the [Data analysis Setting] dialog box.



Flag list	Displays a list of the flags and the set judgment conditions. When a flag is selected, the settings appear at the bottom. The settings can be changed.
[Judge]	Select this checkbox to enable the selected flag judgment.
Judgment conditions *	Enter a value for the judgment conditions.

* The XN-L series displays the decimal point symbol set in Windows.
The only decimal point symbols displayed are "." (period) and "," (comma).

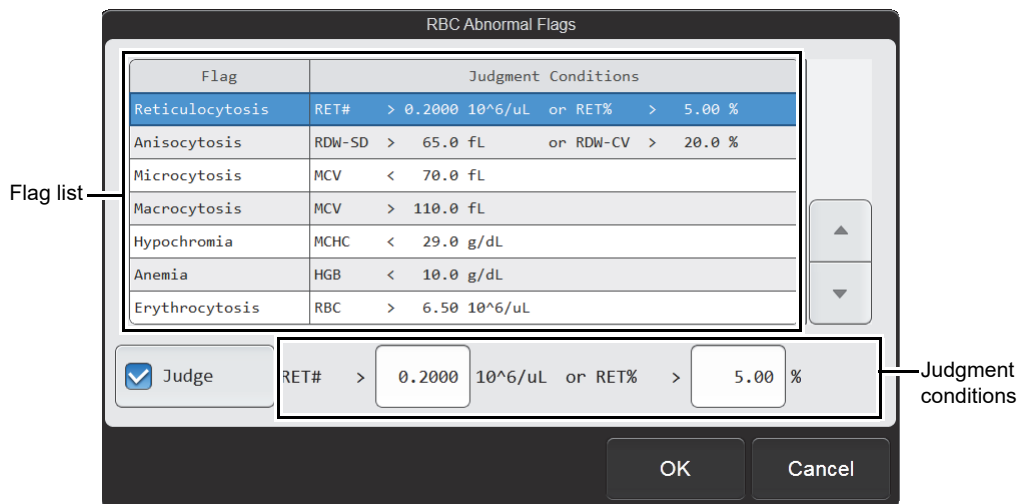


Note:

For details on flags and the values that can be entered, see "Troubleshooting".
(▶ Troubleshooting, "Chapter 5: 5.3 IP message judgment conditions and judgment methods")

7.6.5 RBC abnormal flag settings

Touch [RBC Flags] in the [Data analysis Setting] dialog box.



[RBC Abnormal Flags] dialog box

Flag list ^{*1}	Displays a list of the flags and the set judgment conditions. When a flag is selected, the settings appear at the bottom. The settings can be changed.
[Judge]	Select this checkbox to enable the selected flag judgment.
Judgment conditions ^{*2}	Enter a value for the judgment conditions.

*1 [Reticulocytosis] does not appear when the instrument does not have the RET analysis function.

*2 The XN-L series displays the decimal point symbol set in Windows.

The only decimal point symbols displayed are "." (period) and "," (comma).

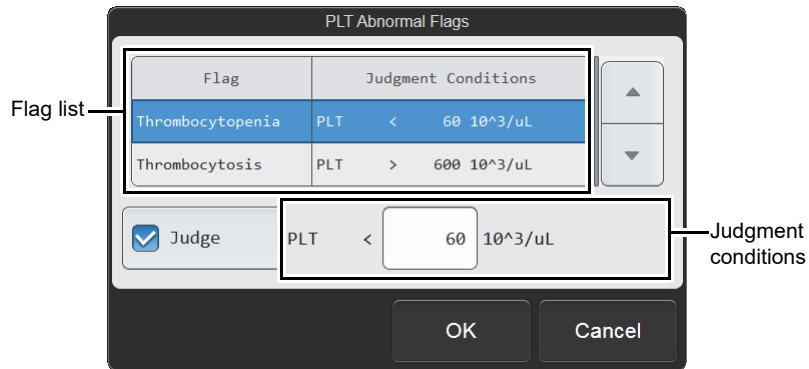


Note:

For details on flags and the values that can be entered, see "Troubleshooting".
(▶ Troubleshooting, "Chapter 5: 5.3 IP message judgment conditions and judgment methods")

7.6.6 PLT abnormal flag settings

Touch [PLT Flags] in the [Data analysis Setting] dialog box.



[PLT Abnormal Flags] dialog box

Flag list	Displays a list of the flags and the set judgment conditions. When a flag is selected, the settings appear at the bottom. The settings can be changed.
[Judge]	Select this checkbox to enable the selected flag judgment.
Judgment conditions *	Enter a value for the judgment conditions.

* The XN-L series displays the decimal point symbol set in Windows.
The only decimal point symbols displayed are "." (period) and "," (comma).



Note:

For details on flags and the values that can be entered, see "Troubleshooting".
(▶ Troubleshooting, "Chapter 5: 5.3 IP message judgment conditions and judgment methods")

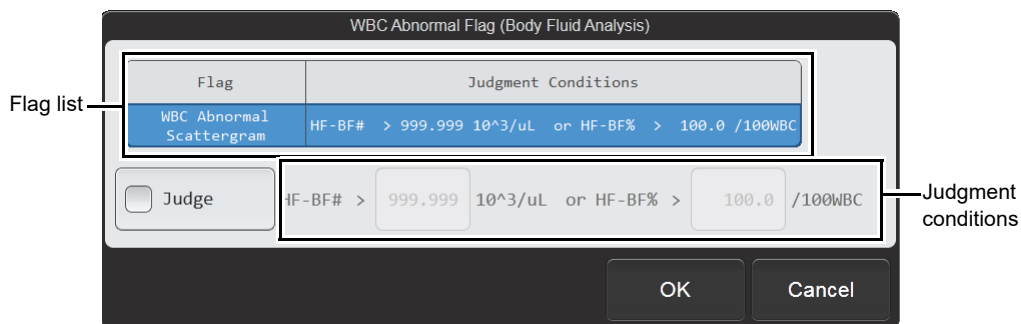
7.6.7 WBC abnormal flag settings (body fluid analysis)



Note:

This setting does not appear when the instrument does not have the body fluid analysis function.

Touch [WBC (Body Fluid Analysis) Flags] in the [Data analysis Setting] dialog box.



[WBC Abnormal Flag (Body Fluid Analysis)] dialog box

Flag list	Displays a list of the flags and the set judgment conditions. (There is only 1 WBC abnormal flag for body fluid analysis.)
[Judge]	Select this checkbox to enable the flag judgment.
Judgment conditions*	Enter a value for the judgment conditions.

* The XN-L series displays the decimal point symbol set in Windows.
The only decimal point symbols displayed are "." (period) and "," (comma).

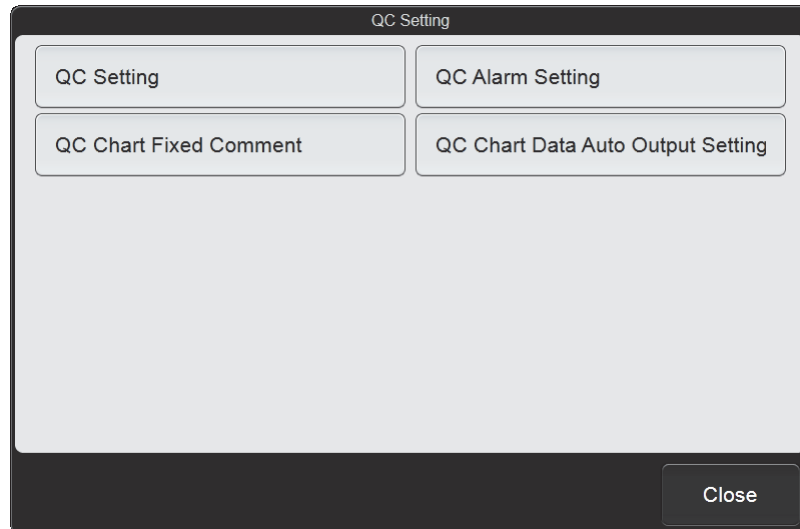


Note:

For details on flags and the values that can be entered, see "Troubleshooting".
(►Troubleshooting, "Chapter 5: 5.3 IP message judgment conditions and judgment methods")

7.7 QC settings

To display the [QC Setting] dialog box, touch the [QC Setting] icon in the [Setting] menu screen.



[QC Setting] dialog box

Touch the buttons to display screens for the settings below.

[QC Setting]	Set the QC method and other basic settings. (▶P.212 "7.7.1 QC settings")
[QC Alarm Setting]	Configure settings for alarms that prompt you to perform QC. (▶P.213 "7.7.2 QC alarm settings")
[QC Chart Fixed Comment]	Set fixed comments that can be added to plots in QC charts. (▶P.214 "7.7.3 QC chart fixed comment settings")
[QC Chart Data Auto Output Setting]	Set whether QC data is automatically output to the host computer or graphic printer. (▶P.215 "7.7.4 QC chart data auto output settings")
[Close]	The dialog box closes.

7.7.1 QC settings

Touch [QC Setting] in the [QC Setting] dialog box.

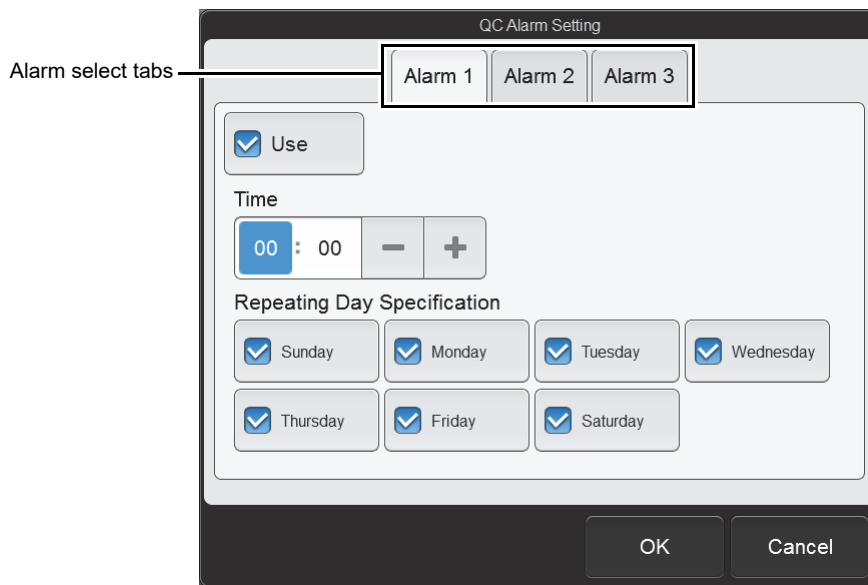
[QC Setting] dialog box

[QC Method Setting]	Select [X-bar] or [L-J] for the QC method.
[Limit Setting]	Select the calculation method for the limit range from the following. [Differential (#)]: Calculation of the limit range by numerical value (SD) with respect to the mean value (target). [Ratio (%)]: Calculation of the limit range by ratio (CV) with respect to the mean value (target).
[Auto Limit Setting]	To set auto limit, select the multiplication factor for the limit range from the following. [2SD]: Set the limit range to 2SD (CV). [3SD]: Set the limit range to 3SD (CV).
[X-barM Batch Setting]*	For X-barM QC, enter a value to set the number of samples (batch number) used in each QC analysis for each discrete.

* [Number of RET Samples] does not appear when the instrument does not have the RET analysis function.

7.7.2 QC alarm settings

Touch [QC Alarm Setting] in the [QC Setting] dialog box.

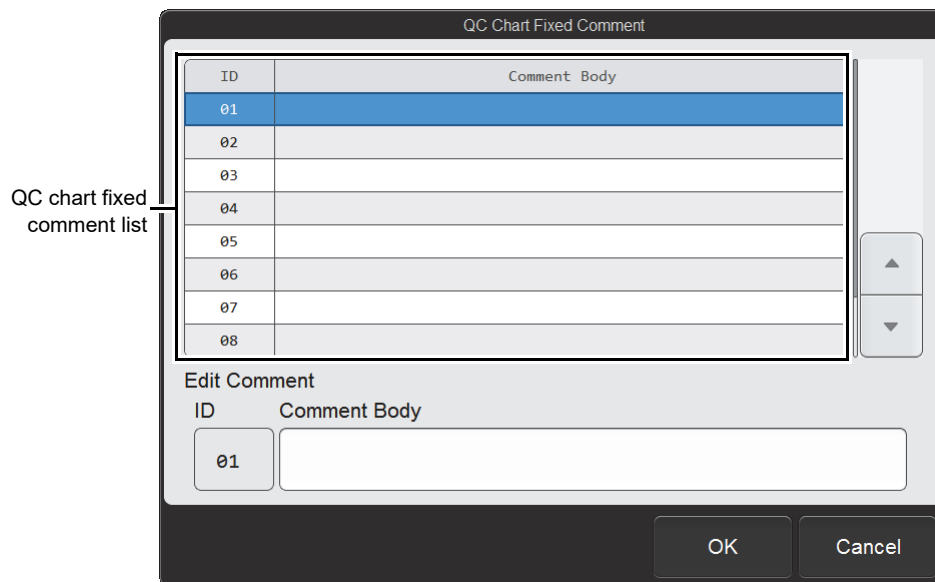


[QC Alarm Setting] dialog box

Alarm select tabs	Three alarms that prompt you to perform QC can be registered, and the settings of each alarm are configured by selecting the tabs.
[Use]	When selected, the alarm will sound.
[Time]	Set the time when the alarm will sound. Touch [-] to decrease the value. Touch [+] to increase the value.
[Repeating Day Specification]	The alarm will sound on the selected days of the week.

