



Automated Hematology Slide Preparation Unit

SP-50

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
-
-

Sysmex Corporation

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Changes are listed below:

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Other changes:

- Improvement of text representation.

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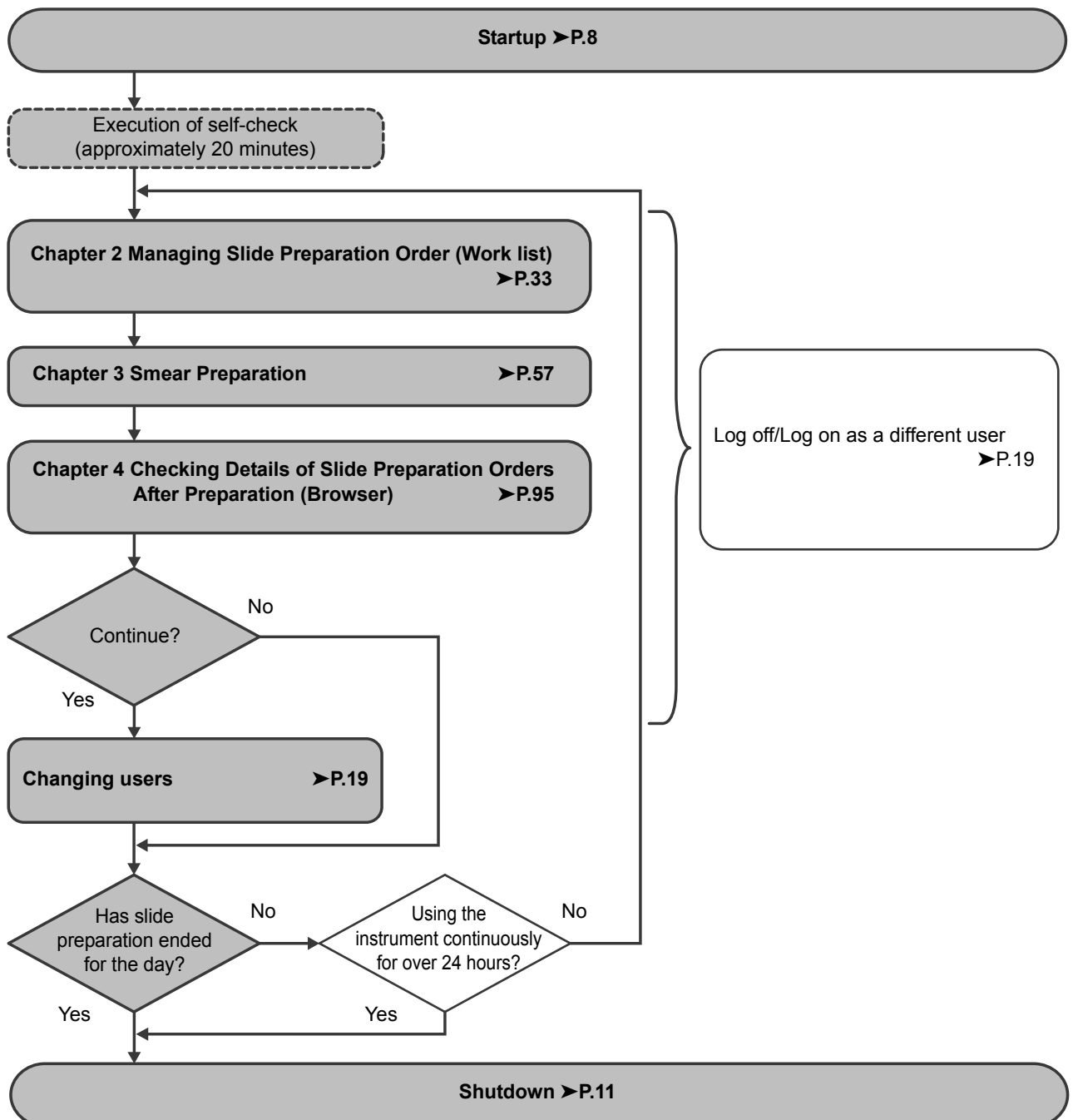
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Chapter 1 Basic Operation

1.1 Overall flow of operation

The flow chart below shows the flow of operation of the instrument. The typical flow for standalone use of the SP-50 is shown in gray.



1.2 Startup

1.2.1 Inspection prior to turning ON the power

Before turning ON the instrument's power, check the following.

- Check the connection of tubes and cables.
- Check if there are any bent tubes.
- Check if there are any objects on top of the instrument.
- If the instrument is 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 fluid tank (if applicable).

For more information on replacing the waste fluid tank, see "Troubleshooting".

(▶Troubleshooting "Chapter 2: 2.22 Replacing the waste fluid tank")

- Make sure that there are extra supplies of reagents for the number of samples to be processed on the day of preparation.

The amount of reagent used varies depending on the staining method. For details, see "General Information".

(▶General Information "Chapter 5: 5.1 Specifications")

- Make sure that a sufficient number of glass slides/magazine are loaded for the number of samples to be processed that day.

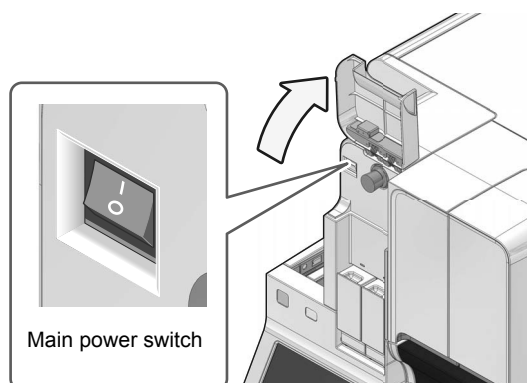
For more information on loading glass slide, see "Troubleshooting".

(▶Troubleshooting "Chapter 2: 2.5 Loading glass slides")

1.2.2 Turning ON the power

1 Make sure that the main power of the instrument and each device connected to the instrument are ON.

The main power switch of the main unit can be kept ON at all times.



Note:

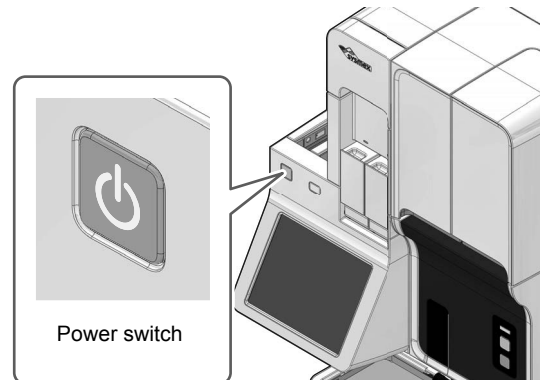
When using the CF-70, the DI-60 must be started in advance. For details, see the Instructions for Use for DI-60.

(▶DI-60 Instructions for Use "2.1 Starting the System")

2 Press the power switch.

The power to the instrument turns ON, and the main unit runs a self-check.

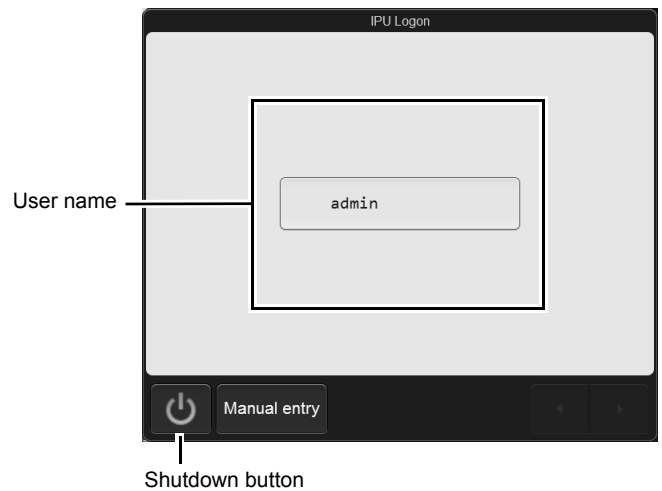
(►P.10 "1.2.3 Executing a self-check")



Note:

- When using the CF-70, the dialog box for selecting startup method appears. If you only want to start the CF-70, touch [Start CF only]. If you take no action for 15 seconds, the SP-50 and CF-70 will start automatically.
- 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] (administrator).

The factory default password for [admin] (administrator) is "m149m".

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 the following.

(►P.112 "Chapter 5: 5.4.2 User information management")

**Note:**

- If auto logon is enabled, the [IPU Logon] dialog box does not appear.
- Display of the user name varies depending on the number of users.
- When you touch the shutdown button, a confirmation dialog box appears. Touch [OK] to shutdown the instrument.
- Touch [Manual entry] to display the dialog box to directly enter characters instead of selecting a user name.
- The settings can be changed to select whether or not to use the staining pool when the instrument starts up. For details, see the following.
(▶P.149 "Chapter 5: 5.6.8 Startup method setting")
If you want to change the setting to [Enable stain pool] after you start the instrument with the [Disable stain pool] setting, touch [Enable stain pool] in [Menu] in the status area.

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

The software keyboard appears. For the software keyboard operation, see the following.

(▶P.22 "1.6 Common screen display/operation")

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].

When you first log on after purchasing the instrument, the [Menu] screen appears.

(▶P.29 "1.7.2 [Menu] screen")

For all subsequent logins after the 2nd time, the screen configured using the [Initial Screen Settings] dialog box appears.

(▶P.119 "Chapter 5: 5.4.7 Screen after startup")

**Note:**

When only the CF-70 is running, you can touch [Start SP] in the status area to start the instrument.

1.2.3 Executing a self-check

Once the instrument powers up, a self-check automatically runs to determine if there is any error in the instrument. The self-check consists of the following tasks.

● Initialization of the mechanical units

The mechanical units move to their initial positions, and initialize/check the hydraulic units.

● Rinsing of hydraulic unit

The rinsing of hydraulic units is performed.

● Replenishment of reagent

Prepare reagent as needed for your system, and replenish the reagent into the staining pool.

However, if the instrument is started with the [Disable stain pool] setting, reagent will not be added into the staining pool.

1.3 Shutdown

There are 2 types of shutdown: [Shutdown 1] and [Shutdown 2]. You can select a setting to have all pure water drained from the reserve tank (RR-20) chamber during shutdown. The functions of the instrument are shown below.

Function	Timing	Operation	Cleaning fluids position	Page
[Shutdown 1]	At the end of the routine day or after 24 hours	Rinsing of hydraulic system	Sample holder	►P.12
			Sample rack	►P.15
[Shutdown 2]	Once a month or when instrument will not be used for 1 week or more after the working day	<ul style="list-style-type: none"> Rinsing of hydraulic system Cleaning the stain chamber with methanol or ethanol 	Sample holder	►Troubleshooting "2.4.1 Performing [Shutdown 2] using the sample holder"
			Sample rack	►Troubleshooting "2.4.2 Performing [Shutdown 2] using a sample rack"
[Discharge all RR-20]*	When instrument will not be used for long-term after the working day	Draining all of the pure water in the chambers of the RR-20	—	—

* This can be used only when the instrument is connected to the RR-20.



Caution

If the [Shutdown 2] process was performed, wait at least 2 hours after the instrument has shutdown before starting it again.

The instrument may not be sufficiently clean if restarted immediately after shutdown.



Note:

- When the CF-70 is connected, the CF-70 will shutdown automatically when you shutdown the instrument.
- The day of the week on which [Shutdown 2] is executed can be set in [Shutdown 2 settings]. When the instrument is started on the set day, [Shutdown 2] will be executed automatically when shutdown takes place. If you want to change the shutdown type, touch [Shutdown] in the [Menu] screen and change the setting.

1.3.1 Pre-shutdown checks

Confirm the following before shutting the instrument down.

- Make sure that glass slide has been loaded. Replenish glass slide if not sufficiently loaded.
(▶ Troubleshooting "Chapter 2: 2.5 Loading glass slides")
- Confirm an empty magazine is loaded in the manual magazine holder. Load an empty magazine if it is not loaded.
- Make sure that there is sufficient reagent available.
See "General Information" for more information.
(▶ General Information "Chapter 5: 5.1 Specifications")
Replace or replenish reagent as necessary when insufficient.
(▶ Troubleshooting "Chapter 2: 2.6 Replacing the reagent")

1.3.2 Performing [Shutdown 1] using the sample holder

The sample holder can be used to perform a shutdown when the sampler or transportation system cannot be used due to a failure, or when the instrument is not configured to read sample barcodes.

1 Touch [Menu] on the toolbar.

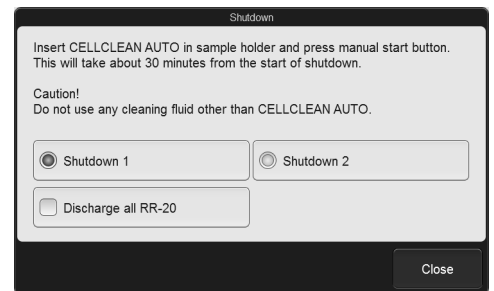
The [Menu] screen appears.



[Menu] screen

2 Touch [Shutdown].

The [Shutdown] dialog box appears, and the sample holder slides out forward.



[Shutdown] dialog box

[Shutdown 1]/[Shutdown 2] You can select the shutdown type.

[Discharge all RR-20] Displayed only when the instrument is connected to the RR-20.
Select this checkbox to drain all of the pure water in chambers of the RR-20.



Note:

[Shutdown 2] is selected in the following cases.

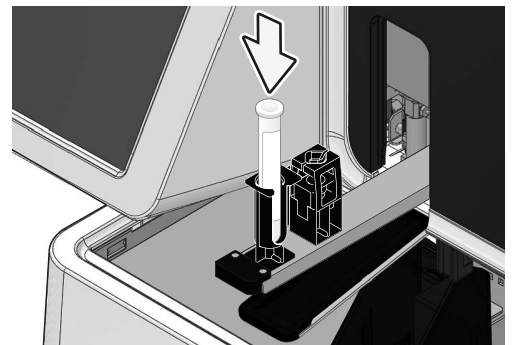
- The instrument was started on the day of the week set in [Shutdown 2 settings]
- More than 40 days has elapsed since the last time [Shutdown 2] was performed

3 If [Shutdown 2] is selected, touch [Shutdown 1].

This step is not necessary if [Shutdown 1] is selected. Go to the step 4.

4 Set CELLCLEAN AUTO in the sample holder.

Set the CELLCLEAN AUTO in the regular sample tube holder, which is at the main unit front side.



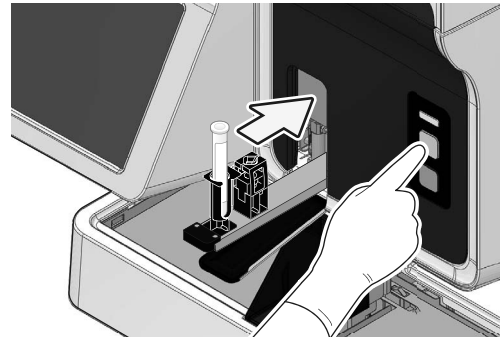
Caution

- Use 1 vial of CELLCLEAN AUTO for each instrument. Do not reuse CELLCLEAN AUTO that has already been used.
- During shutdown, other sample tubes are not accepted.

5 Press the start switch on the main unit front side.

The [Shutdown] dialog box closes, and the sample holder retracts into the instrument.

If a sample is being prepared, the instrument will enter the shutdown ready state. When all operations are finished, CELLCLEAN AUTO aspiration starts.



- If you want to cancel shutdown

Shutdown can be canceled while the instrument is in the shutdown ready state.

1 Touch [Scheduled shutdown] in the status area.

The confirmation dialog box appears.

2 Touch [Yes].

The dialog box closes and shutdown will be canceled.