7.7.3 QC chart fixed comment settings

Touch [QC Chart Fixed Comment] in the [QC Setting] dialog box.



[QC Chart Fixed Comment] dialog box

QC chart fixed comment list	Displays a list of the QC chart fixed comment. When a comment is selected, the settings appear at the bottom. The settings can be changed.
[ID]	ID numbers from 01 to 10 appear. The ID numbers cannot be changed.
[Comment Body]	Enter a comment. Up to 100 characters can be entered. If a comment cannot be fully displayed in the entry field, [...] appears at the end.

7.7.4 QC chart data auto output settings

Touch [QC Chart Data Auto Output Setting] in the [QC Setting] dialog box.

[QC Chart Data Auto Output Setting] dialog box

[QC Chart Screen]	Specify whether or not the plotted data is automatically output to the host computer when QC data is plotted on a QC chart.
[QC Files (Excluding X-barM)]	Select this checkbox to have plotted data (excluding X-barM control) automatically output to the host computer.
[X-barM Files]	Select this checkbox to have X-barM control plotted data automatically output to the host computer.
[Explorer Screen]	Specify whether or not the analysis results of sample numbers that start with "QC-" are automatically output.
[Graphic Printer (GP)]	Select this checkbox to have the data output to the graphic printer.
[Host Computer (HC)]	Select this checkbox to have the data output to the host computer.

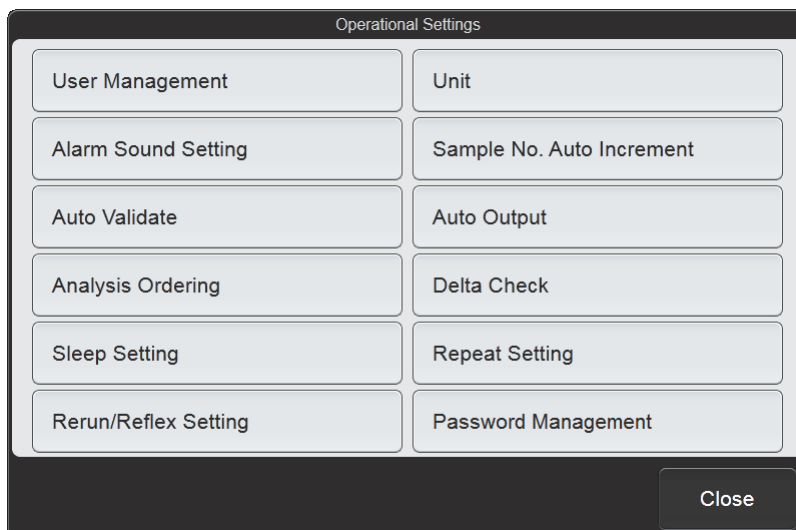


Note:

To output data to the host computer, a connection to the host computer is required.
(► **P.200** "7.5.1 Host computer connection")

7.8 Operational settings

To display the [Operational Settings] dialog box, touch the [Operational Settings] icon in the [Setting] menu screen.



[Operational Settings] dialog box

Touch the buttons to display screens for the settings below.

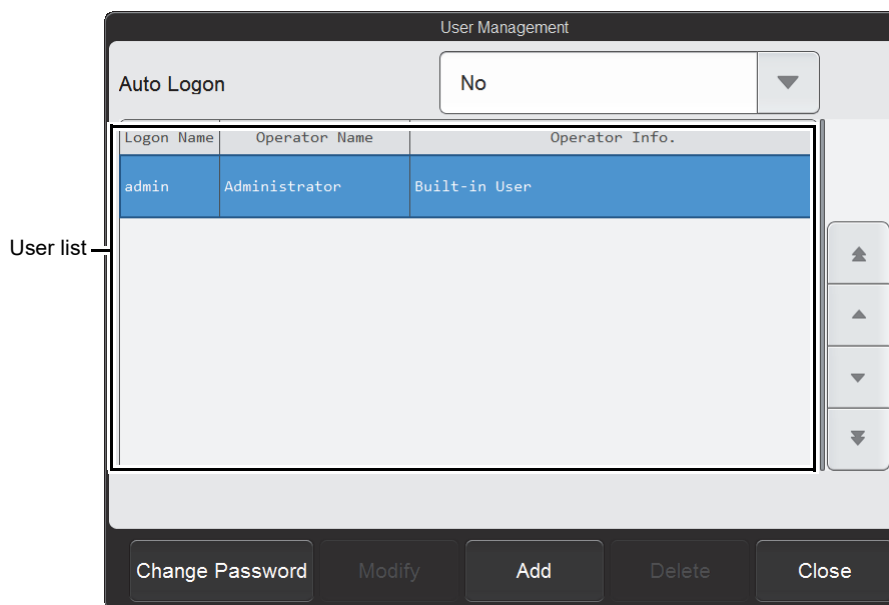
[User Management]	Register and delete users of the instrument. Auto logon can also be set. (▶P.217 "7.8.1 User information management (user registration)")
[Unit]	Set the units of analysis values. (▶P.222 "7.8.2 Unit settings")
[Alarm Sound Setting]	Set the alarm sound that alerts you when an error has occurred. (▶P.223 "7.8.3 Alarm sound settings")
[Sample No. Auto Increment]	Specify whether sample numbers are automatically incremented. (▶P.224 "7.8.4 Sample number auto increment settings")
[Auto Validate]	Specify whether analysis results are automatically validated. (▶P.224 "7.8.5 Auto validate settings")
[Auto Output]	Specify whether analysis results are automatically output to the host computer or graphic printer. (▶P.226 "7.8.6 Auto output settings")
[Analysis Ordering]	Set the keys and method used to query the host computer for analysis information. (▶P.228 "7.8.7 Analysis ordering settings")
[Delta Check]	Specify whether delta check is performed. (▶P.229 "7.8.8 Delta check settings")
[Sleep Setting]	Set the time until the instrument enters the sleep state when left idle. (▶P.230 "7.8.9 Sleep settings")
[Repeat Setting]^{*1}	Specify whether Repeat analysis is performed. (▶P.230 "7.8.10 Repeat settings (XN-550)")
[Rerun/Reflex Setting]^{*1}	Specify whether Rerun analysis and Reflex analysis are performed. (▶P.230 "7.8.11 Rerun/Reflex settings (XN-550)")
[Password Management]^{*2}	Set the password security level. (▶P.231 "7.8.12 Managing the password")
[Close]	The dialog box closes.

*1 XN-550 only.

*2 Only the [admin] (instrument administrator) can use this setting.

7.8.1 User information management (user registration)

Touch [User Management] in the [Operational Settings] dialog box.



[User Management] dialog box

[Auto Logon]	To use auto logon, select the user (logon name) used for logon. To not use auto logon, select [No].
User list	Displays a list of the users. To change user information or delete a user, select the user in the list and touch a button at the bottom of the screen. To change information or permissions: Select the user and touch [Modify]. To delete: Select the user and touch [Delete].
[Change Password]	The password of the currently logged on user can be changed. (▶ P.218 "● Changing password")
[Modify]^{*1,2}	User information and permissions can be changed. (▶ P.219 "● Changing settings and adding users")
[Add]	A user can be added. When the maximum number of users (100) have been registered, a user cannot be added. (▶ P.219 "● Changing settings and adding users")
[Delete]^{*2}	Use to delete a user selected in the user list. (▶ P.221 "● Deleting users")

*1 You can also double-click a user in the user list whose settings you want to change to open a dialog box.

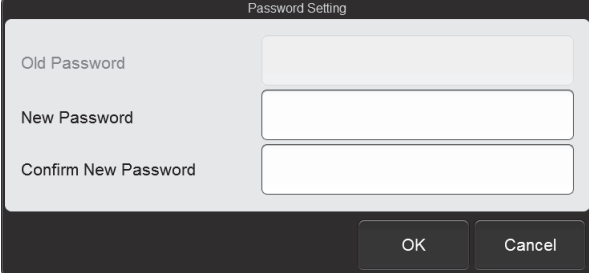
*2 The [admin] (instrument administrator) cannot be deleted. Aside from the [admin] (instrument administrator) password, nothing can be changed.

● Changing password

Follow the steps below to change the password.

1 Touch [Change Password].

The [Password Setting] dialog box appears.



[Password Setting] dialog box

2 Touch an item to set the condition.

[Old Password]	Enter the current password. A user with [All Administrators] permission and the [admin] (instrument administrator) do not need to enter the current password.
[New Password]	Enter the new password. Up to 20 characters can be entered. Double-byte characters cannot be entered.
[Confirm New Password]	Re-enter the new password for confirmation.

3 Touch [OK].

The password is changed.



Note:

A user with [All Administrators] permission and the [admin] (instrument administrator) can change the passwords of other users with the [Modify] procedure. For details on changing settings, see the following. (►P.219 "● Changing settings and adding users")

● Changing settings and adding users

Follow the steps below to change settings or add a user.

1 Touch the user whose settings you want to change.

If you are adding a user, you do not need to select a user.

2 Touch [Modify] to change settings or [Add] to add a user.

The dialog box below appears.

[User Management] (Setting) dialog box



Note:

The maximum number of users that can be registered is 100.

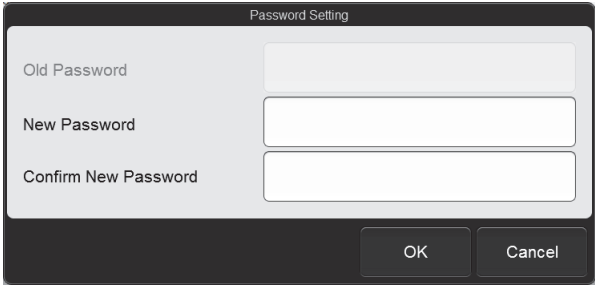
3 Touch an item to set the condition.

[Logon Name]

Enter the logon name of the user.

Up to 6 characters can be entered. Double-byte characters cannot be entered.

If the dialog box was opened from [Modify], this cannot be changed.

[Password]	<p>Set the password. Touch to display the dialog box on the right. Enter the password in [New Password] and [Confirm New Password], and touch [OK]. Up to 20 characters can be entered. Double-byte characters cannot be entered.</p>	
[Shift]	Select the shift. QC result plots can be viewed for each shift.	
[Language]	<p>Select the language that is displayed for the user. For the languages that are available, see the following. (▶P.196 "7.4.1 Changing the display language (system language)")</p>	
[Operator Name]	<p>Enter the logon name of the user. Up to 20 characters can be entered.</p>	
[Operator Info.]	<p>Enter additional information related to the user. Up to 100 characters can be entered.</p>	
[Permission]	<p>Select the permission setting method from the following. [All Administrators]: Set all permissions included in [Select Detailed Permissions]. [Set separately]: Set each permission in [Select Detailed Permissions] separately.</p>	
[Select Detailed Permissions]	Displays a list of the detailed permissions.	
[Order Registration]	Select this checkbox to permit the user to register analysis orders.	
[Instrument Analysis]	Select this checkbox to permit the user to perform analysis.	
[Modify / Delete Results]	Select this checkbox to permit the user to change or delete analysis results.	
[Validate]	Select this checkbox to permit the user to perform validation.	
[Display and Output of Research Items]	<p>Select this checkbox to permit the user to do the following.</p> <ul style="list-style-type: none"> • Display research parameters in the [Data Browser] screen and [Sample Explorer] screen. • Output research parameters. (CSV output, graphic printer printing) 	
[Input and delete QC Lot Information, Operate plot]	<p>Select this checkbox to permit the user to do the following.</p> <ul style="list-style-type: none"> • Enter and delete lot information of QC samples. • Operate plot of QC results. • Manage QC cursor data. 	
[Calibration]	Select this checkbox to permit the user to perform calibration.	
[Modify Settings]	Select this checkbox to permit the user to change settings.	
[Display and Modify Patient Info.]	<p>Select this checkbox to permit the user to do the following.</p> <ul style="list-style-type: none"> • Display and modify patient information. • Include patient information in the saved data of Sample Explorer and in CSV file output. However, this must also be set in [Security] setting. (▶P.234 "7.9.3 Security settings") 	
[Output Results]	Select this checkbox to permit the user to perform output.	

4 Touch [OK].

The dialog box closes and the settings are changed or the user is added.

● Deleting users

Follow the steps below to delete a user.



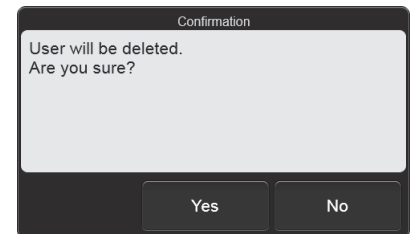
Note:

- Users with [All Administrators] permission and the [admin] (instrument administrator) can delete other users.
- The [admin] (instrument administrator) cannot be deleted.

1 Touch the user you want to delete.

2 Touch [Delete].

The dialog box on the right appears.



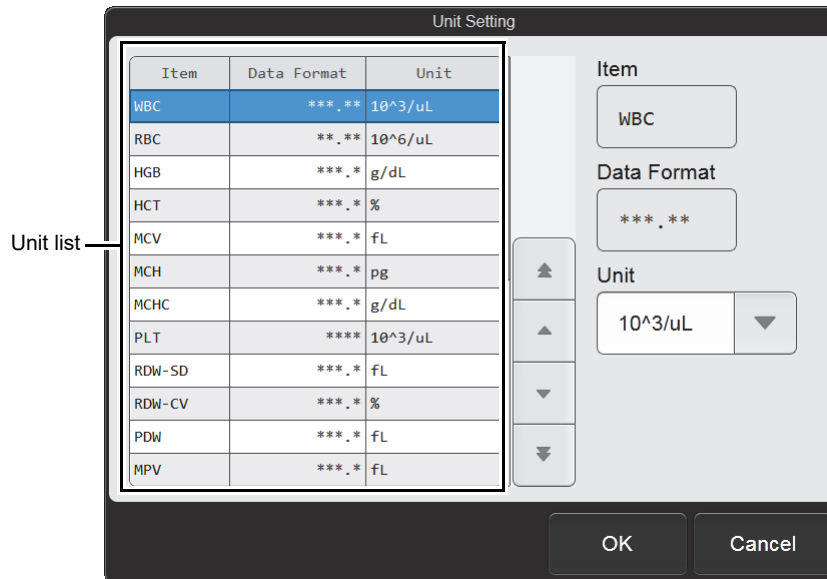
3 Touch [Yes].

The deletion starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the deletion is complete.

7.8.2 Unit settings

Touch [Unit] in the [Operational Settings] dialog box.



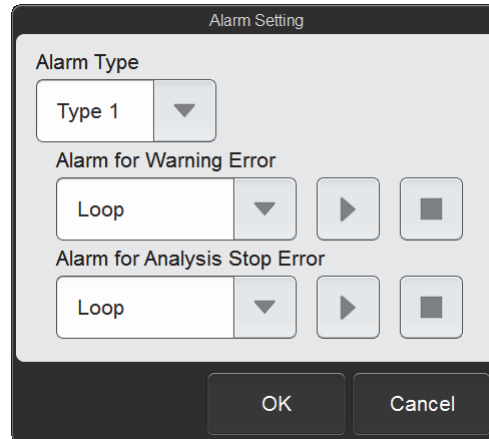
[Unit Setting] dialog box

Unit list	Displays a list of the units. When an item is selected, the settings appear on the right. The settings can be changed.
[Unit]	Select the unit. When the units are changed, the displayed [Data Format]* changes accordingly.





* The XN-L series displays the decimal point symbol set in Windows.
The only decimal point symbols displayed are "." (period) and "," (comma).

7.8.3 Alarm sound settings

Touch [Alarm Sound Setting] in the [Operational Settings] dialog box.



[Alarm Setting] dialog box

[Alarm Type]	Select the alarm sound.
[Alarm for Warning Error]	<p>Set the alarm sound that alerts you when a warning error has occurred.</p> <p>[No Alarm]: No alarm sound.</p> <p>[Once]: The alarm sounds once.</p> <p>[Loop]: The alarm sounds repeatedly until the screen is touched.</p> <p> (Play): Touch to listen to the selected alarm sound.</p> <p> (Stop): Touch during alarm loop to stop the alarm sound.</p>
[Alarm for Analysis Stop Error]	<p>Set the alarm sound that alerts you when an analysis stop error has occurred.</p> <p>[No Alarm]: No alarm sound.</p> <p>[Once]: The alarm sounds once.</p> <p>[Loop]: The alarm sounds repeatedly until the screen is touched.</p> <p> (Play): Touch to listen to the selected alarm sound.</p> <p> (Stop): Touch during alarm loop to stop the alarm sound.</p>



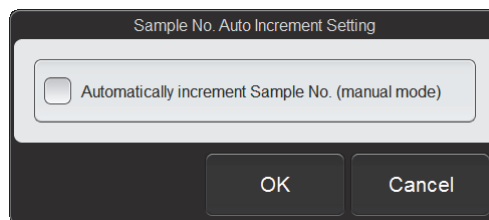
Note:

The alarm sound settings for emergency stop errors such as an instrument failure cannot be changed.

7.8.4 Sample number auto increment settings

Touch [Sample No. Auto Increment] in the [Operational Settings] dialog box.

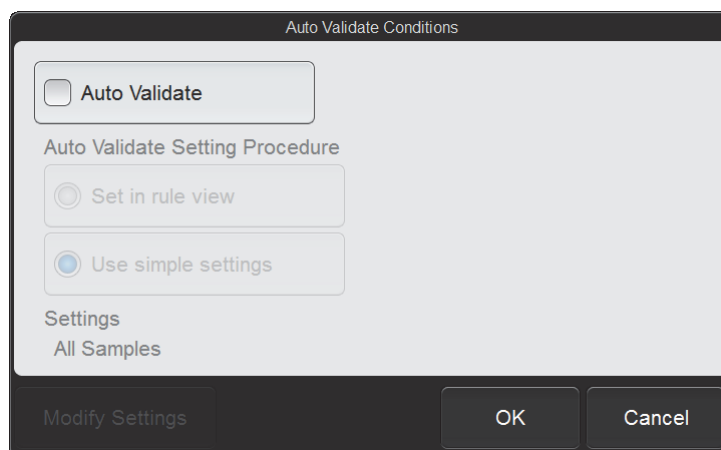
[Automatically increment Sample No. (manual mode)]	Select this checkbox to have the sample number automatically assigned as a sequential number when manual analysis is performed.
-----------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------



[Sample No. Auto Increment Setting] dialog box

7.8.5 Auto validate settings

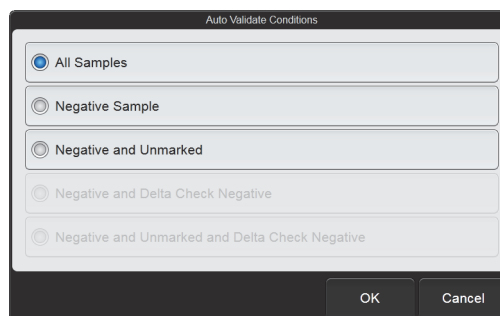
Touch [Auto Validate] in the [Operational Settings] dialog box.



[Auto Validate Conditions] dialog box

[Auto Validate]	Select this checkbox to have the samples automatically validated.
[Auto Validate Setting Procedure]	Select the setting method for validate conditions. [Set in rule view]: Validate based on the conditions set on the [Validation Rule] tab of the [Rule] screen. [Use simple settings]: Validate based on the conditions set in the dialog box that appears when [Modify Settings] is touched.
[Settings]	Displays the settings or the reference location for the selected auto validate setting method.

[Modify Settings] Touch to display the dialog box on the right. Condition settings for [Use simple settings] are applied. Select the type of sample to be validated automatically.



[All Samples]	All samples will be automatically validated regardless of the analysis mode.
[Negative Sample]	Automatically validate samples with [Negative] analysis results.
[Negative and Unmarked]	Automatically validate samples with [Negative] analysis results and no error marks.
[Negative and Delta Check Negative]*	Automatically validate samples with [Negative] analysis results and no delta check errors.
[Negative and Unmarked and Delta Check Negative]*	Automatically validate samples with [Negative] analysis results and no error marks or delta check errors.

* Only appears when delta check is enabled.

(►P.229 "7.8.8 Delta check settings")

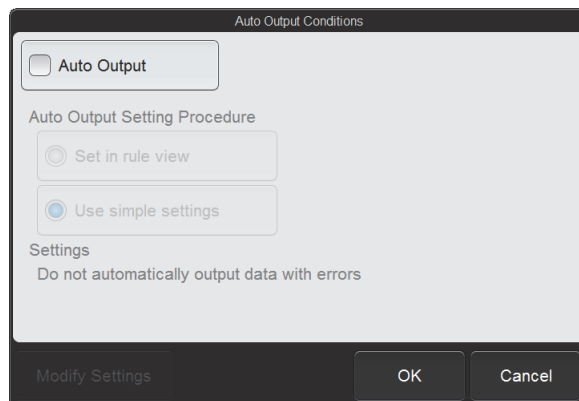


Note:

Only analysis results that have been validated can be output.

7.8.6 Auto output settings

Touch [Auto Output] in the [Operational Settings] dialog box.

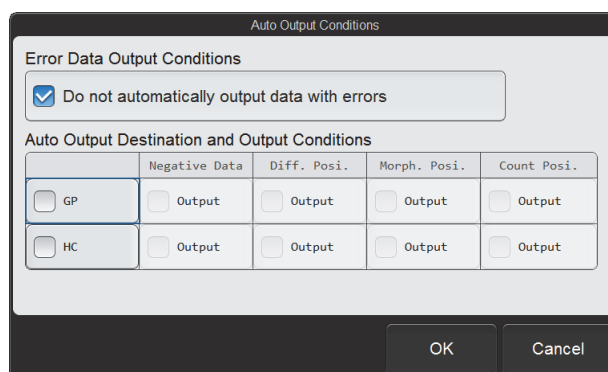


[Auto Output Conditions] dialog box

[Auto Output]	Select this checkbox to have validated samples automatically output.
[Auto Output Setting Procedure]	Select the setting method for auto output conditions. [Set in rule view]: Automatically output analysis results based on the conditions set on the [Output Rule] tab of the [Rule] screen. [Use simple settings]: Automatically output analysis results based on the conditions set in the dialog box that appears when [Modify Settings] is touched.
[Settings]	Displays the settings or the reference location for the selected auto output setting method.
[Modify Settings]	Use to configure detailed settings for [Use simple settings].

● Detailed settings of simple settings

Touch [Modify Settings] after [Use simple settings] has been selected to display the dialog box below.



[Auto Output Conditions] (Modify Settings) dialog box

[Do not automatically output data with errors]	When this checkbox is selected, data that includes errors are not output to all output destinations, regardless of the output conditions.
-------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------

[Auto Output Destination and Output Conditions] Set the output destinations and the output conditions for each destination.

[GP] Select this checkbox to have the data output to the graphic printer.

[HC] Select this checkbox to have the data output to the host computer.

[Negative Data] Select data that has no parameters judged abnormal and no analysis errors.

[Diff. Posi.] Select sample data with abnormal blood cell differentiation.

[Morph. Posi.] Select sample data with abnormal blood cell morphology.

[Count Posi.] Select sample data with abnormal blood cell counts.

**Note:**

Data which has already been transmitted will not be transmitted again, if auto output is selected.

7.8.7 Analysis ordering settings

Touch [Analysis Ordering] in the [Operational Settings] dialog box.

[Analysis Ordering] dialog box

[Key Setting]	Select the analysis ordering key. [Sample No.]: Query for analysis orders by sample number. [Adapter No./Tube Pos.]*: Query for analysis orders by sample tube position. When this is selected, reading of the sample tube label is not performed in the sampler. Fixed at [Sample No.] on the XN-450 and XN-350.
[Realtime Host Order Setting]	Specify whether or not the host computer is queried in real-time for each analysis type.
[Manual Analysis]	Select this checkbox to query in manual analysis.
[Sampler Analysis]*	Select this checkbox to query in sampler analysis.