6 Shutdown is automatically performed.

The sample holder will be ejected forward once the CELLCLEAN AUTO aspiration finishes. Remove and discard CELLCLEAN AUTO tube once the sample holder ejects the empty tube.

When all operations are finished, the sample holder automatically retracts into the main unit, and the instrument power turns OFF.

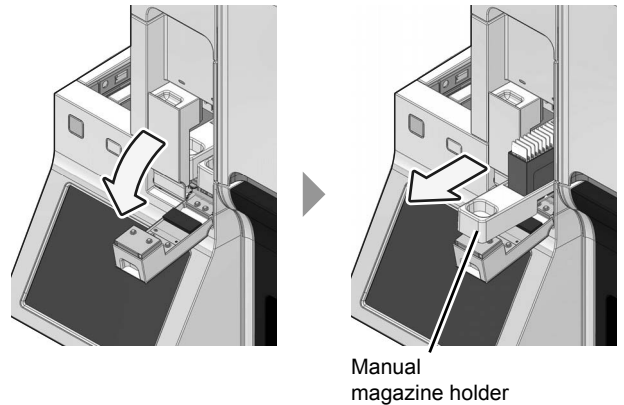


Note:

If the CELLCLEAN AUTO is not removed before shutdown finishes, a notification that a sample tube remains in the sample holder will appear at the next startup.

7 Remove the glass slide used for cleaning.

The cleaned glass slide will be stored in the magazine in the manual magazine holder.
Remove the magazine used for cleaning from the manual magazine holder.



Caution

When removing the magazine, do not grab the glass slide. Remove the magazine one by one, and take care not to drop the glass slides.
Otherwise the glass slides may break up and cause injury.

1.3.3 Performing [Shutdown 1] using a sample rack

A sample rack can be used to perform a shutdown. If a sample rack with a sample that is undergoing sampler preparation is in the right pool, shutdown can be performed after sampler preparation.



Caution

Instrument must be setup to read sample barcodes before performing shutdown using sample rack. For details, see the following.
(►P.144 "Chapter 5: 5.6.3 Barcode reader setting")



Note:

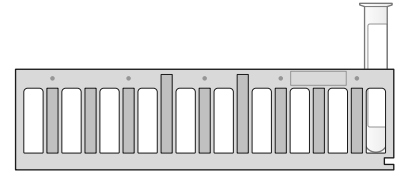
[Shutdown 2] is selected in the following cases.

- The instrument was started on the day of the week set in [Shutdown 2 settings]
- More than 40 days has elapsed since the last time [Shutdown 2] was performed

1 Place CELLCLEAN AUTO in the sample rack.

Place CELLCLEAN AUTO in position 10 of the sample rack.

1 2 3 4 5 6 7 8 9 10

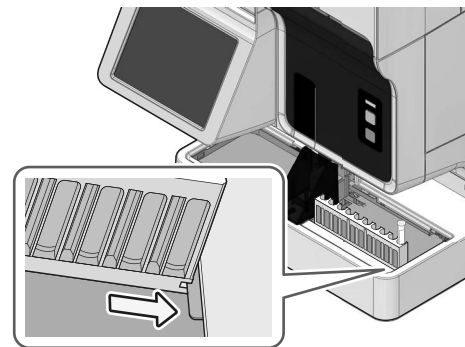


Caution

- Use 1 vial of CELLCLEAN AUTO for each instrument. Do not reuse CELLCLEAN AUTO that has already been used.
- Do not mix normal samples together with CELLCLEAN AUTO.

2 Place the sample rack in the right sampler pool.

Align the groove in the sample rack onto the raised portion on the right side as viewed when facing the instrument.



● When the sampler is in operation

Next after the sample rack with sample tubes, set the sample rack containing CELLCLEAN AUTO at the very front of the right sampler pool.

Once the CELLCLEAN AUTO barcode is read, the instrument enters the shutdown ready state.

- When the sampler is stopped

1 Touch [Sampler] in the status area.

A dialog box appears.

2 Touch [OK].

The dialog box closes, and the sample rack transportation starts.

When the CELLCLEAN AUTO barcode is read, the instrument will enter the shutdown ready state if a sample is being prepared.

**Information**

The sample preparation process will not be performed for any sample racks containing sample tubes loaded after the sample rack containing CELLCLEAN AUTO.

- If you want to cancel shutdown

Shutdown can be canceled while the instrument is in the shutdown ready state.

1 Touch [Scheduled shutdown] in the status area.

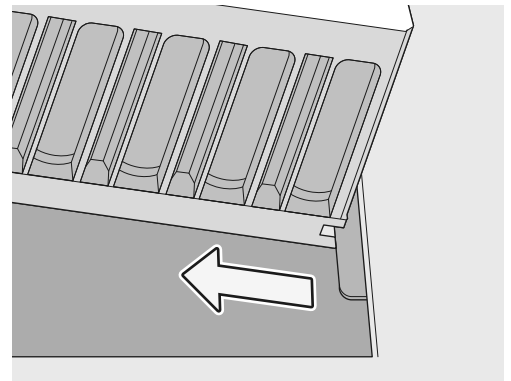
The confirmation dialog box appears.

2 Touch [Yes].

The dialog box closes and shutdown will be canceled.

3 Remove the sample rack whose CELLCLEAN AUTO has been aspirated.

The finished sample racks are transported to the left sampler pool. When removing the sample rack, check that the protrusion has cleared the groove, and then remove the sample rack.

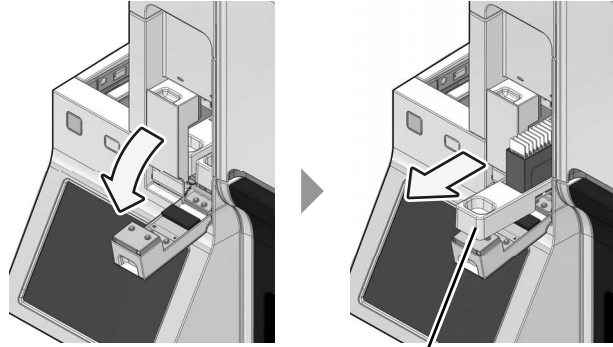


4 Shutdown is automatically performed.

When all operations are finished, CELLCLEAN AUTO aspiration starts.

5 Remove the glass slide used for cleaning.

The cleaned glass slide will be stored in the magazine in the manual magazine holder. Remove the magazine used for cleaning from the manual magazine holder.



Manual magazine holder



Caution

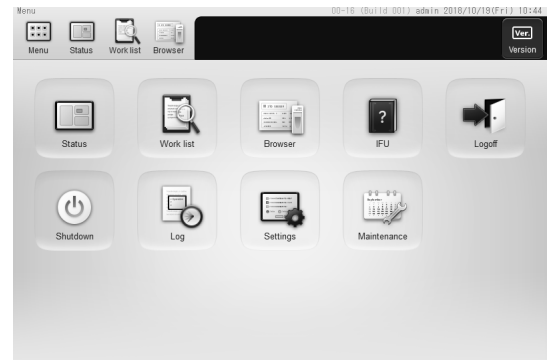
When removing the magazine, do not grab the glass slide. Remove the magazine one by one, and take care not to drop the glass slides. Otherwise the glass slides may break up and cause injury.

1.4 Logging off

To change the logged on user, log off and then reselect the user.

1 Touch [Menu] on the toolbar.

The [Menu] screen appears.



[Menu] screen

2 Touch [Logoff].

The confirmation dialog box appears.

3 Touch [OK].

The user is logged off.

After the logoff, the [IPU Logon] dialog box appears. (►P.8 "1.2.2 Turning ON the power")

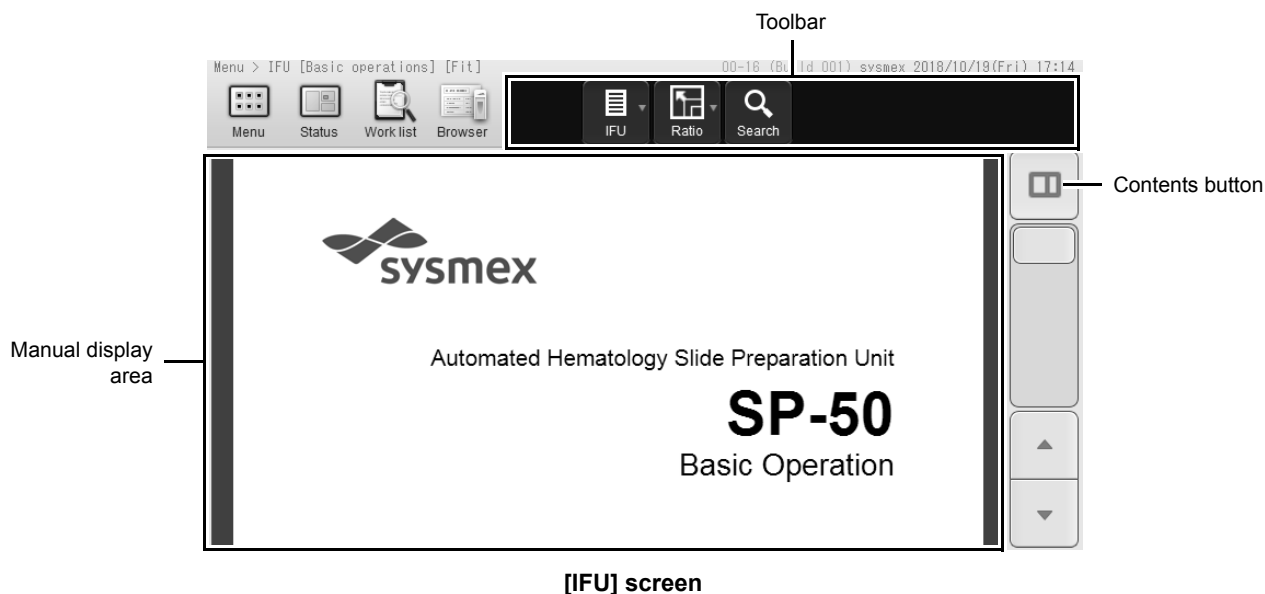


Note:

When the instrument is in operation, log-off cannot be executed.

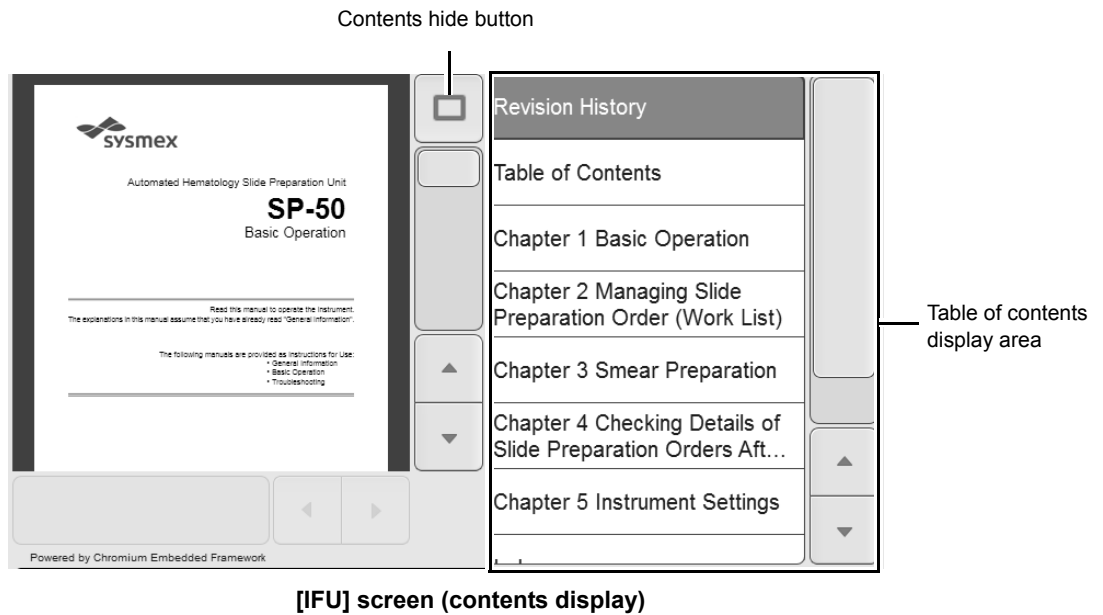
1.5 Viewing the online manuals

To enable quick access to information, the online manuals can be viewed.
 Touch [IFU] in the [Menu] screen to display the [IFU] screen.



Toolbar	Displays buttons for each function.
[IFU]	Touch to display a submenu, which allows you to select other manuals. The type of the manual currently displayed appears next to the screen name in the upper left corner of the screen.
[Ratio]	Touch to display a sub-menu that lets you change the zoom for viewing a manual. [Fit]: Fit the page width to the width of the manual display area. [150%]: Show the manual at a zoom of 150%. [100%]: Show the manual at a zoom of 100%. [75%]: Show the manual at a zoom of 75%. [50%]: Show 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.
[Search]	Touch to display a dialog box that lets you search for a word or phrase in the manual.
Manual display area	Displays the manual.
Contents button	Touch to display the table of contents display area. (▶P.21 "●Displaying the manual's table of contents")

● Displaying the manual's table of contents









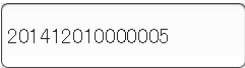
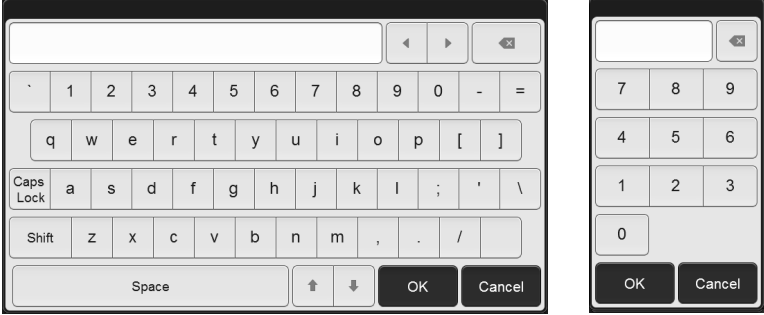




Contents hide button	Touch to hide the contents display area.
Table of contents display area	Displays the contents of the displayed manual. Touch a title to display the corresponding page of the manual.

1.6 Common screen display/operation

1.6.1 Buttons common to multiple screens

Several screens of the instrument have the same buttons.

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*. 

Button	Function
	Touch and drag the slider horizontally to adjust values. Values can also be adjusted by touching [-] or [+]. Press and hold a particular position to move the slider to that position.
	Touch and drag the slider vertically or horizontally to move the screen display vertically or horizontally. Press and hold a particular position to move the slider to that position.

* The decimal point symbol set in Windows is used for the decimal point. The only decimal point symbols that can be displayed are "." (period) and "," (comma).


1.6.2 Selecting multiple items (mark mode)

To perform [Delete]/[Output]/[Reorder] in the [Work list] screen, you can select multiple items in the list. The mode in which multiple items can be selected is called mark mode.

1 Touch [Work list] in the [Menu] screen.

Or touch [Work list] on the toolbar.
The [Work list] screen appears.