* XN-550 only.



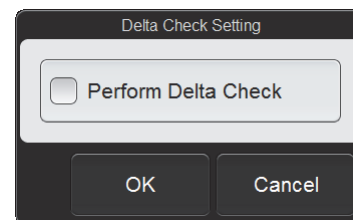
Note:

If you attempt to change [Key Setting] when there is a pending order in the [Work List] screen, a warning dialog box will appear to inform you that this is not possible. Analyze or delete the pending order first and then change the settings.

7.8.8 Delta check settings

Touch [Delta Check] in the [Operational Settings] dialog box.

[Perform Delta Check]	Select this checkbox to have delta check performed.
------------------------------	-----------------------------------------------------



**[Delta Check Setting]
dialog box**

● Delta check

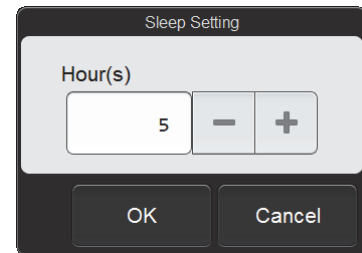
Using the patient ID as a key, delta check compares the most recent analysis results with the previous analysis results and judges if the data is abnormal based on any changes in the data.

Purpose	<p>Detects the possibility of the following errors.</p> <ul style="list-style-type: none"> • Sample mix-up • Sample or instrument problem
Method	The difference between the data being judged and the previous analysis data is obtained using the patient ID as a key.
Checked parameter	<p>WBC, HGB, MCV, PLT</p> <p>If the previous analysis was performed more than 4 days earlier, WBC judgment is not performed.</p> <p>Analysis results of [Body Fluid] mode are not included in the delta check.</p>
Display	<p>[Check] is displayed in the [Action] column on the [Sample Explorer] screen.</p> <p>The following delta check details can be viewed in [Action] of the [Action/Error] dialog box on the [Data Browser] screen.</p> <ul style="list-style-type: none"> • [The sample might be wrong. Check the sample.] • [Significant change in WBC. Check the sample.]* <p>* This is just one example of a supported analysis parameter. Depending on the judgment, the message will refer to WBC, HGB, MCV, or PLT.</p>

7.8.9 Sleep settings

Touch [Sleep Setting] in the [Operational Settings] dialog box.

[Hour(s)]	Set the time until the sleep state is entered. The time can be set from 1 to 12 hours. Touch [-] to decrease the value. Touch [+] to increase the value.
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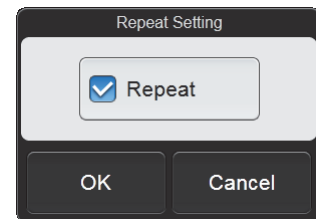


[Sleep Setting] dialog box

7.8.10 Repeat settings (XN-550)

Touch [Repeat Setting] in the [Operational Settings] dialog box.

[Repeat]	Select this checkbox to perform Repeat analysis.
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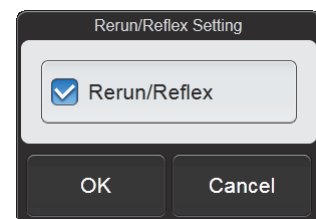


[Repeat Setting] dialog box

7.8.11 Rerun/Reflex settings (XN-550)

Touch [Rerun/Reflex Setting] in the [Operational Settings] dialog box.

[Rerun/Reflex]	Select this checkbox to perform Rerun analysis and Reflex analysis.
-----------------------	---------------------------------------------------------------------



[Rerun/Reflex Setting] dialog box

7.8.12 Managing the password

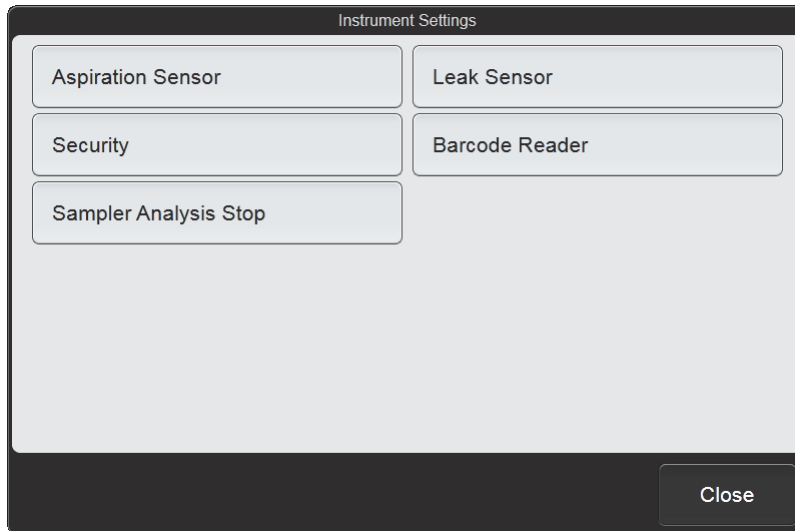
The password can only be managed by the [admin] (instrument administrator).
Touch [Password Management] in the [Operational Settings] dialog box.

[Password Management] dialog box

[Enable password character restriction]	Select this checkbox to enable the password character restriction. When enabled, passwords must be at least 6 characters, and must be a combination of upper and lower case letters and numbers. [Description]: Displays a detailed description.
[Enable password expiration restriction]	Select this checkbox to set the password expiration restriction. [Description]: Displays a detailed description.
[Expiration period]	Set the password expiration date. This can be set from 1 to 999 days.
[Prior notification of password expiration]	Set the date for sending notification prior to password expiration. If notification is not required, enter the same date as in [Expiration period]. This can be set from 1 to 999 days.
[Enable password-reuse restriction]	Select this checkbox to cause password changes to be remembered so that previously used passwords cannot be used again. [Description]: Displays a detailed description.
[Password history]	Set the number of passwords to be remembered. This can be set from 1 to 99 passwords.

7.9 Instrument settings

To display the [Instrument Settings] dialog box, touch the [Instrument Settings] icon in the [Setting] menu screen.



[Instrument Settings] dialog box

Touch the buttons to display screens for the settings below.

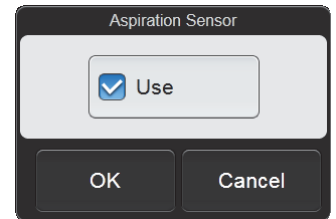
[Aspiration Sensor]	Specify whether or not the aspiration sensor is used. (▶P.233 "7.9.1 Aspiration sensor settings")
[Leak Sensor]	Specify whether or not the leak sensor is used. (▶P.233 "7.9.2 Leak sensor settings")
[Security]	Configure patient information output restrictions and screen locking settings. (▶P.234 "7.9.3 Security settings")
[Barcode Reader]*	Specify whether or not a barcode reader is used and set the reading method. (▶P.235 "7.9.4 Barcode reader settings (XN-550)")
[Sampler Analysis Stop]*	Set the conditions for stopping sampler analysis. (▶P.237 "7.9.5 Sampler analysis stop condition settings (XN-550)")
[Close]	The dialog box closes.

* XN-550 only.

7.9.1 Aspiration sensor settings

Touch [Aspiration Sensor] in the [Instrument Settings] dialog box.

[Use] Select this checkbox to use the aspiration sensor.



[Aspiration Sensor] dialog box



Caution!

Not using the [Aspiration Sensor] may affect analysis results. For [Whole Blood] mode analysis, select [Use].



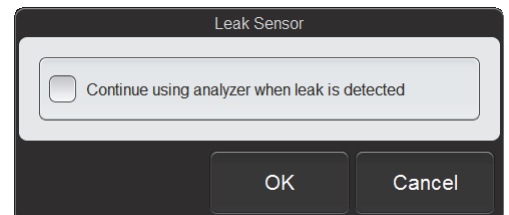
Note:

- If you know in advance that the blood sample is extremely thin, such as blood from a dialysis patient, disable [Aspiration Sensor].
- The aspiration sensor is not used in pre-dilution mode and body fluid analysis, regardless of this setting.

7.9.2 Leak sensor settings

Touch [Leak Sensor] in the [Instrument Settings] dialog box.

[Continue using analyzer when leak is detected] Select this checkbox to enable the continuous use of the analyzer when a leak is detected.



[Leak Sensor] dialog box

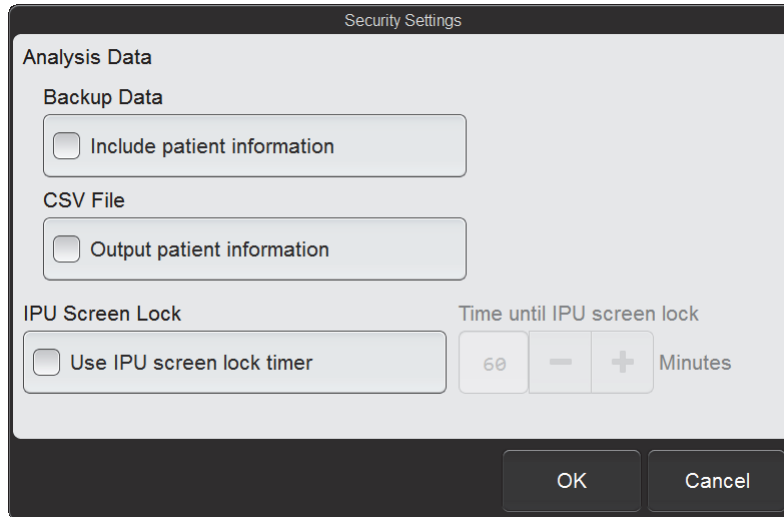


Caution!

Unless otherwise directed by your local Sysmex representative, keep the setting set to OFF. If continuously used with the setting set to ON, the instrument and other devices may be damaged if a leak occurs.

7.9.3 Security settings

Touch [Security] in the [Instrument Settings] dialog box.



[Security Settings] dialog box

[Include patient information]	Select this checkbox to include patient information when analysis results backup.
[Output patient information]	Select this checkbox to include patient information, ward names, and doctor names when outputting analysis results to a CSV file. CSV output of patient information, ward names, and doctor names will also be possible.
[Use IPU screen lock timer]	Select this checkbox to turn ON the screen lock timer. When the instrument is left idle for the time set on the timer, the screen locks and cannot be used.
[Time until IPU screen lock]	Set the time until the screen is locked by the screen lock timer. The time can be set from 15 to 60 minutes in increments of 1 minute. Touch [-] to decrease the value. Touch [+] to increase the value.

7.9.4 Barcode reader settings (XN-550)

Touch [Barcode Reader] in the [Instrument Settings] dialog box.

[Barcode Reader Connection] dialog box

[Read Tube ID]	Select this checkbox to turn ON the barcode reader.
[Specify Sample No. Length]	Select the number of digits that are read. To not specify a number of digits, select [No]. If a number of digits other than the specified number is read, a read error will occur. However, sample numbers reserved in the system for quality control ([QC-]) and rinsing ([RN-]) are not subject to the digit number check.
[Setting for Order Key Read Error]	Specify whether or not a sample for which an order key read error occurs is analyzed. When this checkbox is selected, analysis is performed using the default analysis information specified at the start of sampler analysis. When not selected, a sample for which an order key read error occurs is not analyzed. When ID read error is specified as a sampler stop condition, the sample is analyzed or skipped based on this setting after operation is resumed.
[Check Digits Conditions]	Set the barcode specifications.
[ITF]	Select this checkbox to enable reading of ITF barcodes. Select [Modulus-10] or [Through] for the check digit.
[NW7]	Select this checkbox to enable reading of CODABAR/NW7 barcodes. Select [Modulus-11], [W-Modulus-11], [Modulus-16], or [Through] for the check digit.
[CODE39]	Select this checkbox to enable reading of CODE39 barcodes. Select [Modulus-43] or [Through] for the check digit.
[JAN]	Select this checkbox to enable reading of JAN/EAN/UPC barcodes. The check digit is fixed at Modulus-10.
[ISBT128]	Select this checkbox to enable reading of ISBT128 barcodes. The check digit is fixed at Modulus-103.

[CODE128] CODE128 barcodes can always be read.
The check digit is fixed at Modulus-103.

7.9.5 Sampler analysis stop condition settings (XN-550)

Touch [Sampler Analysis Stop] in the [Instrument Settings] dialog box.

[Sampler Stop Conditions] dialog box

[ID Read Error]	Select this checkbox to have sampler analysis stop when a sample tube barcode label cannot be read.
[Blank Data]	Select this checkbox to have sampler analysis stop when the count is extremely low.
[Critical Value Data]	Select this checkbox to have sampler analysis stop when the critical value is exceeded. (► P.206 "7.6.3 Critical value settings")
[Aspiration Error]	Select this checkbox to have sampler analysis stop when blood cannot be aspirated or an insufficient volume is aspirated. This can be set when the aspiration sensor is used. (► P.233 "7.9.1 Aspiration sensor settings")
[QC Alarm]	Select this checkbox to have sampler analysis stop when the QC alarm sounds. This can be set when the QC alarm is used. (► P.213 "7.7.2 QC alarm settings")
[X-barM Limit Error]	Select this checkbox to have sampler analysis stop when an X-barM control error occurs in QC.
[L-J Limit Error]	Select this checkbox to have sampler analysis stop when an L-J or X-bar control error occurs in QC.
[Control Expired Error]	Select this checkbox to have sampler analysis stop when the control blood is past its expiration date.
[Unregistered Control]	Select this checkbox to have sampler analysis stop when the control blood has not been registered.
[Reagent Expired Error]	Select this checkbox to have sampler analysis stop when the reagent is past its expiration date.

7.10 Graphic printer print settings (GP Customize)

Analysis data, cumulative data, QC charts, and other data can be printed graphically from a graphic printer. The printed contents (format) can be customized using the GP Customize Tool (software that runs on a Windows computer).



Warning!

- Data output in lab format is for research purposes only. Do not use for the diagnosis of patients.
- When report format is displayed in the layout screen, parameters for research cannot be displayed in the template.

7.10.1 GP Customize functions

The items below can be placed in any desired position to create a format. The size and color of each item can be specified.

- Analysis data
 - Sample information
 - Analysis parameter
 - Reference interval
 - Scattergram^{*1}
 - Distribution^{*1}
 - IP message
 - Q-Flag^{*2}
 - QC chart

*1 Colors cannot be specified.

*2 Lab format only.

- Various types of information
Date and time printed, user name, software version, facility information, instrument name, etc.

- Optional items
 - Text
 - Line
 - Image (BMP, JPG, GIF, PNG)
 - Table

7.10.2 System requirements for GP Customize Tool

A computer with the following specifications is required to run GP Customize Tool.

Item	System
OS	Windows 7 or Windows 10
CPU	1.6 GHz or more
Memory	2 GB or more
Monitor	1920 x 1080 or more
Hard disk capacity	32 GB or more
Runtime	Windows 7 Microsoft .NET Framework 4.0 Windows 10 Microsoft .NET Framework 4.6.2
Port	USB port*

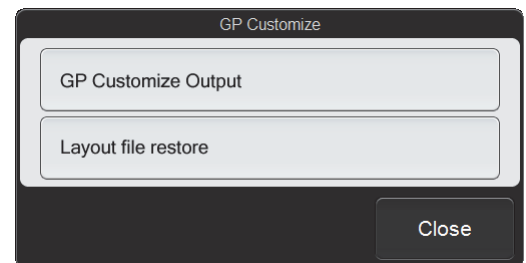
* Used for exchange of data with the instrument.

7.10.3 Using GP Customize

Follow the steps below to use GP Customize.

1 Touch the [GP Customize] icon in the [Setting] menu screen.

The [GP Customize] dialog box appears.

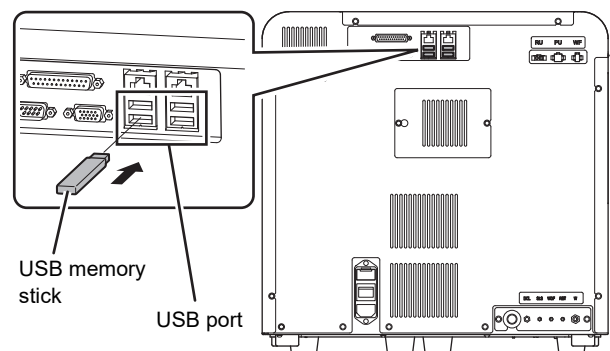


[GP Customize] dialog box

2 Insert the USB memory stick.

Insert the USB memory stick into a free USB port on the back of the instrument.

A USB memory stick with a password lock function cannot be used.



3 Touch [GP Customize Output].

The data output of the GP Customize starts and the [Waiting to complete execution] dialog box appears. The [Waiting to complete execution] dialog box closes when the data output is complete.

4 Remove the USB memory stick from the instrument and insert it into the computer.

5 Copy the GP Customize data to the computer.

The GP Customize data is in the "GPCustomize" folder in the folder whose name is the instrument ID. Copy the "GPCustomize" folder to the computer without changing its name.

6 Open the "GPCustomize" folder that was copied to the computer.

7 Double-click "GPCustomize.exe"*.

"GPCustomize.exe" is GP Customize Tool.
GP Customize Tool starts and the [GP Customize] screen appears.

* [.exe] may not appear in some computer environments.

8 Edit the format in the [GP Customize] screen.

When GP Customize Tool starts, the format currently used on the instrument automatically opens.

To change the format, change the format that appears.

To create a new format, click [New] on the toolbar and create the new layout.

For the [GP Customize] screen operation, see the following.

(▶P.241 "7.10.4 [GP Customize] screen")

9 When you have finished editing the format, click the [Save] button on the toolbar.

The edited format is saved in the "GPCustomize" folder.

10 Click [File] - [Exit] on the menu bar.

GP Customize Tool closes.

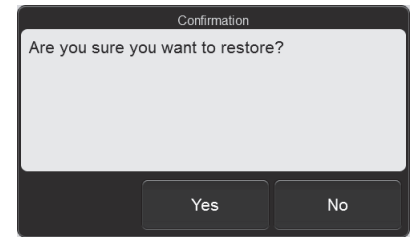
11 Copy the GP Customize data to the USB memory stick.

Copy the "GPCustomize" folder on the computer into the folder whose name is the instrument ID in the USB memory stick (overwrite the existing folder).

12 Remove the USB memory stick from the computer and insert it into the instrument.

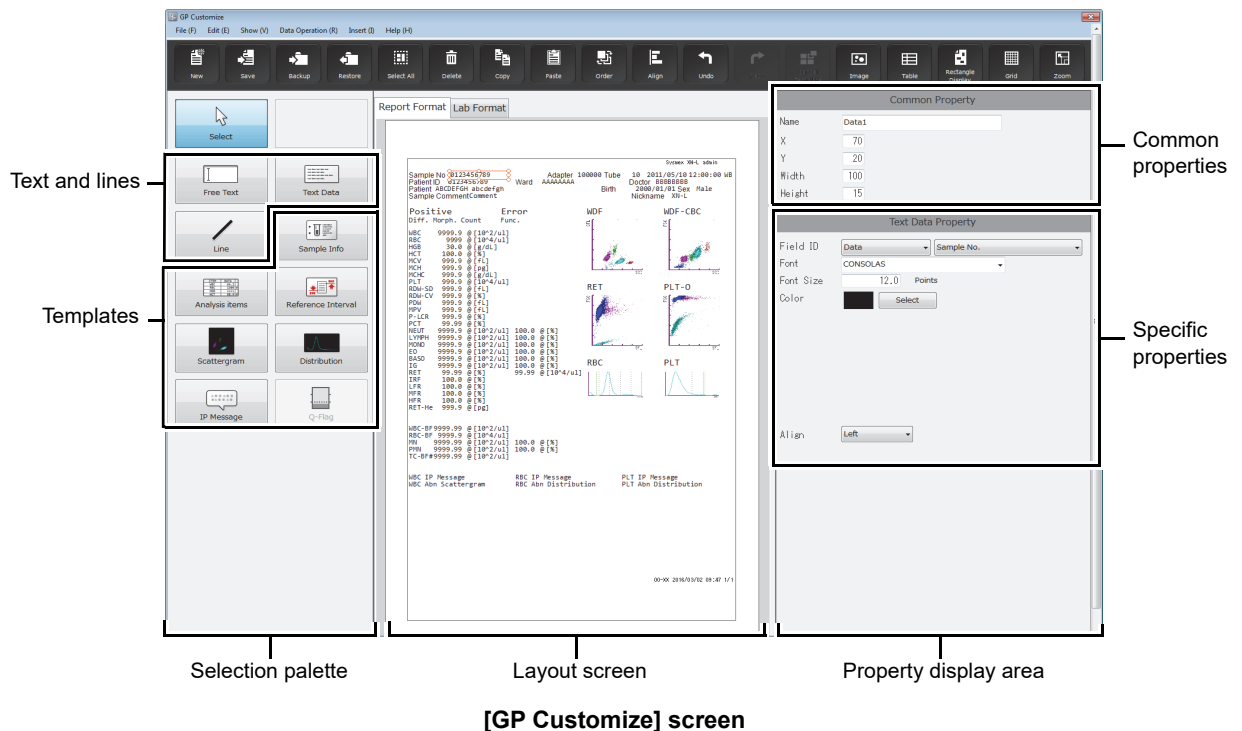
13 Touch [Layout file restore] in the [GP Customize] dialog box.

The dialog box on the right appears.

**14 Touch [Yes].**

The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the layout file restore is complete.

15 Remove the USB memory stick.**7.10.4 [GP Customize] screen**

Toolbar	Displays the function buttons.
[New]	Click to open a dialog box for creating a new layout.
[Save]	This can be clicked when the layout has been changed. Click to save the layout of the current layout screen temporarily.

[Backup]	The print layout of the current layout screen can be saved. (▶P.247 "● Saving a layout (backup)")
[Restore]	Replaces the current layout screen with the layout of the file that is restored. (▶P.247 "● Restoring a layout (restore)")
[Select All]	Click to select all objects in the layout screen.
[Delete]	This can be clicked when an object is selected. Click to delete an object selected in the layout screen.
[Copy]	This can be clicked when an object is selected. Click to copy an object selected in the layout screen.
[Paste]	Click to paste a copied object on the layout screen.
[Order]	This can be clicked when an object is selected. Click to display the object overlay order options. Select an option to change the overlay order of the objects. [Move Forward], [Move Backward], [Move to Front], or [Move to Back] can be selected.
[Align]	This can be clicked when an object is selected. Click to display the alignment options. Select an alignment option to align the objects. [Left Aligned], [Right Aligned], [Top Aligned], [Bottom Aligned], [Justify Vertically], [Justify Horizontally], [Center Vertically], [Center Horizontally], [Center Vertically in Rectangle], or [Center Horizontally in Rectangle] can be selected.
[Undo]	Click to undo the previous operation.
[Redo]	Click to cancel [Undo].
[Cancel Template]	Click to cancel the template setting of an object.
[Image]	Any image can be added to the layout screen. Click to open a dialog box for selecting the image file. Image formats are BMP, JPG, GIF, and PNG.
[Table]	A table can be added to the layout screen. Click to open a dialog box for setting a table.
[Rectangle Display]	Click to show/hide frames around each object in the layout screen. Frames allow you to check for overlapping items.
[Grid]	Click to show/hide the grid on the layout screen. Showing the grid makes it easier to check the position of objects.
[Zoom]	Click to change the zoom of the layout image. 100%, 150%, or 200% can be selected.
Selection palette	Select the template and the items to be printed. The selected content appears in the layout screen. If the layout screen is switched to a different layout, the edit item palette changes to the state in which [Select] is selected.
[Select]	Click to change the layout screen to selection mode.