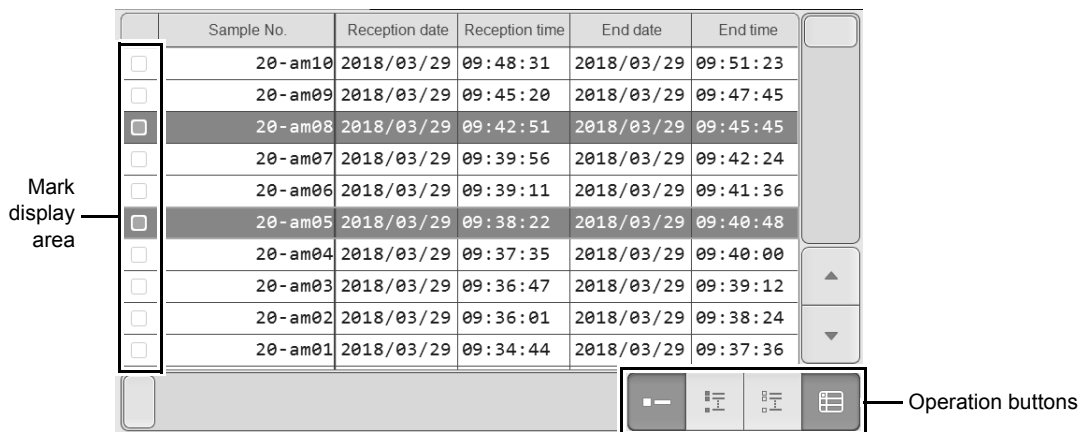
Sample No.	Reception date	Reception time	End date	End time	
20-am10	2018/03/29	09:48:31	2018/03/29	09:51:23	Pre
20-am09	2018/03/29	09:45:20	2018/03/29	09:47:45	Pre
20-am08	2018/03/29	09:42:51	2018/03/29	09:45:45	Pre
20-am07	2018/03/29	09:39:56	2018/03/29	09:42:24	Pre
20-am06	2018/03/29	09:39:11	2018/03/29	09:41:36	Pre
20-am05	2018/03/29	09:38:22	2018/03/29	09:40:48	Pre
20-am04	2018/03/29	09:37:35	2018/03/29	09:40:00	Pre
20-am03	2018/03/29	09:36:47	2018/03/29	09:39:12	Pre
20-am02	2018/03/29	09:36:01	2018/03/29	09:38:24	Pre
20-am01	2018/03/29	09:34:44	2018/03/29	09:37:36	Pre

 Mark mode button

[Work list] screen (Regular display)

2 Touch the mark mode button.

The [Work list] screen is switched to mark mode.



[Work list] screen (Mark mode display)

Mark display area Items that are marked (orange) will be the target of the operation.

Operation buttons



Touch to add a mark to/clear the mark from the selected item*.
The cursor moves to the next item.



Touch to add a mark to all items.



Touch to clear the marks from all items.



Touch to exit mark mode and return the screen to the regular display. All of the marks are cleared.

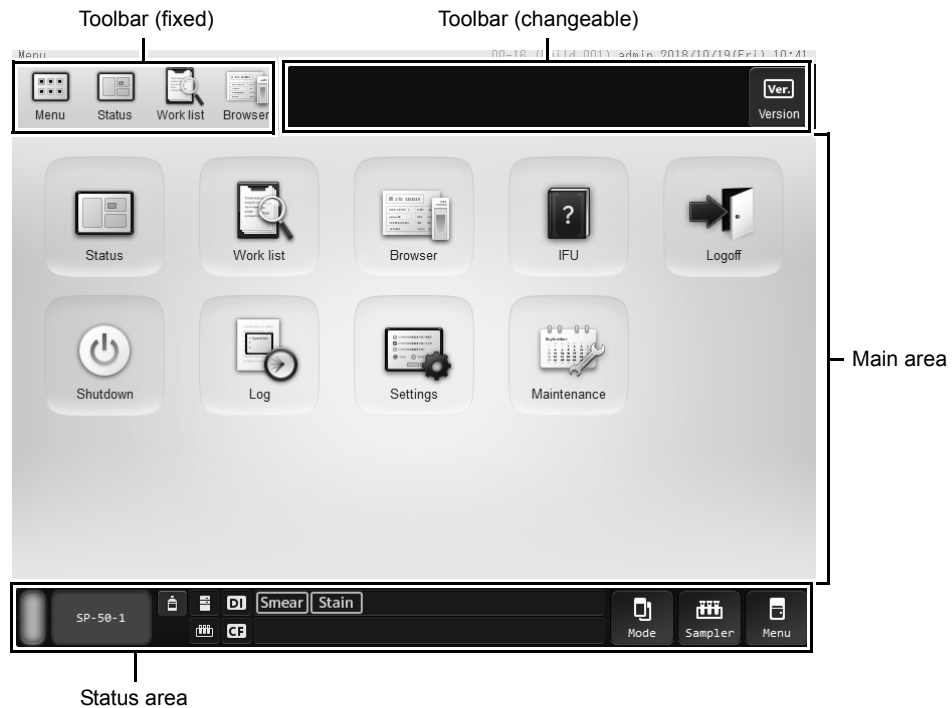
* The same operation can be performed by directly touching the mark display area.

3 Touch to add a mark to the items that you want to select in the mark display area.

The items with marks added are selected.

1.7 Main screen

The main screen layout of the instrument is as follows.

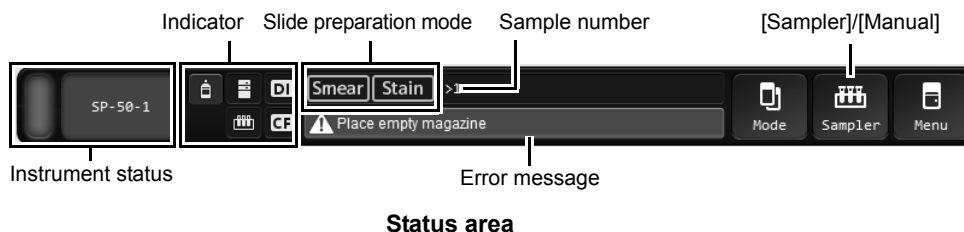


e.g. [Menu] screen

Toolbar (fixed)	The following frequently-used function buttons are displayed:
[Menu]	Touch to display the [Menu] screen. (▶P.29 "1.7.2 [Menu] screen")
[Status]	Touch to display the [Status] screen. (▶P.88 "Chapter 3: 3.7 [Status] screen")
[Work list]	Touch to display the [Work list] screen. (▶P.48 "Chapter 2: 2.7 [Work list] screen")
[Browser]	Touch to display the [Browser] screen. (▶P.97 "Chapter 4: 4.3 [Browser] screen")
Toolbar (changeable)	Displays the buttons that are used in the displayed screen.
Main area	Various operations are performed and slide preparation orders are displayed in this area. In the initial status, the [Menu] screen is displayed.
Status area	Displays the status of the instrument. In addition, you can perform operations, such as slide preparation and maintenance. (▶P.26 "1.7.1 Status area")

1.7.1 Status area

The status area layout is as follows:



Instrument status

Indicates the status of the instrument.

Color	Status
Green	Ready (for blood smear preparation) status/Waiting to execute maintenance
Flashing green	Starting up/Preparing a slide/Switching the slide preparation mode/Shutting down/Sleeping/Maintenance in progress
Orange*	Ready (for blood smear preparation) status
Flashing orange*	Starting up/Preparing a slide/Switching the slide preparation mode/Shutting down/Sleeping
Red	Error (without alarm)/Initializing system/Error stop/Stopped
Flashing red	Error (with alarm)
Not lit	Powered OFF

* An error has occurred, but the instrument is still operational.







A message is shown as indicated below, depending on the status of the instrument.

Message	Status
[Start Up]	Starting up
[Ready]	Ready (for blood smear preparation) status* ¹
[Instrument nickname]* ²	Ready (for blood smear preparation) status
[Shutdown]	Shutdown in progress
[Maintenance]	Maintenance in progress

*¹ Shutdown, cleaning, and maintenance operations cannot be executed.





*² Name can be changed from the settings. For details, see the following.

(▶P.116 "Chapter 5: 5.4.4 Instrument name setting")

Indicator	The statuses of the instrument, connected reagents and peripheral devices are displayed by icons. If a reagent or device is not connected, an icon does not appear.						
 Reagent status	Changes to yellow the remaining reagent volume is low. Changes to red when one of the connected reagents runs out (reagent level 0). Touch to display the [Reagent replacement] dialog box.						
 Host computer status	When a host computer is connected, this changes to red if a connection error occurs.						
 DI status	When the DI-60 is connected, this changes to red if an error occurs on the DI-60.						
 RU status	When the RU-20 is connected, this changes to red if an error occurs on the RU-20.						
 Sampler status	Changes to red if a sampler error occurs.						
 CF status	When the CF-70 is connected, this changes to red if an error occurs on the CF-70.						
Slide preparation mode	Displays a selected slide preparation mode. (▶P.58 "Chapter 3: 3.2.2 Slide preparation mode")						
Sample number	Displays a sample number. [>] at the beginning of the sample number indicates that the instrument is ready to aspirate the next sample. If the sample number is not read, or if it has not been entered manually, a message is displayed to prompt the input of 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: <table border="1" data-bbox="651 1240 1473 1364"> <thead> <tr> <th>Color</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>Orange background/Black text</td> <td>Caution</td> </tr> <tr> <td>Red background/White text</td> <td>Warning</td> </tr> </tbody> </table> <p>Non-urgent information such as notices appears in white text.</p>	Color	Status	Orange background/Black text	Caution	Red background/White text	Warning
Color	Status						
Orange background/Black text	Caution						
Red background/White text	Warning						
[Mode]	Touch to select the slide preparation mode. (▶P.58 "Chapter 3: 3.2.2 Slide preparation mode")						

[Sampler]/[Manual]

Touch to register sample information and slide preparation conditions.
 Touch to display the [Manual preparation] dialog box or [Sampler preparation] dialog box.
 The icon displayed varies depending on the selected slide preparation method and settings.

Display	Types of slide preparation	Setting
 Sampler	Sampler preparation	—
 Manual	Manual preparation	[Cap open] is OFF
 Manual		[Cap open] is ON
 RBT Manual		[RBT] is ON

[Menu]

Touch to display a submenu, which allows you to execute the following functions.

[Shutdown]: Touch to display the [Shutdown] dialog box.

[Reagent replacement]: Touch to display the [Reagent replacement] dialog box.

[Spreader glass rinsing]: Touch to display the [Spreader glass rinsing] dialog box.

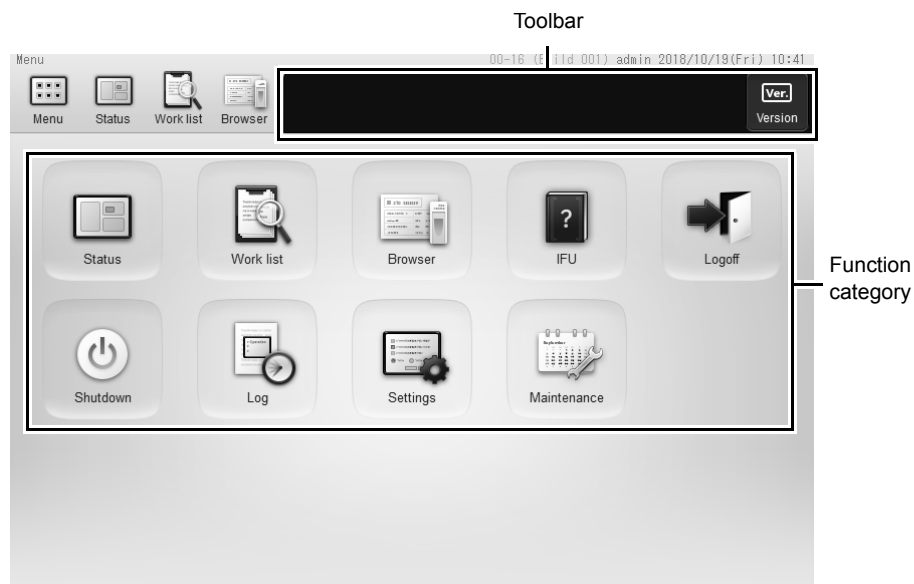
[Emergency stop]: Touch to execute instrument emergency stop.

1.7.2 [Menu] screen

When you start the instrument and log on, the [Menu] screen appears.

To execute a function, touch an icon displayed in the main area.

The displayed icons are different depending on the permissions of the logged on user.



[Menu] screen

Toolbar	Displays buttons for each function.
[Version]	Touch to check the version of the instrument. (▶P.30 "1.7.3 Version information confirmation")
Function category	To execute the function, touch the displayed icon.
[Status]	Touch to check the status of the instrument. (▶P.87 "Chapter 3: 3.6 Checking the status of smear currently being prepared")
[Work list]	Touch to manage slide preparation orders. (▶P.33 "Chapter 2 Managing Slide Preparation Order (Work list)")
[Browser]	Touch to check the details of a slide preparation order. (▶P.96 "Chapter 4: 4.2 Checking details of slide preparation orders")
[IFU]	Touch to view the online manuals. (▶P.20 "1.5 Viewing the online manuals")
[Logoff]	Touch to change the logged on user. (▶P.19 "1.4 Logging off")
[Shutdown]	Touch to shutdown the instrument. (▶P.11 "1.3 Shutdown")
[Log]*	Touch to check the log of the instrument. (▶Troubleshooting "Chapter 3 Checking Logs")
[Settings]*	Touch to change instrument settings. (▶P.104 "Chapter 5: 5.2 Changing the instrument setting")

[Maintenance]*	Touch to perform instrument maintenance. (▶ Troubleshooting "Chapter 2: 2.2 Displaying the maintenance screen")
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* Touch an icon to display the menu screen of that category. For the screen transition, see the following.
(▶ P.31 "1.7.4 Menu item tree")

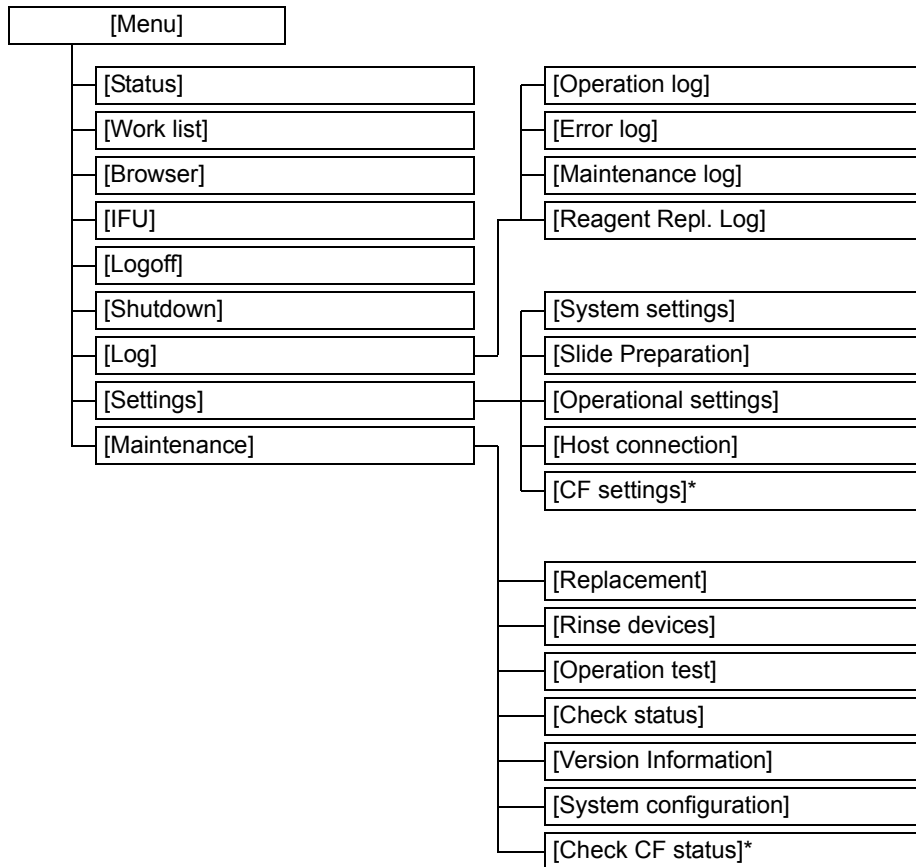
1.7.3 Version information confirmation

Touch [Version] on the toolbar to display the [Version Information] dialog box.