Text and lines	<p>Details for each edit item are displayed in the specific properties.</p> <p>An edit item on the selection palette can also be clicked to display the item on the layout screen. A displayed item can be clicked to edit the item from the properties display area.</p>
[Free Text]	Click to set the text size, color, and other settings. When the layout screen is clicked, a text frame appears. A text frame can also be displayed by dragging on the layout screen.
[Text Data]	Click to edit the text data of a set item. When the layout screen is clicked, a text frame appears. A text frame can also be displayed by dragging on the layout screen.
[Line]	Click to configure line settings.
Templates	<p>Sample information and analysis parameters are arranged in sets of names and values. Frequently used combinations of edit items are pre-grouped in templates.</p> <p>Click the [New] button on the toolbar to open a dialog box for selecting the template. A template can be selected from the list that appears in the dialog box. To cancel a template, click the [Cancel Template] button on the toolbar. Table edit items cannot be canceled. The size of a template cannot be changed.</p>
[Sample Info]	Click to set the sample information template.
[Analysis items]	Click to set the analysis items template.
[Reference Interval]	Click to set the reference interval template.
[Scattergram]	Click to set the scattergram template.
[Distribution]	Click to set the distribution template.
[IP Message]	Click to set the IP message template.
[Q-Flag]	Click to set the Q-Flag template (report format only).
Layout screen	<p>The layout screen shows the print image.</p> <p>The selected edit items and template appear in the layout.</p> <p>The layout area is 196 x 259 mm. The print size is A4 (210 x 297 mm).</p> <p>A dummy image will appear in the layout screen.</p>
Tab	The print format is changed using the tabs. Click a tab to select the print format.
[Report Format]	<p>Click to select a report format.</p> <p>Sample information and reportable parameters are printed. Only validated data can be printed.</p>
[Lab Format]	<p>Click to select a lab format.</p> <p>Sample information, reportable parameters, and research parameters are printed. Samples that have not been validated can also be printed.</p> <p>Printed with "Lab. Only" on a gray background.</p>

Properties	The properties of the edit item that is selected in the layout screen are displayed. Details can be set for each item. When an edit item is not selected in the layout screen, the properties do not appear.
[Common Property]	Detailed information common to all edit items is displayed. The position of the X and Y coordinates is displayed based on the point at the top left of the item.
[Name]	Displays the edit item name. Immediately after an item is selected for editing, the default name ("Item" + "Serial number") appears. This name can be changed. Up to 32 characters can be entered. Double-byte characters cannot be entered.
[X]	The X coordinate of the item (excluding lines) is shown in the layout screen. This can be entered within the range 0 to 555 pt.
[Y]	The Y coordinate of the item (excluding lines) is shown in the layout screen. This can be entered within the range 0 to 733 pt.
[Width]	The width of the edit item (excluding lines) is shown. This can be entered within a range up to 556 pt. The lower limit of the range varies depending on the object.
[Height]	The height of the edit item (excluding lines) is shown. This can be entered within a range up to 734 pt. The lower limit of the range varies depending on the object.
[X1]	Shown only if [Line] is selected on the selection palette. The X coordinate of the start point of the edit item (line) is shown on the layout screen. This can be entered within the range 0 to 555 pt.
[Y1]	Shown only if [Line] is selected on the selection palette. The Y coordinate of the start point of the edit item (line) is shown on the layout screen. This can be entered within the range 0 to 733 pt.
[X2]	Shown only if [Line] is selected on the selection palette. The X coordinate of the end point of the edit item (line) is shown on the layout screen. This can be entered within the range 0 to 555 pt.
[Y2]	Shown only if [Line] is selected on the selection palette. The Y coordinate of the end point of the edit item (line) is shown on the layout screen. This can be entered within the range 0 to 733 pt.
Specific properties	Specific details are shown for each edit item. The settings can be changed by selecting items and entering numerical values. For details, see the following. (►P.244 "● List of specific property edit items")

● List of specific property edit items

Selection items and templates on layout screen	Edit item	Description
Optional text string ([Free Text])	[Text]	Displays the text string. The text string can be entered and edited.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
	[Align]	The text alignment can be selected.

Selection items and templates on layout screen	Edit item	Description
Item names, data, marks, units ([Text Data])	[Field ID]	Type selection: [Item Name], [Data], [Mark], [Unit], and [Reference interval] can be selected. Item selection: Shows selection items by type. The items that can be selected vary depending on whether the format is report or lab.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
	[Align]	The text alignment can be selected.
Optional image ([Image])	[File Name]	Shows the image file path. Click the [...] button to select an image.
	[Fix Aspect Ratio]	Click this checkbox to fix the aspect ratio of the image.
	[Width Ratio]	The image width can be set as a percentage. When [Fix Aspect Ratio] is ON, the value is linked to the [Height Ratio] value.
	[Height Ratio]	The image height can be set as a percentage. When [Fix Aspect Ratio] is ON, the value is linked to the [Width Ratio] value.
Image of scattergram or distribution ([Image Field])	[Field ID]	Type selection: [Scattergram] or [Distribution] can be selected. Item selection: Shows selection items by type. The items that can be selected vary depending on whether the format is report or lab.
	[Width Ratio]	The image width can be set as a percentage. Links to the [Height Ratio] value.
	[Height Ratio]	The image height can be set as a percentage. Links to the [Width Ratio] value.
Line ([Line])	[LineStyle]	The line style can be selected.
	[LineWidth]	The line width can be selected.
Table ([Table])	[LineStyle]	The table line style can be selected.
	[LineWidth]	The table line width can be selected.
	[Rows]	The number of rows in the table can be set.
	[Cols]	The number of columns can be entered.
	[MarginX]	The left and right margin of text in table cells can be set.
	[MarginY]	The margin above and below text in table cells can be set.
Table cell ([Table Cell])	[Text]	Shows the text string in the cell. The text string can be entered and edited.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
	[Align]	The text alignment can be selected.

Selection items and templates on layout screen	Edit item	Description
Sample information template	[Item Name]	Sample information can be selected.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
Analysis item template	[Item Name]	An analysis item can be selected.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
Scattergram template	[Item Name]	A scattergram can be selected.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
Distribution template	[Item Name]	A distribution can be selected.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
IP message template	[Item Name]	An IP message can be selected.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
Reference interval template	[Item Name]	An analysis item that allows selection of a reference interval can be selected.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.
Q-Flag template	[Item Name]	A suspect message can be selected.
	[Font]	The font can be selected.
	[Font Size]	The text size can be entered and edited.
	[Color]	Shows the current text color. Click [Select] to open the color selection dialog box and change the text color.

● Saving a layout (backup)

The print layout that currently appears in the layout screen can be saved.
Follow the steps below to save a layout.

1 Click the [Backup] button on the toolbar.

The [Save As] dialog box appears.

2 Specify the folder to save to, or create a new folder.

3 Enter the file name.

The file extension is ".gpf".



Note:

The default file name is as follows.
[Instrument ID][Software version].gpf

4 Click [Save].

The layout is saved.

● Restoring a layout (restore)

A saved print layout can be restored.
Follow the steps below to restore a layout.

1 Click the [Restore] button on the toolbar.

The [Open] dialog box appears.

2 Select the name of the file you want to restore.

The file extension is ".gpf".

3 Click [Open].

The layout selected for the layout screen is displayed.

● Display screen and restorable layouts

The layouts that can be restored depend on the displayed screen. For details, see the following. The background image of the lab format will not be restored.

Files to be restored	Screens displayed	
	For report use	For lab use
For report use	✓	✓
For lab use	–	✓

● Initializing a layout

An edited layout can be initialized.

Follow the steps below to initialize a layout.

1 Click [File] - [Initialize Layout] on the menu bar.

An initialization confirmation dialog box appears.

2 Click [Yes].

The layout screen is initialized.

7.11 Rule settings

Rules can only be displayed and set by the [admin] (instrument administrator) registered at the factory. Rules can be set to judge analysis data. Judgment results can be checked in the [Sample Explorer] screen and [Data Browser] screen.



Information

If you want to change, register, delete, or copy rules, contact your Sysmex service representative.



Note:

The rules are not applied to the results of analysis for maintenance (QC), analysis of sample number "0", and analysis that resulted in a barcode reader read error.

7.11.1 Types of rules

The XN-L series has the rules below.

Rules	XN-550	XN-450 XN-350	Overview
Repeat rule	✓	–	Repeat analysis is performed based on the rule judgment of the analysis results.
Rerun/Reflex/ Comment rule*	✓	–	Rerun analysis or Reflex analysis is performed and a comment is added based on the rule judgment of the analysis results.
Comment rule*	–	✓	A comment is added based on the rule judgment of the analysis results.
Validation rule*	✓	✓	Validation is performed based on the rule judgment of the analysis results.
Output rule*	✓	✓	Output is performed based on the rule judgment of the analysis results.

* Up to 100 rules can be set.

● Analysis

Repeat analysis: Repeats the first analysis.

Rerun analysis: Repeats analysis of the sample while holding the results of the first analysis.

Reflex analysis: Tests additional parameters due to the results of the first analysis.

● Repeat rules

[Repeat] means to repeat the analysis if an error occurs in the first analysis.

If an error occurs in the first analysis, Repeat analysis is performed automatically. Repeat rule is set for each error message. The setting can be checked in the [Repeat Rule] tab on the [Rule] screen.

(▶P.253 "● [Repeat Rule] tab")

The Repeat rule judgment is only performed when [Repeat Setting] is ON. For details, see the following.

(▶P.230 "7.8.10 Repeat settings (XN-550)")

Example:	Error message:	[0.06 MPa pressure error]
	Action:	[Repeat]
	Meaning:	If a [0.06 MPa pressure error] occurs, Repeat analysis is automatically performed.

For the list of error messages, refer to "Troubleshooting".

(►Troubleshooting, "Chapter 1: 1.1 Error message list (in alphabetical order)")

* The error messages below are [BlockRepeat (Fixed)], and are not displayed in the [Repeat Rule] tab.

- [Pressure Sensor Error]
- [Vacuum Sensor Error]
- [Reagent heater thermistor error]
- [Environment temperature thermistor error]
- [FCM reaction chamber thermistor error]
- [FCM sheath thermistor error]
- [Insufficient blood volume (short sample)]
- [Blood cannot be aspirated.]

● Rerun/Reflex/Comment rules

The results of the first analysis are judged, and Rerun analysis, Reflex analysis, or addition of a comment is automatically performed. The judgment conditions for Rerun analysis, Reflex analysis, and comments can be set. Rerun/Reflex/Comment rules do not function if an error occurs in the first analysis.

Rerun/Reflex/Comment rule judgment is only performed when [Rerun/Reflex Setting] is ON. For details, see the following.

(►P.230 "7.8.11 Rerun/Reflex settings (XN-550)")

● Rerun

[Rerun] is used to judge the analysis results and automatically rerun the test.

The results of the first analysis are judged, and Rerun analysis is automatically performed. Set the judgment conditions for performing Rerun analysis.

Example:	Conditional expression:	[IPMessage] ([RBC Abn Distribution]) [OR] [IPMessage] ([Dimorphic Population])
	Action:	[Rerun] ([SameModule])
	Meaning:	If the judgment results in the IP message [RBC Abn Distribution] (abnormal red blood cell distribution) or [Dimorphic Population] (double-peak red blood cell distribution), Rerun analysis is automatically performed.

● Reflex

[Reflex] is used to judge analysis results and automatically perform analysis with additional discrete items not analyzed in the initial analysis.

The results of the first analysis are judged, and Reflex analysis is performed on parameters that were not analyzed in the initial test. Set the judgment conditions for performing Reflex analysis of the initial analysis.

Example:	Conditional expression:	[IPMessage] ([PLT Abn Distribution])
	Action:	[Reflex] ([DIFF+RET])
	Meaning:	If the judgment results in the IP message [PLT Abn Distribution] (abnormal platelet distribution), Reflex analysis is automatically performed on the discrete parameters [DIFF+RET].

● Comment

The comment setting is used to judge the analysis results and automatically displays a comment. If [None] is selected for the action, a conditional expression that only sets a comment can be set.

Example: Conditional [ItemValue] (HGB [***.* g/dL]) < 8.0
 expression:
 Action: [None]
 Comment: "Contact doctor"
 Meaning: When HGB is <8.0 g/dL, "Contact doctor" appears in the comment column.

● Comment rules

The comment setting is used to judge the analysis results and automatically displays a comment. If [None] is selected for the action, a conditional expression that only sets a comment can be set.

Example: Conditional [ItemValue] (HGB [***.* g/dL]) < 8.0
 expression:
 Comment: "Contact doctor"
 Meaning: When HGB is <8.0 g/dL, "Contact doctor" appears in the comment column.

● Validation rules

To validate means to approve the output of the analysis data for reporting. Set the validation rules with the judgment conditions for automatically performing validation.

Analysis results that have been already judged by the Repeat rule or the Rerun/Reflex/Comment rule are judged, and validation is automatically performed.

Example: Conditional [ResultFlag] ([Negative])
 expression:
 Action: [Validate]
 Meaning: If the flag judgment result was [Negative], validation of the analysis results is performed automatically.