[Ver.X.XX-XX]	Displays the version of the overall instrument software.
[IPU]	Displays the version of the information processing module.
[Device Control Manager]	Displays the version of the instrument control module.
[SP Sequencer]	Displays the version of the sequencer control module of the main unit.
[CF Sequencer]	This is displayed only when the instrument is connected to the CF-70. Displays the version of the sequencer control module of the CF-70.
[Sequence Program Version]	
[SP]	Displays the version of the main unit sequence program.
[CF]	This is displayed only when the instrument is connected to the CF-70. Displays the version of the CF-70 sequence program.
[FPGA Version]	
[SP]	Displays the version of the FPGA of the main unit.
[CF]	This is displayed only when the instrument is connected to the CF-70. Displays the version of the FPGA of the CF-70.

1.7.4 Menu item tree

The menu structure is shown below.



* Displayed only when the instrument is connected to the DI-60.

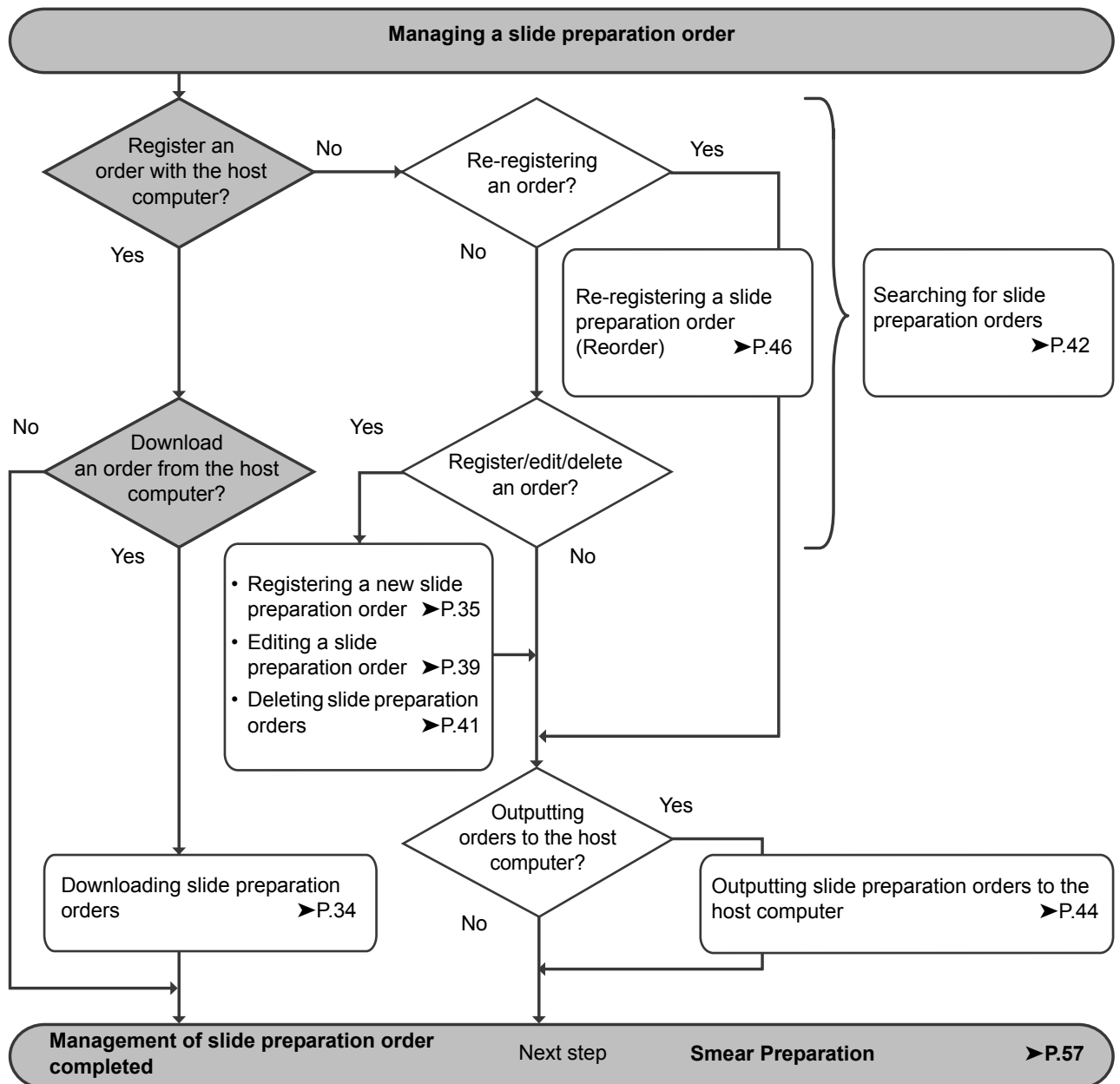
Chapter 2 Managing Slide Preparation Order (Work list)

This chapter explains how to manage the slide preparation order with this instrument.

If the instrument will be connected to a host computer and various types of information will be managed on the host computer, the procedures described in this chapter are not necessary.

2.1 Flow of slide preparation order management

The flow chart below shows the flow of slide preparation order management. The typical flow is shown in gray.





Information

If orders for a smear are registered on both the instrument and a host computer, the smear will be created based on the order registered on the instrument.

2.2 Downloading/registering/editing/deleting a slide preparation order

A slide preparation order is an instruction to create a smear that includes sample information, smear conditions, number of slides, and other required information.

When creating a smear, the registered order is referenced using the sample number* as a key. The smear is created based on the information registered in the order.

* The settings can be changed to reference orders using the rack number and sample tube position as a key. For details, see the following.

(▶P.143 "Chapter 5: 5.6.2 Order inquiry setting")

2.2.1 Downloading slide preparation orders

When all the following conditions are met, orders can be downloaded from the host computer at a time.

- When the instrument is connected to a host computer
- When there is at least 1 order whose [Status] is [Not prepared] in the orders registered in the instrument
- When a smear is not being prepared

If there is an order that matches the query key in the host computer, the order will be downloaded from the machine and the order in the instrument will be overwritten.

For the inquiry key setting, see the following.

(▶P.143 "Chapter 5: 5.6.2 Order inquiry setting")

1 Touch [Work list] in the [Menu] screen.

Or touch [Work list] on the toolbar.

The [Work list] screen appears.

Sample No.	Reception date	Reception time	End date	End time	
20-am10	2018/03/29	09:48:31	2018/03/29	09:51:23	Pre
20-am09	2018/03/29	09:45:20	2018/03/29	09:47:45	Pre
20-am08	2018/03/29	09:42:51	2018/03/29	09:45:45	Pre
20-am07	2018/03/29	09:39:56	2018/03/29	09:42:24	Pre
20-am06	2018/03/29	09:39:11	2018/03/29	09:41:36	Pre
20-am05	2018/03/29	09:38:22	2018/03/29	09:40:48	Pre
20-am04	2018/03/29	09:37:35	2018/03/29	09:40:00	Pre
20-am03	2018/03/29	09:36:47	2018/03/29	09:39:12	Pre
20-am02	2018/03/29	09:36:01	2018/03/29	09:38:24	Pre
20-am01	2018/03/29	09:34:44	2018/03/29	09:37:36	Pre

[Work list] screen

2 Touch [Download] on the toolbar.

The download starts and the progress dialog box appears.
When downloading finishes, the dialog box closes.



Information

Smear preparation cannot be started while downloading is in progress.



Note:

- When there are 10,000 orders, each new order will automatically delete the order with the oldest preparation completed date and time. When there are no orders for which smear preparation has been completed, the order with the oldest registration date will be deleted.
- If a communication error occurs while downloading, the downloaded orders are registered. The orders that have not been downloaded yet are not registered.

2.2.2 Registering a new slide preparation order

1 Touch [Work list] in the [Menu] screen.

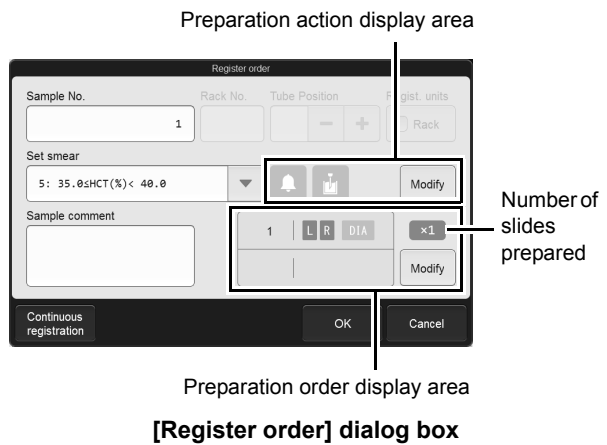
Or touch [Work list] on the toolbar.
The [Work list] screen appears.

Sample No.	Reception date	Reception time	End date	End time	Pr
20-am10	2018/03/29	09:48:31	2018/03/29	09:51:23	Pr
20-am09	2018/03/29	09:45:20	2018/03/29	09:47:45	Pr
20-am08	2018/03/29	09:42:51	2018/03/29	09:45:45	Pr
20-am07	2018/03/29	09:39:56	2018/03/29	09:42:24	Pr
20-am06	2018/03/29	09:39:11	2018/03/29	09:41:36	Pr
20-am05	2018/03/29	09:38:22	2018/03/29	09:40:48	Pr
20-am04	2018/03/29	09:37:35	2018/03/29	09:40:00	Pr
20-am03	2018/03/29	09:36:47	2018/03/29	09:39:12	Pr
20-am02	2018/03/29	09:36:01	2018/03/29	09:38:24	Pr
20-am01	2018/03/29	09:34:44	2018/03/29	09:37:36	Pr

[Work list] screen

2 Touch [Order] on the toolbar and touch [Register order].

The [Register order] dialog box appears.

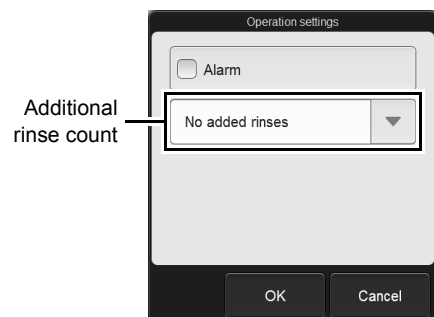


3 Touch and set the displayed items.

[Sample No.]*¹	Enter a sample number. You can enter up to 22 characters.
[Rack No.]*²	Enter a rack number. You can enter up to 6 characters.
[Tube Position]*²	Enter a sample tube position number. Any number between 1 and 10 can be entered. Values can also be adjusted by touching [-] or [+].
[Regist. units]*²	Select the checkbox to register orders by sample rack. From the 2nd sample tube in the same sample rack, the sample numbers are set automatically by incrementing by 1 from the previous number, starting from the number entered in [Sample No.]. All other settings are the same. If less than 10 orders can be registered, this is grayed out and cannot be checked.
[Set smear]	Set the smear conditions to be used. For details, see the following. (▶P.121 "Chapter 5: 5.5.1 Smearing condition setting")
Preparation action display area	This shows settings for slide preparation actions by following icons. The icon is displayed in light blue when the setting is ON.



[Modify] Touch to display the dialog box on the right.
The settings below are available.



[Alarm]	Selected this checkbox so that an alarm will sound at the smear preparation completion.
Additional rinse count	The options available for the number of additional cleanings for the piercer and spreader glass performed after the sample aspiration include [No added rinses], [1 added rinse], [2 added rinses], and [3 added rinses].
[Sample comment]	Enter comments about the sample. You can enter up to 40 characters.
Preparation order display area	Displays the information of the set order. The icon is displayed in light blue when the setting is ON.
[1st slide]/ [2nd slide]	Displays whether the glass slide used was from the left or right slide supply cassette for 1st and 2nd preparation, and whether analyzed on the DI-60. [L]: Use a glass slide from the slide supply cassette (left). [R]: Use a glass slide from the slide supply cassette (right). [DIA]: Displayed only when the instrument is connected to the DI-60. Sends the slides to the DI-60 for analysis.
Number of slides prepared	Displays the number of slides prepared from 1 sample.
[Modify]	Touch to display the dialog box on the right. The settings below are available.

Preparation order

Number of slide 1 slide ▼	Replications Once ▼
glass slide (1st) Do not specify ▼	<input type="checkbox"/> DIA preparation
glass slide (2nd) Do not specify ▼	<input type="checkbox"/> DIA preparation
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

[Number of slide]	You can select the number of preparable slides from [0 slides], [1 slide], or [2 slides]. Select [0 slides] to skip slide preparation for that order.
[Replications]	You can select [Once] to [5 times] for the number of slides prepared from 1 sample.
[glass slide (1st)]/[glass slide (2nd)]	Select the glass slides to be used for the 1st and 2nd glass slides from the following. [Cassette (R)]: Use a glass slide from the slide supply cassette (right). [Cassette (L)]: Use a glass slide from the slide supply cassette (left). [Do not specify]: Select this when you do not need to specify which slide supply cassette is used such as when the same type of glass slides are loaded in both supply cassettes.
[DIA preparation]	Displayed only when the instrument is connected to the DI-60. Select the checkbox to send the selected slides to the DI-60 for analysis.

*1 If you are using the optional hand-held barcode reader, you can also read the barcode to input [Sample No.].

*2 Can only be selected when order inquiry is set to [Rack No./Tube pos.].



Note:

If an order has already been registered with the same value for either of the items below, an overwrite confirmation dialog box will appear.

- [Sample No.]
- [Rack No.] and [Tube Position]

4 Touch [Continuous registration] to continue registering orders.

The [Register order] dialog box will appear again. Repeat steps 3 through 4 until all orders have been registered.

This step is not necessary if you do not need to continue registering orders. Go to the step 5.

5 Touch [OK].

The dialog box closes, and the order is registered.



Note:

When there are 10,000 orders, each new order will automatically delete the order with the oldest preparation completed date and time. When there are no orders for which smear preparation has been completed, the order with the oldest registration date will be deleted.

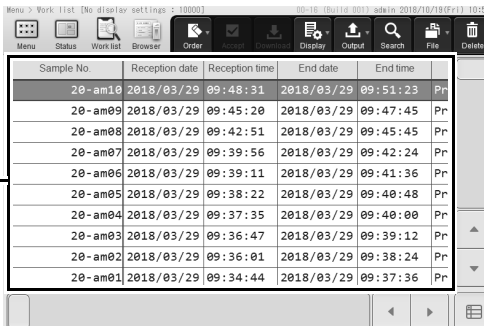
2.2.3 Editing a slide preparation order

You can edit orders registered in the instrument and orders downloaded from a host computer. You can modify an order when [Status] of the order is one of the following.

- [Not prepared]
- [Prep. completed]
- [Err. (low reliab.)]
- [Error (Abort)]

1 Touch [Work list] in the [Menu] screen.

Or touch [Work list] on the toolbar.
The [Work list] screen appears.



Order list


Sample No.	Reception date	Reception time	End date	End time	Pr
20-am10	2018/03/29	09:48:31	2018/03/29	09:51:23	Pr
20-am09	2018/03/29	09:45:20	2018/03/29	09:47:45	Pr
20-am08	2018/03/29	09:42:51	2018/03/29	09:45:45	Pr
20-am07	2018/03/29	09:39:56	2018/03/29	09:42:24	Pr
20-am06	2018/03/29	09:39:11	2018/03/29	09:41:36	Pr
20-am05	2018/03/29	09:38:22	2018/03/29	09:40:48	Pr
20-am04	2018/03/29	09:37:35	2018/03/29	09:40:00	Pr
20-am03	2018/03/29	09:36:47	2018/03/29	09:39:12	Pr
20-am02	2018/03/29	09:36:01	2018/03/29	09:38:24	Pr
20-am01	2018/03/29	09:34:44	2018/03/29	09:37:36	Pr

[Work list] screen

2 Select the order that you want to edit in the order list.

3 Touch [Order] on the toolbar and touch [Modify order].

The dialog box on the right appears.