● Output rules

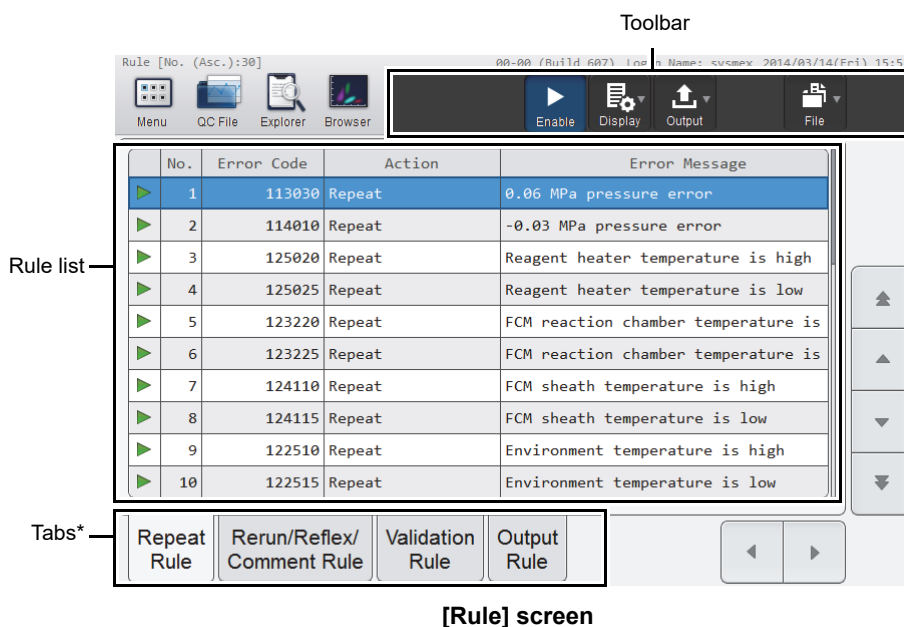
Set the output rule with the judgment conditions for automatically outputting analysis results.

Analysis results that have been validated are judged and automatically output. The output destination can also be set.

Example: Conditional [ResultFlag] ([Negative])
 expression:
 Action: [ReportTo] ([HC])
 Meaning: If the Positive/Negative judgment is [Negative], the analysis data is automatically output to the host computer.

7.11.2 [Rule] screen

Touch the [Rule] icon in the [Menu] screen to display the screen below.



[Rule] screen

* The tabs that appear vary depending on the instrument that is used.

Toolbar	Displays the function buttons.
[Enable]^{*1, 2}	Touch to enable the selected rule(s) in the rule list. If a rule was already enabled, touching [Enable] disables the rule.
[Display]	Touch to open a dialog box for sorting rules in the [Rule] screen.
[Output]	Touch to open a submenu for printing the rules in ledger format.
[File]	Touch to open a submenu for saving, restoring, or initializing rules. [Backup]: Use to back up the rules. (▶P.259 "7.11.6 Saving rules (backup)") [Restore]: Use to restore backed up rules. (▶P.260 "7.11.7 Restoring saved rules (restore)") [Initialize]: Use to initialize rules that have been set. (▶P.262 "7.11.8 Initializing rules")
Rule list	Displays a list of the rules. For details, see the following. (▶P.253 "● [Repeat Rule] tab") (▶P.254 "● [Rerun/Reflex/Comment Rule] tab") (▶P.255 "● [Comment Rule] tab") (▶P.256 "● [Validation Rule] tab") (▶P.257 "● [Output Rule] tab")
Tab	Touch to change the items displayed in the rule list.

*1 When Repeat rule is [BlockRepeat (Fixed)], the settings cannot be changed.

*2 Only when the rule is valid.

● [Repeat Rule] tab

Touch the [Repeat Rule] tab to display the screen below*.

* Errors that do not occur due to the instrument configuration are not displayed.

Rule setting area

	No.	Error Code	Action	Error Message
<input checked="" type="checkbox"/>	1	113030	Repeat	0.06 MPa pressure error
<input checked="" type="checkbox"/>	2	114010	Repeat	-0.03 MPa pressure error
<input checked="" type="checkbox"/>	3	125020	Repeat	Reagent heater temperature is high
<input checked="" type="checkbox"/>	4	125025	Repeat	Reagent heater temperature is low
<input checked="" type="checkbox"/>	5	123220	Repeat	FCM reaction chamber temperature is
<input checked="" type="checkbox"/>	6	123225	Repeat	FCM reaction chamber temperature is
<input checked="" type="checkbox"/>	7	124110	Repeat	FCM sheath temperature is high
<input checked="" type="checkbox"/>	8	124115	Repeat	FCM sheath temperature is low
<input checked="" type="checkbox"/>	9	122510	Repeat	Environment temperature is high
<input checked="" type="checkbox"/>	10	122515	Repeat	Environment temperature is low

Repeat Rule Rerun/Reflex/Comment Rule Validation Rule Output Rule

[Rule] screen ([Repeat Rule] tab)

Rule setting area	Displays whether the rule is ON (<input checked="" type="checkbox"/>) or OFF (<input type="checkbox"/>)
[No.]	Displays the unique number assigned to the error for which the Repeat rule is applied.
[Error Code]	Displays the error code.
[Action]	Displays the following actions.
[None]	Repeat analysis is not performed.
[BlockRepeat]	Repeat analysis is not performed. Even if other errors occur that have [Repeat] set for the action, if an error occurs that has [BlockRepeat] set, [BlockRepeat] is given priority. [BlockRepeat] disables the Repeat rule. It does not disable Rerun analysis or Reflex analysis.
[Repeat]	Repeat analysis is performed.
[BlockRepeat (Fixed)]	Displayed when the action is fixed at [BlockRepeat].
[Error Message]	An error message appears.
[Update Date]	Displays the date and time the rule was registered or last modified.

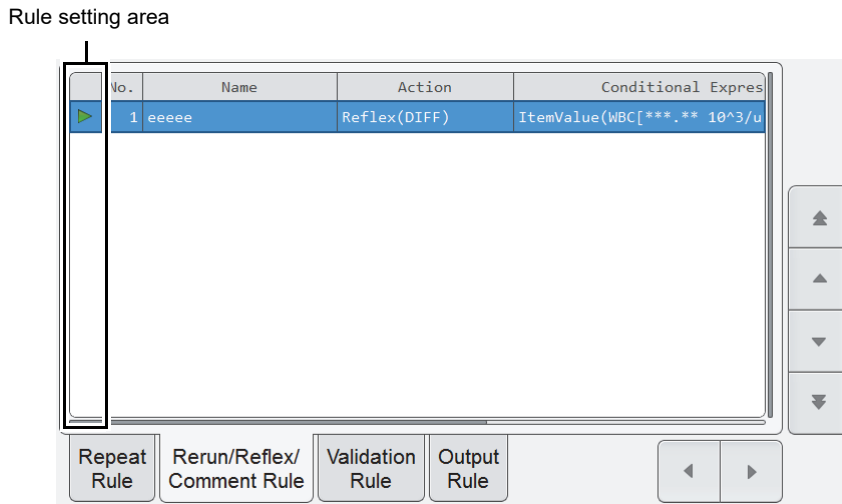


Note:

The Repeat rule is applied when an error occurs in the results of the first analysis, and when an error occurs in the results of Rerun analysis or Reflex analysis. Repeat analysis is not possible for some errors.

● [Rerun/Reflex/Comment Rule] tab

Touch the [Rerun/Reflex/Comment Rule] tab to display the screen below.



[Rule] screen ([Rerun/Reflex/Comment Rule] tab)

Rule setting area	Displays whether the rule is ON ([▶]), OFF ([□]), or invalid ([✕]).
[No.]	Displays the rule number. If a number greater than "100" (the maximum number that can be registered) is entered, the number is displayed in red.
[Name]	Displays the name of the rule. If not entered, nothing appears.
[Action]	Displays the following actions.
[None]	Rerun analysis and Reflex analysis are not performed.
[BlockRerunReflex]	Rerun analysis and Reflex analysis are not performed. Even if there are other conditions with [Rerun] or [Reflex] set for the action that are satisfied, if a condition with [BlockRerunReflex] set is satisfied, [BlockRerunReflex] is given priority.
[Rerun]	Rerun analysis is performed.
[Reflex]	Reflex analysis is performed. The discrete item of the added channel appears in the parentheses. Even when the judgment is [Reflex], if the analysis items belong to the discretetes to be added and all channels were analyzed in the initial analysis, Reflex analysis will not be performed.
[QueryToHost]*	The host computer is queried to determine if Rerun analysis and Reflex analysis are necessary.
[Conditional Expression]	Displays the conditional expression for Rerun analysis, Reflex analysis, or addition of a comment.
[Action Comment]	Displays the comment to be added to the analysis data. Nothing appears if no comments have been entered. The display color varies as follows depending on the importance of the comment.
[Low]	Appears in black characters on a white background.
[Medium]	Appears in black characters on an orange background.
[High]	Appears in white characters on a red background.
[Update Date]	Displays the date and time the rule was registered or last modified.
[Description]	Displays a description of the rule. If not entered, nothing appears.

* Only appears when service settings are being configured.

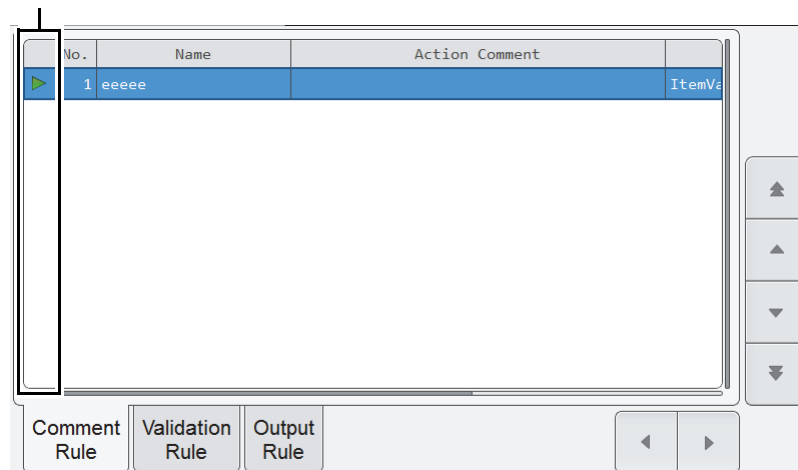
**Note:**

The results of [Rerun] analysis or [Reflex] analysis cannot be consolidated with or compared to the results of the first analysis.

● [Comment Rule] tab

Touch the [Comment Rule] tab to display the screen below.

Rule setting area

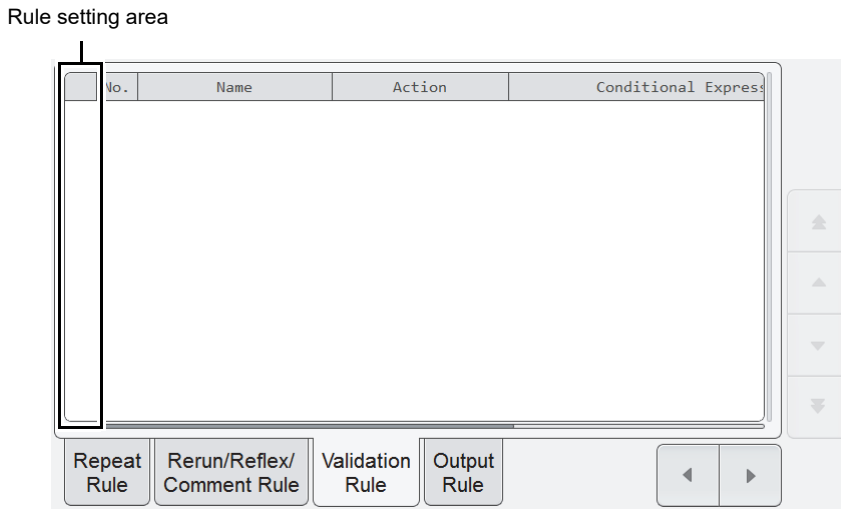


[Rule] screen ([Comment Rule] tab)

Rule setting area	Displays whether the rule is ON ([▶]), OFF ([□]), or invalid ([✕]).
[No.]	Displays the rule number. If a number greater than "100" (the maximum number that can be registered) is entered, the number is displayed in red.
[Name]	Displays the name of the rule. If not entered, nothing appears.
[Action Comment]	Displays the comment to be added to the analysis data. Nothing appears if no comments have been entered. The display color varies as follows depending on the importance of the comment.
[Low]	Appears in black characters on a white background.
[Medium]	Appears in black characters on an orange background.
[High]	Appears in white characters on a red background.
[Conditional Expression]	Displays the conditional expression for addition of a comment.
[Update Date]	Displays the date and time the rule was registered or last modified.
[Description]	Displays a description of the rule. If not entered, nothing appears.

● **[Validation Rule] tab**

Touch the [Validation Rule] tab to display the screen below.



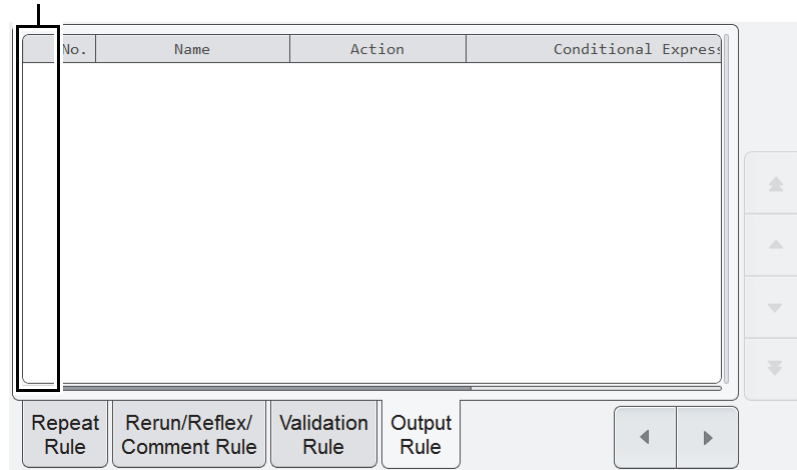
[Rule] screen ([Validation Rule] tab)

Rule setting area	Displays whether the rule is ON ([▶]), OFF ([□]), or invalid ([✕]).
[No.]	Displays the rule number. If a number greater than "100" (the maximum number that can be registered) is entered, the number is displayed in red.
[Name]	Displays the name of the rule. If not entered, nothing appears.
[Action]	Displays the following actions.
[BlockValidate]	Validation is not performed. Even if there are other conditions with [Validate] set for the action that are satisfied, if a condition with [BlockValidate] set is satisfied, [BlockValidate] is given priority.
[Validate]	Validation is performed.
[Conditional Expression]	Displays the conditional expression that determines whether validation is performed.
[Update Date]	Displays the date and time the rule was registered or last modified.
[Description]	Displays a description of the rule. If not entered, nothing appears.

● [Output Rule] tab

Touch the [Output Rule] tab to display the screen below.

Rule setting area



[Rule] screen ([Output Rule] tab)

Rule setting area	Displays whether the rule is ON ([▶]), OFF ([□]), or invalid ([✕]).
[No.]	Displays the rule number. If a number greater than "100" (the maximum number that can be registered) is entered, the number is displayed in red.
[Name]	Displays the name of the rule. If not entered, nothing appears.
[Action]	Displays the following actions.
[BlockReport]	Data is not output. Even if there are other conditions with [ReportTo] set for the action that are satisfied, if a condition with [BlockReport] set is satisfied, [BlockReport] is given priority.
[ReportTo]	Data that has been validated is output. The output destination appears in the parentheses.
[Conditional Expression]	Displays the conditional expression for output.
[Update Date]	Displays the date and time the rule was registered or last modified.
[Description]	Displays a description of the rule. If not entered, nothing appears.

7.11.3 Enabling and disabling rules

The enable/disable setting of each rule in the [Rule] screen can be changed.
Only when the rule is valid. The setting of a rule that is fixed at [BlockRepeat] cannot be changed.
Follow the steps below to enable/disable a rule.

1 Select the rule you want to enable or disable in the rule list.

2 Touch the [Enable] button on the toolbar.

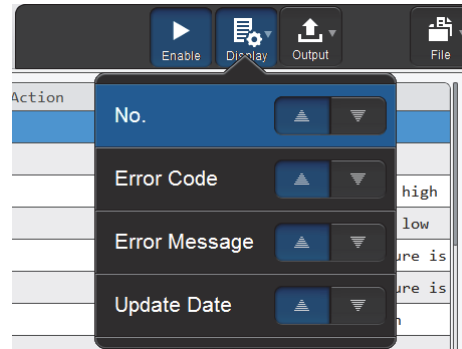
The rule is enabled or disabled.

7.11.4 Changing the display method of the rules (display settings)

You can change the sorting order of the rules.
Follow the steps below to change the display method.

1 Touch the [Display] button on the toolbar.

The submenu on the right appears.



2 Touch the desired display method.

The submenu closes and the display of the rules changes.

[No.]	Sort by rule number.
[Name] ^{*1}	Sort by rule name.
[Error Code] ^{*2}	Sort by error code.
[Error Message] ^{*2}	Sort by error message.
[Update Date]	Sort by update date.

*1 [Rerun/Reflex/Comment Rule], [Comment Rule], [Validation Rule], and [Output Rule] only.

*2 [Repeat Rule] only.

7.11.5 Printing rules

A list of registered rules can be printed.
Follow the steps below to print rules.

1 Touch the tab of the rules you want to print.

The rules appear.

2 Touch the [Output] button - [Ledger (LP)] on the toolbar.

The displayed rules are printed.

7.11.6 Saving rules (backup)

Each type of rules that have been registered can be backed up to a file on a USB memory stick.
Follow the steps below to save rules.

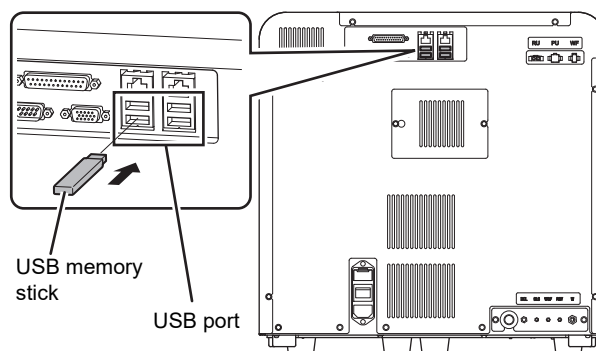


Note:

The rules should be saved during initial setting of the instrument and whenever there are updates or changes.

1 Insert the USB memory stick.

Insert the USB memory stick into a free USB port on the back of the instrument.
A USB memory stick with a password lock function cannot be used.



2 Touch the [File] button - [Backup] on the toolbar.

The backup starts and the [Waiting to complete execution] dialog box appears.
The [Waiting to complete execution] dialog box closes when the backup is complete.

3 Remove the USB memory stick.

● Backup directory and file name

When backup is executed, the information is saved using the file name below in a folder* that has the instrument ID as the folder name.

[Instrument ID][Software version][Date saved]_ [Time saved].rule

Example: [XN-XXX][00-01][20140505_080808].rule

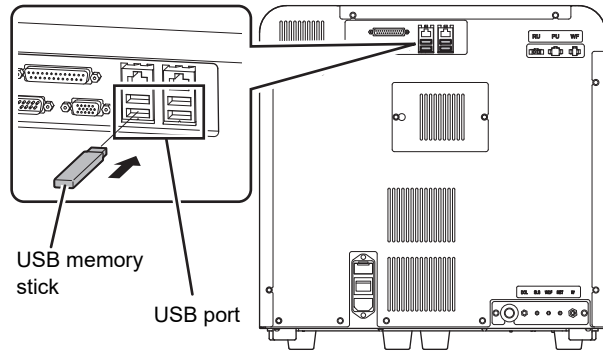
* If a folder with the instrument ID as the folder name does not exist in the USB memory stick, the folder is automatically created.

7.11.7 Restoring saved rules (restore)

Saved rules can be restored.
Follow the steps below to restore rules.

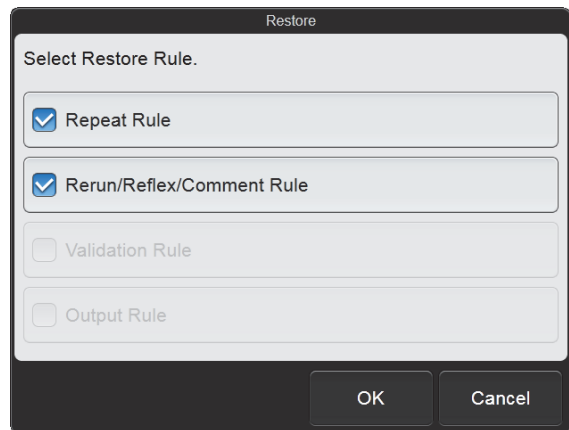
1 Insert the USB memory stick that contains the backup rule files.

Insert the USB memory stick into a free USB port on the back of the instrument.
A USB memory stick with a password lock function cannot be used.



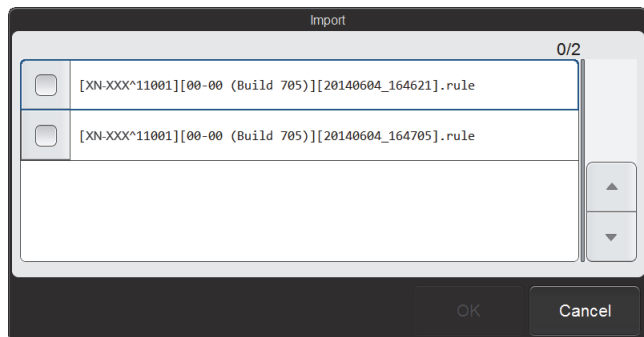
2 Touch the [File] button - [Restore] on the toolbar.

The [Restore] dialog box appears.



[Restore] dialog box (XN-550)

- When the [Import] dialog box appears
When the USB memory stick contains multiple backup rule files, the [Import] dialog box appears.



[Import] dialog box

Follow the steps below to select and restore backup files.

1 Select the checkboxes of the files you want to restore.

Files with checkmarks will be restored.

Each time you touch the checkbox, the checkbox is selected or unselected.

2 Touch [OK].

The [Restore] dialog box appears.

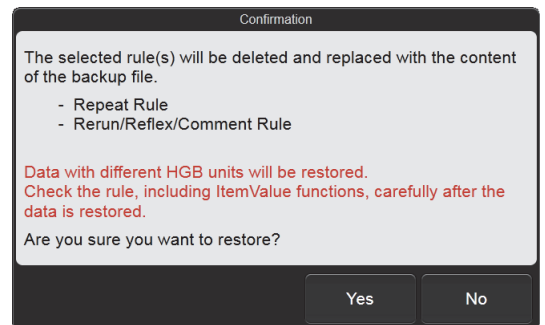
3 Select the checkboxes of the rules you want to restore.

Rules with checkmarks will be restored.

Each time you touch the checkbox, the checkbox is selected or unselected.

4 Touch [OK].

The dialog box on the right appears.



5 Touch [Yes].

The restore starts and the [Waiting to complete execution] dialog box appears.

The [Waiting to complete execution] dialog box closes when the rule restore is complete.



Note:

Rule sorting settings and simple settings are retained even when rules are restored.

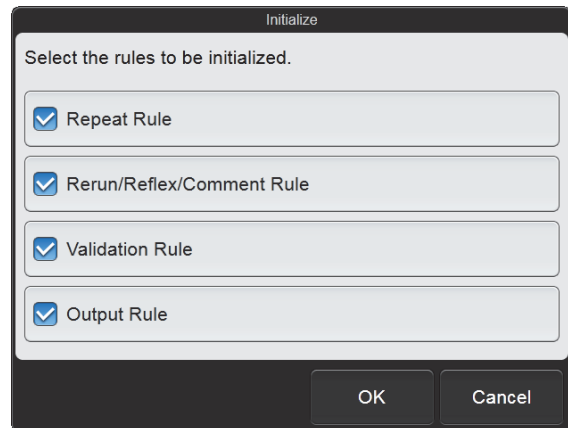
6 Remove the USB memory stick.

7.11.8 Initializing rules

Rules that have been set can be initialized.
Follow the steps below to initialize rules.

1 Touch the [File] button - [Initialize] on the toolbar.

The dialog box on the right appears.



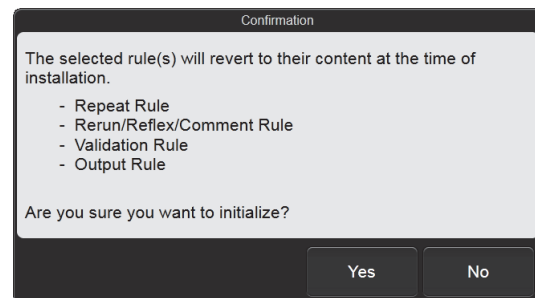
[Initialize] dialog box (XN-550)

2 Select the checkboxes of the rules you want to initialize.

Rules with checkmarks will be initialized.
Each time you touch the checkbox, the checkbox is selected or unselected.

3 Touch [OK].

The dialog box on the right appears.



4 Touch [Yes].

The rules are initialized.



Note:

Rule sorting settings and simple settings are retained even when the rules are initialized.

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