Preparation action display area

Preparation order display area

4 Touch the item you want to modify and modify the item.

[Sample No.]*¹	Edit the sample number.
[Set smear]*²	Edit the smear conditions.
Preparation action display area	This shows settings for slide preparation actions. The same information as the dialog box for registering a new order is displayed.
[Modify]*²	Touch to display a dialog box, which allows you to specify whether or not an alarm sounds when a slide preparation is complete, and whether additional rinses are performed.
[Sample comment]	You can change comments about the sample.
Preparation order display area	Displays the information of the order. The same information as the dialog box for registering a new order is displayed.
[Modify]*²	Touch to display a dialog box, which allows you to change the number of slides prepared and the slide supply cassette that is used.

*1 This can only be changed when order inquiry key is set to [Rack No./Tube pos.].

*2 This can only be edited when [Status] of the order is [Not prepared].

5 Touch [OK].

The dialog box closes, and the order is modified.



Note:

If smear preparation begins before you have finished editing, the smear is prepared using the settings prior to editing. An edited order is registered as a new order, and [Order type] changes to [Reorder].

2.2.4 Deleting slide preparation orders

1 Touch [Work list] in the [Menu] screen.

Or touch [Work list] on the toolbar.
The [Work list] screen appears.

Order list

Sample No.	Reception date	Reception time	End date	End time	Pr
20-am10	2018/03/29	09:48:31	2018/03/29	09:51:23	Pr
20-am09	2018/03/29	09:45:20	2018/03/29	09:47:45	Pr
20-am08	2018/03/29	09:42:51	2018/03/29	09:45:45	Pr
20-am07	2018/03/29	09:39:56	2018/03/29	09:42:24	Pr
20-am06	2018/03/29	09:39:11	2018/03/29	09:41:36	Pr
20-am05	2018/03/29	09:38:22	2018/03/29	09:40:48	Pr
20-am04	2018/03/29	09:37:35	2018/03/29	09:40:00	Pr
20-am03	2018/03/29	09:36:47	2018/03/29	09:39:12	Pr
20-am02	2018/03/29	09:36:01	2018/03/29	09:38:24	Pr
20-am01	2018/03/29	09:34:44	2018/03/29	09:37:36	Pr

[Work list] screen

2 Select the order you want to delete from the order list.

To select multiple orders, change the screen to mark mode and add marks to the orders.
For the mark mode, see the following.
(►P.23 "Chapter 1: 1.6.2 Selecting multiple items (mark mode)")

3 Touch [Delete] on the toolbar.

The confirmation dialog box appears.

4 Touch [Yes].

The dialog box closes, and the selected order is deleted.

2.3 Searching for slide preparation orders

You can search for an order with [Sample No.], [Rack No.], [Print], or [Date of slide preparation].

1 Touch [Work list] in the [Menu] screen.

Or touch [Work list] on the toolbar.
The [Work list] screen appears.

2 Touch [Search] on the toolbar.

The dialog box on the right appears.

3 Set a search condition.

Select the desired search conditions and add search criteria.

[Sample No.]	Search for a sample number. You can enter up to 22 characters. If you are using the optional hand-held barcode reader, you can also read the barcode to input [Sample No.].
[Rack No.]	Search for a rack number. You can enter up to 6 characters.
[Print]	You can search for text printed on a glass slide. You can enter up to 22 characters.
[Date of slide preparation]	You can search for the date when the slide preparation was completed. Enter the date in the format "Year (4 digits)/Month (2 digits)/Day (2 digits)". You can also touch the button at the right of the entry field to select the date from a calendar.
[Keyword]	You can perform order searches by entering text that is part of the order sample number, rack number, or the content printed on glass slide. You can enter up to 22 characters.



Note:

You can enter certain symbols in place of characters in your search.

"?": Used in place of 1 character.

e.g. If you search for "99?99", "99099", "99999" and "99A99" are all identified in the search results.

"*": Used in place of 0 or more characters.

e.g. If you search for "9*9", "909", "9119" and "99A99" are all identified in the search results.

4 Touch [Prev.] or [Next].

An order that matches the search conditions is selected in the order list.

[Prev.]	Touch to search upward from the order selected in the list.
---------	---

[Next]	Touch to search downward from the order selected in the list.
--------	---

5 Touch [Close].

The dialog box closes.

**Note:**

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

2.4 Outputting slide preparation orders to the host computer

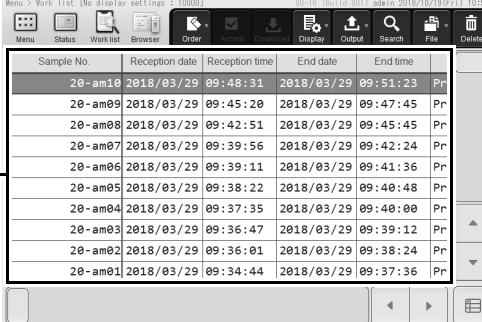
When all conditions below are satisfied, an order can be output to the host computer.

- The instrument is connected to a host computer
- The [Prep. Mode] of the order to be output is [Smearing&staining], [Smearing], or [Staining]
- The [Status] of the order to be output is [Prep. completed], [Err. (low reliab.)], or [Error (Abort)]

1 Touch [Work list] in the [Menu] screen.

Or touch [Work list] on the toolbar.

The [Work list] screen appears.



Sample No.	Reception date	Reception time	End date	End time	Pr
20-am10	2018/03/29	09:48:31	2018/03/29	09:51:23	Pr
20-am09	2018/03/29	09:45:20	2018/03/29	09:47:45	Pr
20-am08	2018/03/29	09:42:51	2018/03/29	09:45:45	Pr
20-am07	2018/03/29	09:39:56	2018/03/29	09:42:24	Pr
20-am06	2018/03/29	09:39:11	2018/03/29	09:41:36	Pr
20-am05	2018/03/29	09:38:22	2018/03/29	09:40:48	Pr
20-am04	2018/03/29	09:37:35	2018/03/29	09:40:00	Pr
20-am03	2018/03/29	09:36:47	2018/03/29	09:39:12	Pr
20-am02	2018/03/29	09:36:01	2018/03/29	09:38:24	Pr
20-am01	2018/03/29	09:34:44	2018/03/29	09:37:36	Pr

[Work list] screen

2 Select the order that you want to output in the order list.

To select multiple orders, change the screen to mark mode and add marks to the orders.

For the mark mode, see the following.

(►P.23 "Chapter 1: 1.6.2 Selecting multiple items (mark mode)")

3 Touch [Output] on the toolbar.

The selected order is output to the host computer.

2.5 Saving slide preparation orders in CSV format

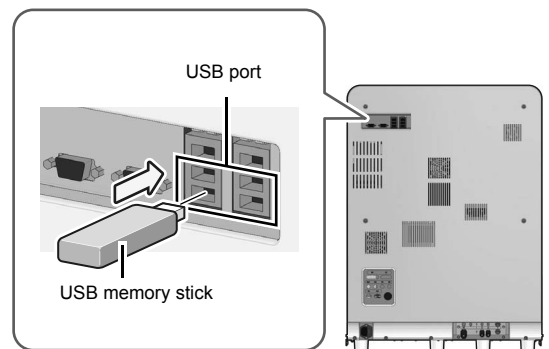
You can save the order list as a CSV file in a USB memory stick.

1 Touch [Work list] in the menu screen.

The [Work list] menu screen appears.

2 Insert the USB memory stick.

Insert the 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 [File] on the toolbar and touch [Output in CSV format].

The save starts and the [Waiting for completion of execution...] dialog box appears.
When the dialog box closes, it indicates that the save has been completed.

4 Remove the USB memory stick.

● Save location/file name

When you execute save, the file is saved with the following file name in the folder with the instrument ID as the folder name*.

SP-50^PS Code^Serial_Software Version_SLIDE.csv

e.g. SP-50^BX765805^12345_00-16_SLIDE.csv

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

2.6 Re-registering a slide preparation order (Reorder)

[Reorder] is used to register a new order using the settings of a previously registered order.

For example, if an error occurs during preparation of a smear, you can use this function to re-register the order and repeat preparation of the smear using the same settings. The following orders cannot be re-registered.

- An order whose [Status] is [Not prepared]
- If the inquiry key is [Rack No./Tube pos.], an order without rack number and sample tube position settings



Note:

If you re-register an order for which the [Status] is either [Err. (low reliab.)] or [Error (Abort)], the error status of the original order will change to the confirmed status. In that case, the [E] in the [Process after prep.] displays in the order list will clear.

1 Touch [Work list] in the [Menu] screen.

Or touch [Work list] on the toolbar.
The [Work list] screen appears.

Order list

Sample No.	Reception date	Reception time	End date	End time	Pr
20-am10	2018/03/29	09:48:31	2018/03/29	09:51:23	Pr
20-am09	2018/03/29	09:45:20	2018/03/29	09:47:45	Pr
20-am08	2018/03/29	09:42:51	2018/03/29	09:45:45	Pr
20-am07	2018/03/29	09:39:56	2018/03/29	09:42:24	Pr
20-am06	2018/03/29	09:39:11	2018/03/29	09:41:36	Pr
20-am05	2018/03/29	09:38:22	2018/03/29	09:40:48	Pr
20-am04	2018/03/29	09:37:35	2018/03/29	09:40:00	Pr
20-am03	2018/03/29	09:36:47	2018/03/29	09:39:12	Pr
20-am02	2018/03/29	09:36:01	2018/03/29	09:38:24	Pr
20-am01	2018/03/29	09:34:44	2018/03/29	09:37:36	Pr

[Work list] screen

2 Select the order that you want to re-register in the order list.

To select multiple orders, change the screen to mark mode and add marks to the orders.

For the mark mode, see the following.

(▶P.23 "Chapter 1: 1.6.2 Selecting multiple items (mark mode)")

3 Touch [Order] on the toolbar and touch [Reorder].

The dialog box on the right appears.

Preparation action display area

Preparation order display area

4 Check the settings.

If needed, you can change a setting.

This step is not necessary if you selected multiple orders. Go to the step 5.

[Sample No.]	You can change the sample number. The sample number can only be changed in the following cases: <ul style="list-style-type: none"> • When the [Status] of the order is [Prep. completed]/[Err. (low reliab.)]/[Error (Abort)] • When the order inquiry key is [Rack No./Tube pos.]
[Set smear]	You can edit the smear conditions.
Preparation action display area	This shows settings for slide preparation actions. The same information as the dialog box for registering a new order is displayed.
[Modify]	Touch to display a dialog box, which allows you to specify whether or not an alarm sounds when a slide preparation is completed, and whether additional rinses are performed.
[Sample comment]	You can change comments about the sample.
Preparation order display area	Displays the information of the order. The same information as the dialog box for registering a new order is displayed.
[Modify]	Touch to display a dialog box, which allows you to change the number of slides prepared and the slide supply cassette that is used.

5 Touch [OK].

The dialog box closes and a new order that inherits the settings of the original order is registered.



Note:

If a [Not prepared] order with the same order inquiry key is already registered, an overwrite confirmation dialog box will appear.

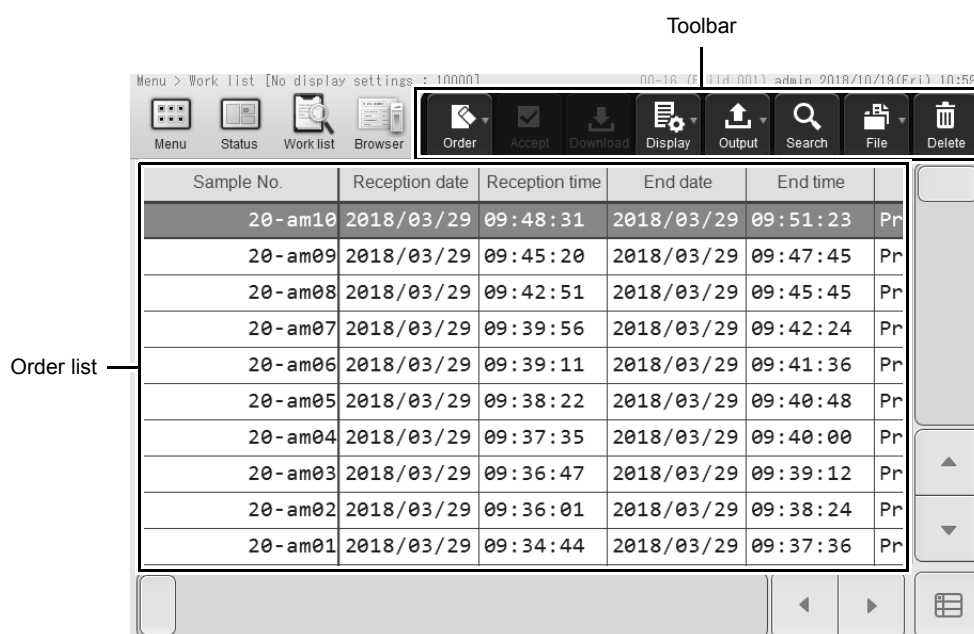
2.7 [Work list] screen

Touch [Work list] in the [Menu] screen to display the [Work list] screen. You can also touch [Work list] on the toolbar to display the screen.



Information

Before changing an error to "Confirmed", verify that there are no problems in the prepared smear.



[Work list] screen

Toolbar	Displays buttons for each function.
[Order]	<p>Touch to display a submenu, which allows you to register, modify, and re-register orders. The displayed items depend on your instrument configuration.</p> <p>[Register order]: Register a new order. (▶P.35 "2.2.2 Registering a new slide preparation order")</p> <p>[Modify order]: Edit a registered order. (▶P.39 "2.2.3 Editing a slide preparation order")</p> <p>[Reorder]: Register a new order using the settings of a previously registered order. (▶P.46 "2.6 Re-registering a slide preparation order (Reorder)")</p>
[Accept]	Touch to change an error to "Confirmed" and remove [E] from [Process after prep.].

[Download]	Downloads can only be performed when the instrument is connected to a host computer, and there is at least 1 order for which the [Status] is [Not prepared]. Touch to download orders from the host computer. (▶P.34 "2.2.1 Downloading slide preparation orders")
[Display]	Touch to display a submenu, which allows you to set the display format and display items in the order list. (▶P.52 "2.7.1 Changing the display of information in the order list (display settings)")
[Output]	This output is performed only when the instrument is connected to a host computer. Touch to output orders to the host computer. (▶P.44 "2.4 Outputting slide preparation orders to the host computer")
[Search]	Touch to search for an order. (▶P.42 "2.3 Searching for slide preparation orders")
[File]	Touch to display a submenu, which allows you to save the order list. (▶P.45 "2.5 Saving slide preparation orders in CSV format")
[Delete]	Touch to delete an order. (▶P.41 "2.2.4 Deleting slide preparation orders")
Order list	Lists orders.
[Sample No.]	Displays the sample number.
[Number of slides]	The number of slides to be prepared of the smear appears.
[Set smear]	Displays the smearing condition. For details, see the following. (▶P.121 "Chapter 5: 5.5.1 Smearing condition setting")
[Staining condition name]	Displays a staining condition name. For details, see the following. (▶P.123 "Chapter 5: 5.5.2 Staining condition setting")
[Slide position]	Displays whether the glass slide used was from the left or right slide supply cassette. When the [Status] of the order is [Not prepared], the slide supply cassette specified when the order was registered appears. [R]: Slide supply cassette (right) [L]: Slide supply cassette (left) [-]: Not specified
[Direction]	The location where the prepared smear is stored appears. [SP]: Indicates that a sample has not been prepared or that preparation is in progress. MM-PP: Indicates that a sample is stored in a magazine in the magazine storage unit. The MM indicates the serial number assigned to the magazine storing the samples for the day, and the PP indicates the sample position in the magazine. [R-##]/[L-##]: Indicates that a sample is stored in a magazine in the manual magazine holder. [R-##] appears when the sample is stored in the right manual magazine holder, and [L-##] appears when the sample is stored in the left manual magazine holder. [DIA]: Displayed only when the instrument is connected to the DI-60. Indicates that the smear will be analyzed on the DI-60 after it is prepared by the instrument.

[Reception date]	Displays the date when the order was registered. Blank when the [Status] of the order is [Not prepared].
[Reception time]	Displays the time when the order was registered. Blank when the [Status] of the order is [Not prepared].
[End date]	Displays the date when the slide preparation was completed.
[End time]	Displays the time when the slide preparation was completed.
[Status]	<p>Displays the status of the glass slide.</p> <p>[Not prepared]: Indicates that the slide preparation is not started.</p> <p>[Print]/[Print conveying]: Printing on the glass slide is in progress.</p> <p>[Aspiration]: Sample aspiration is in progress.</p> <p>[Ready]: Indicates that the slide is waiting for preparation when 2 or more slides are being prepared or the slide is being manually prepared.</p> <p>[Smearing]: Preparation of sample smear is in progress.</p> <p>[Dry/convey]: Indicates that a sample is being dried after the smear process or that it is being transported.</p> <p>[Methanol fix]/[Undiluted stain 1]/[Diluted stain 1]/[Passing]/ [Phosphate buffer]/[Diluted stain 2]/[Rinse]: Indicates where the glass slide is in the staining process.</p> <p>[Dry]: This sample is drying.</p> <p>[Prep. completed]: Indicates that the slide preparation has completed properly.</p> <p>[Err. (low reliab.)]: Preparation of smear is completed, but there is a concern about the sample quality.</p> <p>[Error (Abort)]: Indicates that an error has occurred during the slide preparation and the preparation has been canceled.</p>
[Operation mode]	<p>Displays the slide preparation type.</p> <p>[Sampler]: Sampler preparation</p> <p>[Manual]: Manual preparation</p> <p>[Manual(Open)]: Manual preparation ([Cap open] is ON, or a micro sample tube is used)</p>
[Order type]	<p>Displays the source of the order registration.</p> <p>[Manual]: Indicates that the order was registered on the instrument.</p> <p>[Host]: Indicates that the order was downloaded from a host computer.</p> <p>[Positive]: Indicates that the order was automatically registered as an abnormal sample as determined by a blood count analyzer.</p> <p>[Reorder]: Indicates that the order is a reorder. (►P.46 "2.6 Re-registering a slide preparation order (Reorder)")</p> <p>[Default]: Indicates that the default order settings were used for the order. For details, see the following. (►P.126 "Chapter 5: 5.5.3 Default order setting")</p>

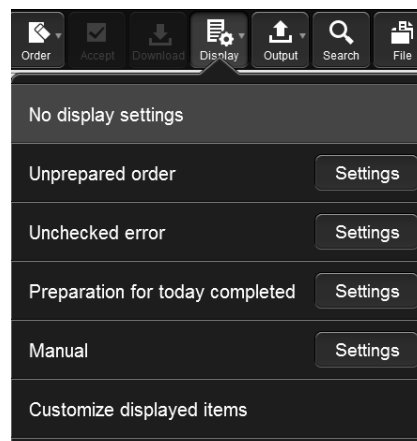
[Sample Inf.]	Displays the input attribute of the sample number. [B]: Read by a barcode reader [A]: Automatically incremented [M]: Manually entered [C]: Host computer queried
[Rack]	Displays the rack number in 6 digits for sampler preparation.
[Pos.]	Sample tube position numbers 1 to 10 in the sample rack.
[Remaining time]	Displays the approximate time in minutes remaining for the smear to be completed.
[PRINT1]/ [PRINT2]/ [PRINT3]	Displays the information printed on the 1st to the 3rd glass slide. For details, see the following. (►P.127 "Chapter 5: 5.5.4 Print type settings")
[Slide Sequence]	Displays the serial number assigned to the order each time a glass slide is used. The number is reset each time the instrument power is turned on.
[Sample Seq.]	Displays the serial number assigned to the order each time a sample is aspirated. The number is reset each time the instrument power is turned on.
[Prep. Mode]	Displays the slide preparation mode. For details, see the following. (►P.58 "Chapter 3: 3.2.2 Slide preparation mode")
[Process after prep.]	Displays the error confirmation status and output status of the order, and the alarm setting status when preparation was completed. [E]: Error has not been confirmed. [H]: The order has not been output to the host computer. [A]: Appears when the alarm is set to sound when slide preparation is completed.
[Added rinses]	The number of additional cleanings for the piercer and spreader glass performed after sample aspiration appears here.
[Sample comment]	Displays comments about the sample.

2.7.1 Changing the display of information in the order list (display settings)

You can change the order of display of the order list, and filter the order list to only display orders that match specified conditions. You can also change the items displayed in the order list.

1 Touch [Display] on the toolbar.

The submenu on the right appears.



2 Touch the desired display method.

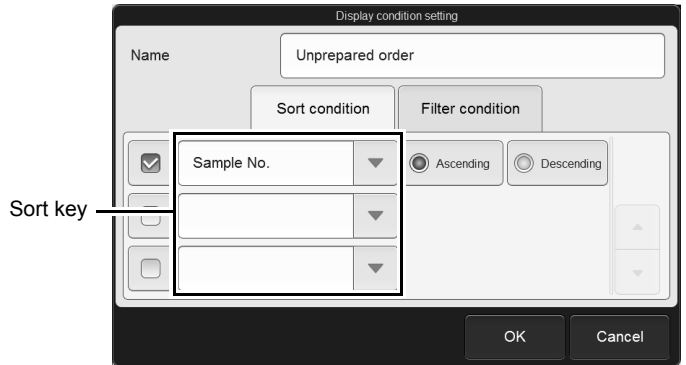
The sub-menu closes and the display of the order list changes.

[No display settings]	Touch to cancel the sort and filter settings and show all slide preparation orders in the order of registration.
[Unprepared order]	Touch to display only unprepared orders by [Sample No.] in ascending order.
[Unchecked error]	Touch to display only completed orders that have unconfirmed errors by [End date] and [End time] in descending order.
[Preparation for today completed]	Touch to display only completed orders that were prepared that day, by [End time] in ascending order.
[Manual]	Touch to display only completed orders that were prepared manually, by [End date] and [End time] in ascending order.
[Settings]	Touch this to configure display sorting and filtering conditions. (▶P.53 "●Changing display settings (sort/filter)")
[Customize displayed items]	Touch to display a dialog box, which allows you to change the items displayed on the order list. (▶P.56 "2.7.2 Changing the items displayed in the order list")

● Changing display settings (sort/filter)

1 Touch [Settings] in the sub-menu of [Display] on the toolbar.

The dialog box on the right appears.



2 Change [Name] appropriately for the conditions to be changed.

The changed name appears in the sub-menu. You can enter up to 20 characters.

3 Change the sort conditions.

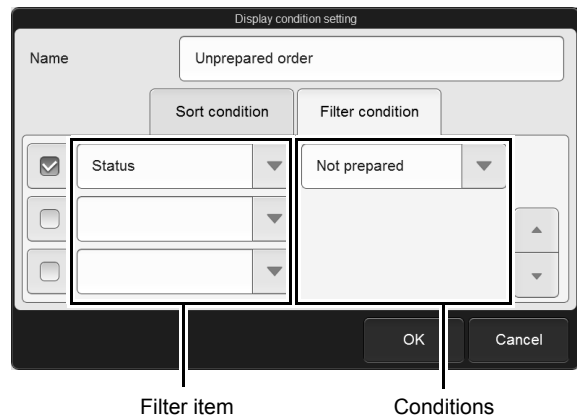
Select a sort key and touch [Ascending] or [Descending].

To enable the sort key setting, select the checkbox at the left. When multiple sort keys are used, the sort key settings are given priority from the top. The sort keys can be selected from the following.

[Sample receipt date]	Sort by start date of slide preparation.
[Sample receipt time]	Sort by start time of slide preparation.
[End date]	Sort by date when the slide preparation was completed.
[End time]	Sort by time when the slide preparation was completed.
[Sample No.]	Sort by sample number.
[Rack Number]	Sort by rack number.
[Tube Position]	Sort by sample tube position number.
[Sample Seq.]	Sort by serial number assigned to the order each time a sample is aspirated.
[Slide Sequence]	Sort by serial number assigned to the order each time a glass slide is used.

4 Touch the [Filter condition] tab.

The dialog box appears as shown at right.



5 Set a filter condition.

Select a filter item and enter the conditions.

To enable the filter setting, select the checkbox at the left.

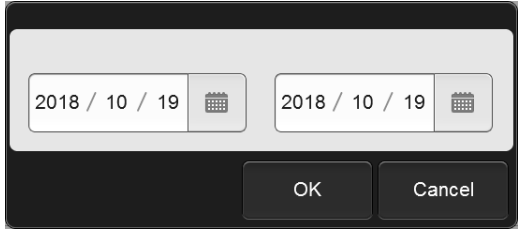
The conditions that can be selected vary by filter item. For the condition for each item, see the following.

(▶P.54 "●Filter items and conditions")

6 Touch [OK].

The dialog box closes and the settings are saved. The information shown in the order list changes according to the set conditions.

● Filter items and conditions

Filter item	Conditions	Description
[Date]	[Today] [Yesterday] [Day before yesterday] [Specify range]	You can filter the list by specifying [Date] when the order was registered. If [Specify range] is selected, the following dialog box appears. Enter the range and touch [OK]. 

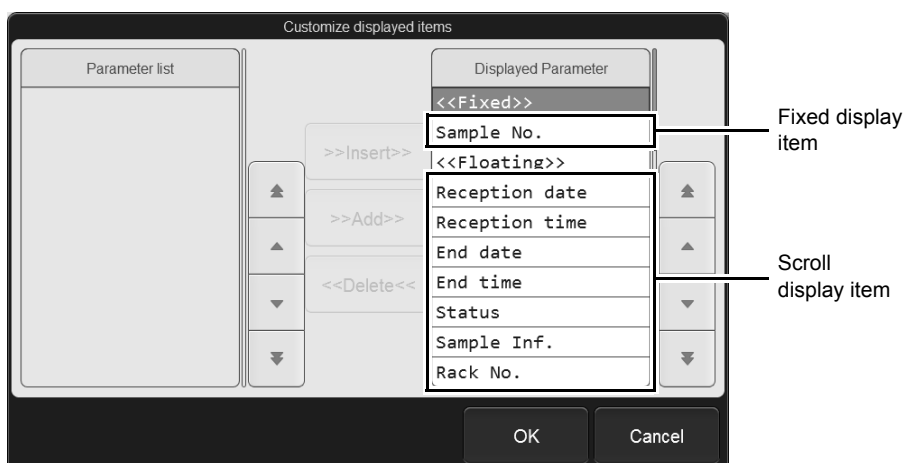
Filter item	Conditions	Description
[Operation mode]	[Manual] [Sampler]	You can filter the list by specifying the slide preparation type. Select [Manual] for manual preparation, and select [Sampler] for sampler preparation. For details, see the following. (▶P.58 "Chapter 3: 3.2.1 Types of slide preparation") When [Manual] is specified, orders whose [Operation mode] is [Manual(Open)] are also shown.
[Prep. Mode]	[Smearing&staining] [Smearing] [Staining] [Print]	You can filter the list by specifying the slide preparation mode. For details, see the following. (▶P.58 "Chapter 3: 3.2.2 Slide preparation mode")
[Status]	[Not prepared] [Preparing] [OK] [Err. (low reliab.)] [Error (Abort)]	You can filter the list by specifying the order [Status]. For details, see the following. (▶P.48 "2.7 [Work list] screen")
[Error]	[All errors] [Unchecked error] [Checked error]	You can filter the list by specifying the error confirmation status. If you want to show all orders that have an error regardless of the confirmation status, specify [All errors].
[Alarm]	[Exists]	Displays the order for which the alarm is enabled when the sample preparation process completes.

2.7.2 Changing the items displayed in the order list

You can change the items shown in the order list, the item display order, and the scroll fixing position.

1 Touch [Display] on the toolbar and touch [Customize displayed items].

The following dialog box appears.



2 Set [Displayed Parameter].

[Parameter list]	List of items that can be added to [Displayed Parameter].
[Displayed Parameter]	List of items shown in the [Work list] screen. The items will appear in the order shown in [Displayed Parameter] from the left of the order list.
Fixed display item	These items always appear and do not scroll when the [Work list] screen is scrolled horizontally. Insert items between [<<Fixed>>] and [<<Floating>>].
Scroll display item	These items scroll when the [Work list] screen is scrolled horizontally. Insert items under [<<Floating>>].
[>>Insert>>]	Touch to move the item selected in [Parameter list] above the item selected in [Displayed Parameter].
[>>Add>>]	Touch to move the item selected in [Parameter list] to the bottom of [Displayed Parameter].
[<<Delete<<]	Touch to move the item selected in [Displayed Parameter] to the original position of [Parameter list].

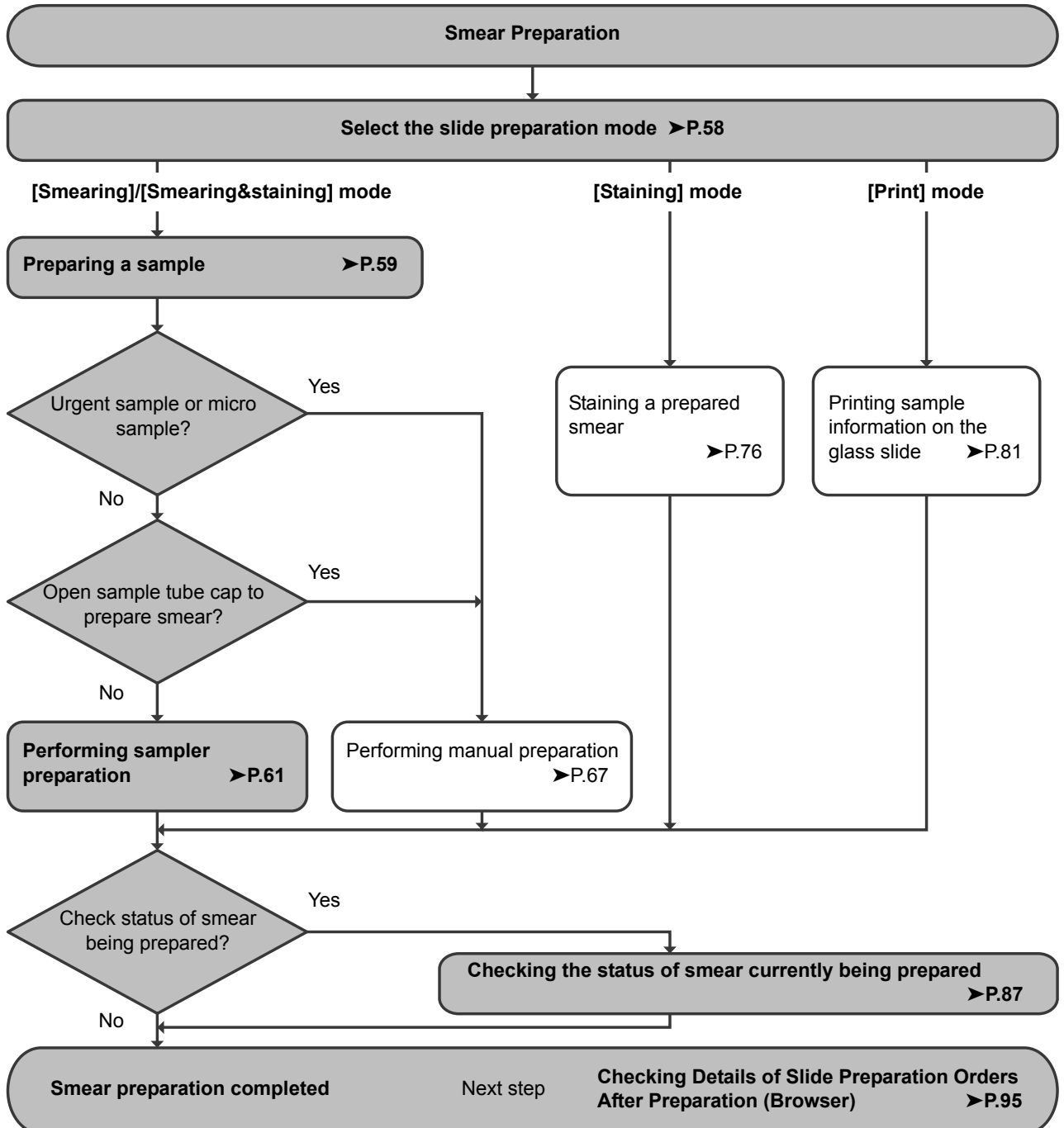
3 Touch [OK].

The dialog box closes and the items shown in the order list change according to the set conditions.

Chapter 3 Smear Preparation

3.1 Flow of smear preparation

The flow chart below shows the flow of smear preparation. The typical flow is shown in gray.



3.2 Overview of smear preparation

3.2.1 Types of slide preparation

There are 2 methods of preparing a slide on the instrument. You can use the method that best suits your purpose and the sample volume.

● Sampler preparation

When you place sample tubes with the cap closed in a sample rack, all steps from sample mixing to smear preparation are performed automatically. You can place up to 50 samples in the sampler at a time.





● Manual preparation

- Use this method for urgent samples or samples that have volume that is not sufficient for the system / rack mode.
- Manually mix sample by inversion.
- Place sample in sample tube holder for smear preparation.

3.2.2 Slide preparation mode

You can select the slide preparation mode as shown in the table below.

✓: Can be select — : Cannot be select

Slide preparation mode	Sampler preparation	Manual preparation	Description
[Smearing&staining] mode 	✓	✓	Use this method when you want to print sample information on the glass slide, and perform sample smear preparation and staining.
[Smearing] mode 	✓	✓	Use this method when you want to print sample information on the glass slide, and only prepare the sample smear.
[Staining] mode 	—	✓	Use this mode when you only want to stain a smear sample that was prepared manually, or a smear sample for which only smear preparation was performed on the instrument.
[Print] mode 	—	✓	Use this method when you only want to print sample information on the glass slide.

3.3 Preparing a sample

The instrument can only be used to prepare smears from whole blood (venous blood) samples.

● Handling whole blood

Collect venous blood with anticoagulant (EDTA-2K, EDTA-3K or EDTA-2Na). Draw the specified amount of blood as per the package insert of the tube used.



Caution

- When preparing a refrigerated sample, take the sample out of the refrigerator at least 15 minutes prior to preparation to allow the sample to return to room temperature.
If the sample has not returned to room temperature, smear quality may not be suitable for microscopic examination.
- Performing manual preparation, verify that the sample has been mixed sufficiently before placing the sample. If too much time elapses between mixing and sample preparation, smear quality may not be suitable for microscopic examination.
This is especially important for samples from patients prone to high degrees of sedimentation or for samples that have been refrigerated/transported in a cool environment.
- Use only the specified anticoagulant.
Using a non-specified anticoagulant may result in hemolysis or platelet aggregation, preventing correct analysis results.
- Use the sample tube according to the instructions on the sample tube package insert.
If the sample volume is greater than the specified volume, the sample may not mix sufficiently or may coagulate, and smear quality may not be suitable for microscopic examination.
When the sample volume is normal, there will be an air layer at the top of the sample tube.
If there is no air layer, the sample will not mix when the sample tube is turned over. Check the sample volume before mixing.
- The instrument is equipped with a blood aspiration sensor. However, there is a possibility that the sensor is not able to detect blood aspiration error if the sample volume is low and smear quality may not be suitable for microscopic examination.

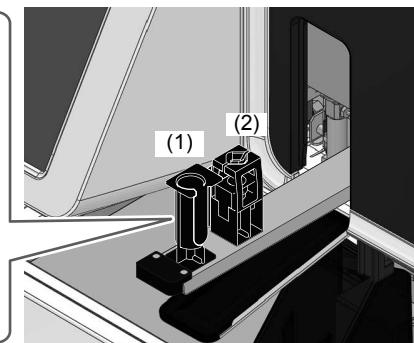
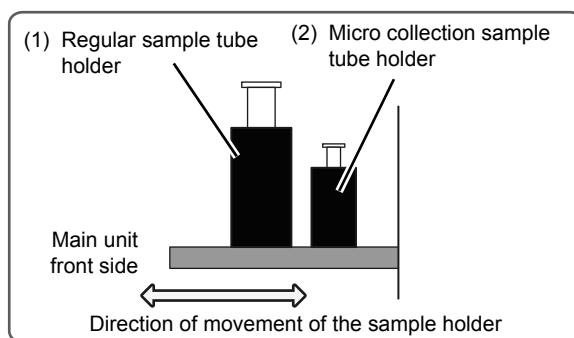
● **Sample volume**

Sample aspiration volumes and sample volumes required for smear preparation are indicated below.

For sample tubes that can be used, see "General Information".

(▶General Information "Chapter 5: 5.2 Usable sample tubes, sample racks, glass slides, and magazines")

Slide preparation method	Sample tube	Cap	Sample tube setting position	[Cap open]	Sample aspiration volume	Required sample volume
Sampler preparation	Regular sample tube	With a cap	Sample rack	—	70 μL	500 μL
	Raised Bottom Tube		RBT rack			250 μL
Manual preparation	Regular sample tube	With a cap	Regular sample tube holder	OFF	70 μL	500 μL
	Regular sample tube (preparation of 1 slide)	Without a cap	Regular sample tube holder	ON	38 μL	300 μL
	Regular sample tube (preparation of 2 slides)				70 μL	
	Raised Bottom Tube	With a cap	Regular sample tube holder	OFF	70 μL	250 μL
	Micro collection sample tube (preparation of 1 slide)	Without a cap	Micro collection sample tube holder	—	38 μL	110 μL
	Micro collection sample tube (preparation of 2 slides)				70 μL	140 μL



3.4 Performing sampler preparation

In [Smearing&staining] mode, glass slide printing, smear preparation, and staining are performed. In [Smearing] mode, only glass slide printing and smearing are performed.

The preparation procedures are the same for [Smearing&staining] mode and [Smearing] mode, however, the storage location of the prepared slide is different.

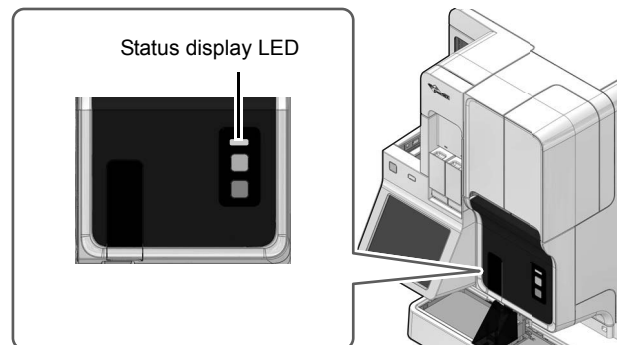


Caution

- Smear quality may not be suitable for microscopic examination due to insufficient mixing if the sample is left for more than 4 hours and the cells/plasma have separated. Therefore, in case of using such samples, make sure to mix the samples thoroughly before setting them on the sampler.
- Use the sample tube according to the instructions on the sample tube package insert. If the sample volume is greater than the specified volume, the sample may not mix sufficiently or may coagulate, and smear quality may not be suitable for microscopic examination.
- When the sample volume is normal, there will be an air layer at the top of the sample tube. If there is no air layer, the sample will not mix when the sample tube is turned over. Check the sample volume before mixing.

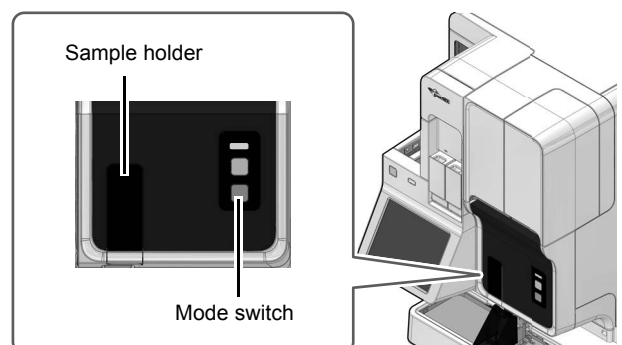
1 Make sure that the instrument is in the ready state.

If the status display LED is not lit green, wait until it lights.



2 Make sure that the sample holder is retracted into the main unit.

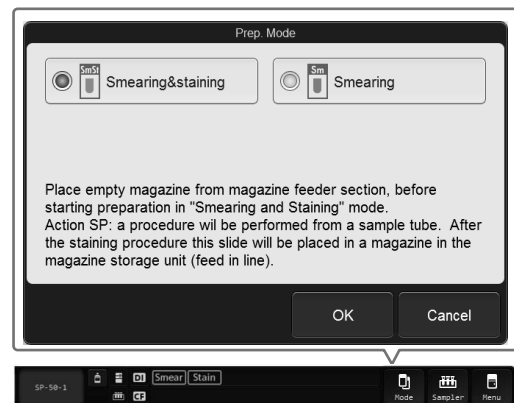
If the sample holder is retracted, it means that the sampler preparation is enabled.
If the sample holder is ejected out, press the mode switch on the main unit front side.



3 To change the slide preparation mode, touch [Mode] in the status area.

The dialog box on the right appears.

This step is not necessary if you did not need to change the slide preparation mode. Go to the step 6.



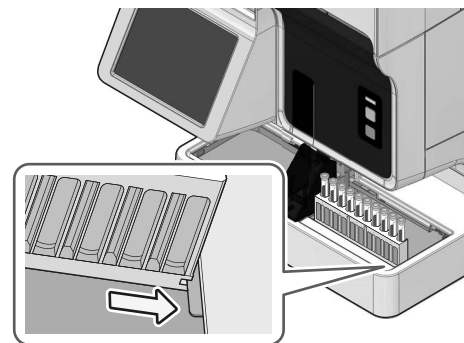
4 Touch [Smearing&staining] or [Smearing].

5 Touch [OK].

The dialog box closes and the slide preparation mode is enabled.

6 Place the sample rack containing the sample tubes in the right sampler pool.

Slide the groove on the sample rack onto the protrusion on the right side (when you face the front of the instrument). A maximum of 5 sample racks can be placed.

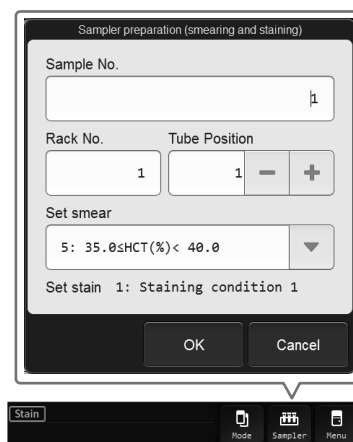


Caution

- Place the sample rack horizontally toward the instrument. Correct operation is not guaranteed if the racks are placed diagonally.
- Check that no dirt or foreign objects are on the left and right sampler pools and the measurement line. Make sure that there is no dirt or other foreign substance on the bottom of the sample rack and sure that the sample rack is not damaged or deformed.
- Raised Bottom Tube and RBT rack can be used only when the instrument is connected to XN series. These cannot be used for SP-50 standalone sampler preparation. There is a risk of instrument failure if used.

7 Touch [Sampler] in the status area.

The dialog box on the right appears.



8 Touch and set the displayed items.

[Sample No.]	<p>You can change the sample number of the starting sample tube position. You can enter up to 22 characters.</p> <p>The sample number does not need to be entered if you are using barcodes.</p> <p>If you are using the optional hand-held barcode reader, you can also read the barcode to input [Sample No.].</p> <p>The [Sample No.] of each subsequent sample from which a smear is prepared is the number obtained by automatically incrementing by 1.</p>
[Rack No.]	<p>You can change the rack number. You can enter up to 6 characters.</p> <p>When using the RBT rack, specify the rack number from [RBT001] to [RBT999].</p>
[Tube Position]	<p>You can change the sample tube position number. Any number between 1 and 10 can be entered.</p> <p>Values can also be adjusted by touching [-] or [+].</p>
[Set smear]	<p>You can edit the smear conditions. For details, see the following. (▶P.121 "Chapter 5: 5.5.1 Smearing condition setting")</p>
[Set stain]	<p>Appears only when using [Smearing&staining] mode.</p> <p>The staining conditions configured as default appear. For details on default settings, see the following. (▶P.126 "Chapter 5: 5.5.3 Default order setting")</p>

9 Touch [OK].

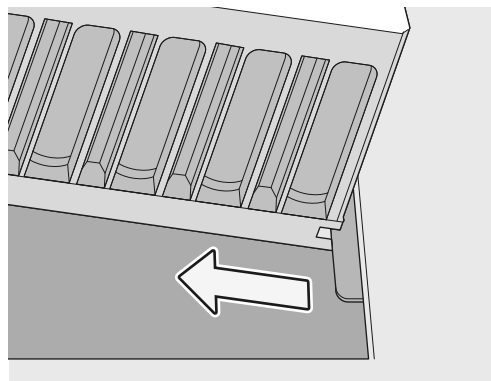
The dialog box closes, and the slide preparation starts.
The time for the slide preparation is as shown below.

Slide preparation mode	Staining method	Time
[Smearing] mode	—	About 3 minutes
[Smearing&staining] mode	Double staining	About 25 minutes
	Single staining	About 20 minutes

- If you have an additional smear to be prepared during sampler preparation
Place the sample rack containing the samples in the right sampler pool.
- If you need to interrupt sampler preparation for an urgent sample
Press the mode switch on the main unit front side to pause sampler smear preparation and change to manual preparation*. Prepare the sample manually.
(► **P.67** "3.5 Performing manual preparation")
When you have finished manual preparation, press the mode switch on the main unit front side. Sampler preparation will resume.
* In [Smearing] mode, further sampler preparation will be canceled. When manual preparation finishes, sampler preparation of unprepared samples will not resume even if you press the mode switch.
- If you want to stop sampler preparation
If you touch [Sampler] in the status area at the bottom of the screen during sampler preparation, the stop sampler preparation confirmation dialog box will appear. Touch [Yes] to stop sampler preparation.

10 Remove the sample rack whose samples have been aspirated.

The finished sample racks are transported to the left sampler pool. When removing the sample rack, check that the protrusion has cleared the groove, and then remove the sample rack.



11 Remove the prepared smears.

The prepared smears will be stored in the magazine. When preparation of all smears is completed, the magazine containing the samples is ejected to the storage location for the slide preparation mode used. Retrieve the magazine that contains the smears.

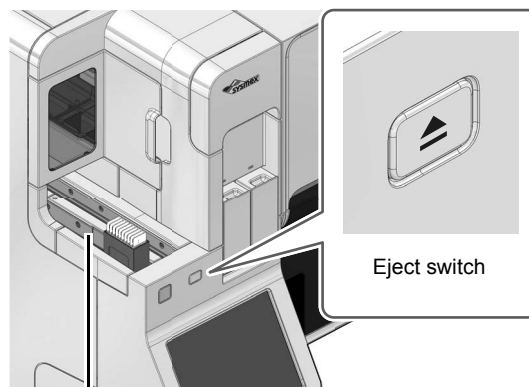


Caution

When removing the magazine, do not grab the glass slide. Remove the magazine one by one, and take care not to drop the glass slides. Otherwise the glass slides may break up and cause injury.

● In [Smearing&staining] mode

The magazine is fed out to the magazine storage unit.



Magazine storage unit

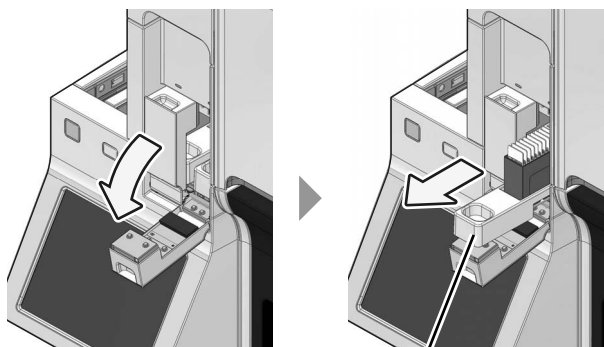


Note:

- You can change the timing of magazine feed-out in the [Magazine settings] dialog box. For details, see the following.
(▶P.147 "Chapter 5: 5.6.6 Magazine settings")
- You can forcibly feed out a magazine by pressing the eject switch, regardless of the settings in the [Magazine settings] dialog box. A magazine cannot be forcibly fed out in the following cases.
 - When there are no empty magazines in the magazine holder
 - When the magazine storage unit is full

● In [Smearing] mode

The magazine is fed out to the manual magazine holder.



Manual magazine holder



Caution

Open the manual magazine holder carefully when the staining hand error occurs. Failure to do so could result in damage to the staining hand or glass slide.

3.5 Performing manual preparation

In the following cases, prepare the smear manually.

- When you want to interrupt sampler preparation for an urgent sample
- When you want to prepare a smear using a micro collection sample tube
- When you only want to stain an already-prepared smear
- When you only want to print sample information on the glass slide

3.5.1 Preparing a slide in the [Smearing&staining]/[Smearing] mode

In [Smearing&staining] mode, glass slide printing, smear preparation, and staining are performed. In [Smearing] mode, only glass slide printing and smearing are performed.

The preparation procedures and slide storage locations are different for [Smearing&staining] mode and [Smearing] mode. When using [Smearing&staining] mode, start from step 6.



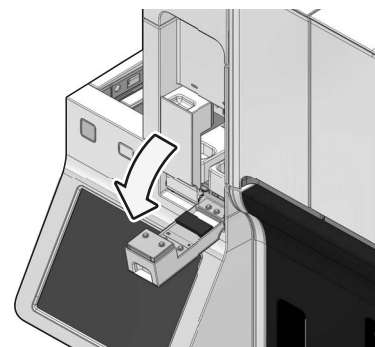
Caution

The instrument does not mix the sample. Be sure to perform mixing immediately before you set sample tube in the sample holder.

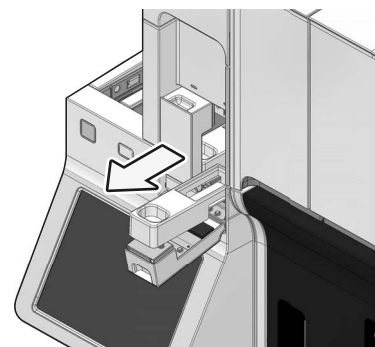
1 Open the manual magazine holder cover if the instrument is in [Smearing] mode.

Open the cover forward. You can use either the left or right manual magazine holder.

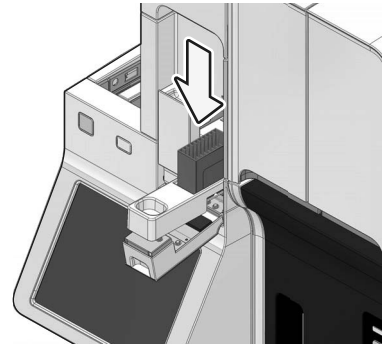
This step is not necessary if an empty magazine is already loaded or [Smearing&staining] mode is activated. Go to the step 6.



2 Pull out the manual magazine holder.



3 Load an empty magazine in the manual magazine holder.

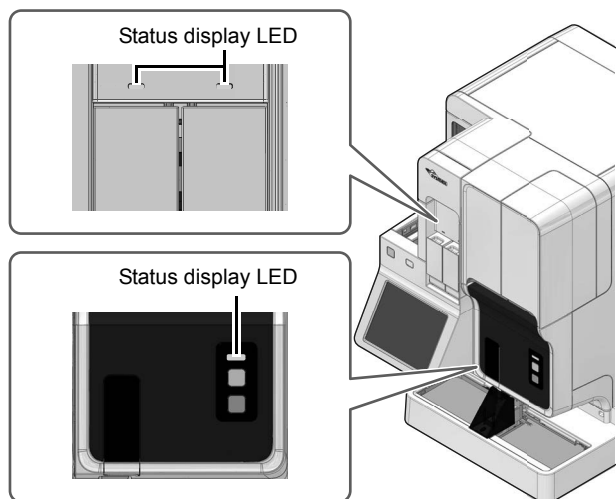


4 Push in the manual magazine holder.

5 Close the manual magazine holder cover.

6 Check the instrument and status display LED of manual magazine holder.

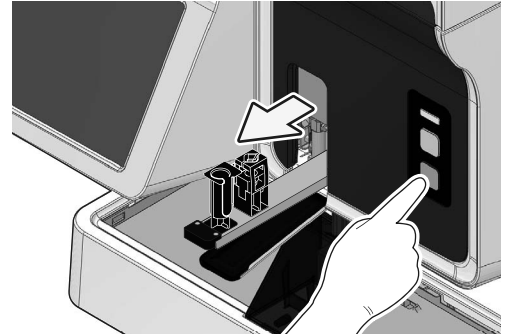
If the status display LED is not lit green, wait until it lights.



7 If the sample holder has not been ejected out, press the mode switch on the main unit front side.

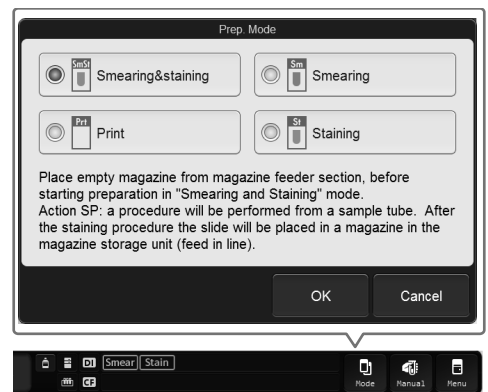
The sample holder slides out forward.

This step is not necessary if the sample holder is already ejected. Go to the step 8.



8 Touch [Mode] in the status area.

The dialog box on the right appears.



9 Touch [Smearing&staining] or [Smearing].

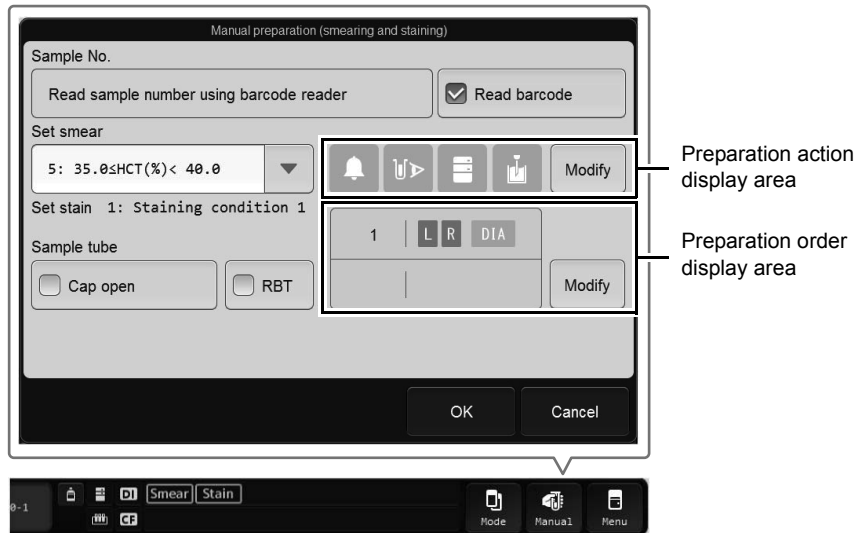
10 Touch [OK].

The dialog box closes and the slide preparation mode is enabled.

11 To change the smear preparation conditions, touch [Manual] in the status area.

The [Manual preparation] dialog box appears.

This step is not necessary if you do not need to change the slide preparation conditions. Go to the step 14.

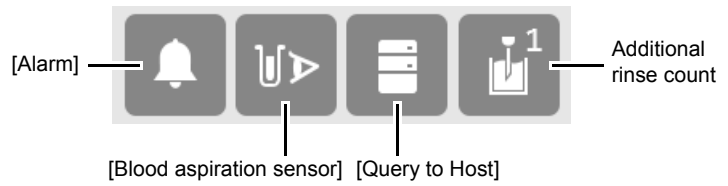


[Manual preparation] dialog box
([Smearing&staining]/[Smearing] mode)

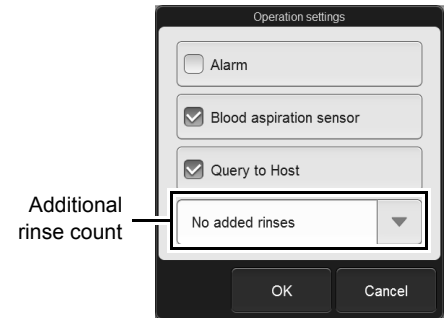
12 Touch and set the displayed items.

[Sample No.]	Enter a sample number. You can enter up to 22 characters. Numbers that begin with [ERR] are reserved by the system and cannot be used. When the [Read barcode] checkbox is selected, you do not need to enter the sample number. If you are using the optional hand-held barcode reader, you can also read the barcode to input [Sample No.].
[Read barcode]	Select this checkbox to read a sample barcode with the barcode reader of the main unit. This can only be selected when sample barcode reading is enabled in the barcode settings. For details, see the following. (▶P.144 "Chapter 5: 5.6.3 Barcode reader setting")
[Set smear]	Set smearing conditions. For details, see the following. (▶P.121 "Chapter 5: 5.5.1 Smearing condition setting")
[Set stain]	Appears only when using [Smearing&staining] mode. The staining conditions configured as default appear. For details on default settings, see the following. (▶P.126 "Chapter 5: 5.5.3 Default order setting")

Preparation action display area This shows settings for slide preparation actions by following icons. The icon is displayed in light blue when the setting is ON.



[Modify] Touch to display the dialog box on the right. The settings below are available.



[Alarm] Selected this checkbox so that an alarm will sound at the smear preparation completion.

[Blood aspiration sensor] This can only be set when the blood aspiration sensor setting is enabled. Select this checkbox to enable the blood aspiration sensor. Remove the checkmark when the volume of blood to be aspirated is small.

[Query to Host] This can only be set when the host computer connection setting is enabled. Select the checkbox to query the host computer for the order. Remove the checkmark to prepare a smear from an urgent sample or other sample without a registered order.

Additional rinse count The options available for the number of additional cleanings for the piercer and spreader glass performed after the sample aspiration include [No added rinses], [1 added rinse], [2 added rinses], and [3 added rinses].

[Cap open] Select this checkbox to aspirate samples using the regular sample tube with the cap open.

[RBT] Select this checkbox if a Raised Bottom Tube (RBT) is used.

Preparation order display area Displays the information of the set order. The icon is displayed in light blue when the setting is ON.

[1st slide]/[2nd slide] Displays whether the glass slide used was from the left or right slide supply cassette for 1st and 2nd preparation, and whether analyzed on the DI-60.

[L]: Use a glass slide from the slide supply cassette (left).

[R]: Use a glass slide from the slide supply cassette (right).

[DIA]: Displayed only when the instrument is connected to the DI-60.
Sends the slides to the DI-60 for analysis.

[Modify] Touch to display the dialog box on the right. The settings below are available.

[Number of slide] You can select the number of preparable slides from [1 slide] or [2 slides].

[glass slide (1st)]/ Select the glass slides to be used for the 1st and 2nd glass slides from the following.

[glass slide (2nd)]

[Cassette (R)]: Use a glass slide from the slide supply cassette (right).

[Cassette (L)]: Use a glass slide from the slide supply cassette (left).

[Do not specify]: Select this when you do not need to specify whether the slide supply cassette (right) or slide supply cassette (left) is used, such as when the same type of glass slides are loaded in both.

[DIA preparation] Displayed only when the instrument is connected to the DI-60. Select the checkbox to send the selected slides to the DI-60 for analysis.

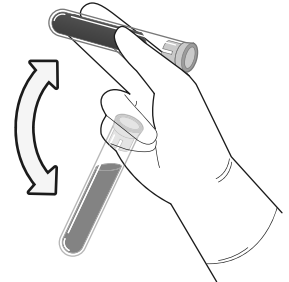


Note:

If you know in advance that the blood sample is low-density blood (e.g. blood from a dialysis patient), disable the blood aspiration sensor.

13 Touch [OK].

The dialog box closes, and the new setting is applied.

14 Mix the sample tube as shown.

e.g. Regular sample tube

15 If [Cap open] is selected or the smear will be prepared from a micro collection sample tube, open the sample tube cap.

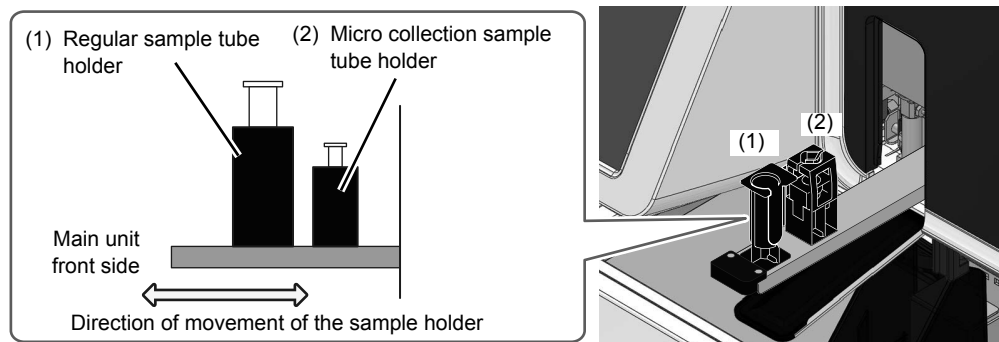
When removing the cap, use caution to prevent the sample from splattering.

This step is not necessary if the [Cap open] checkbox is deselected, or if micro collection sample tubes are not used for preparing smears. Go to the step 16.

16 Set the sample tube in the sample holder.

There are 2 sample tube holders.

When inserting a micro collection sample tube, insert the tube all the way in so that the bottom of the tube contacts the base of the holder.



- **Regular sample tube/Raised Bottom Tube**

Insert a regular sample tube or Raised Bottom Tube in the regular sample tube holder at the front of the sample holder.

- **Micro collection sample tube**

Insert a micro collection sample tube in the micro collection sample tube holder at the back of the sample holder.



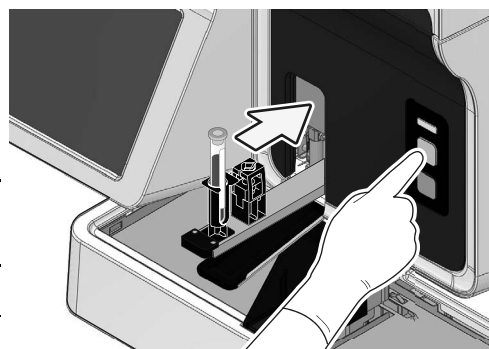
Caution

If you are using a Raised Bottom Tube, be sure to select the [RBT] checkbox in step 12. Otherwise, the instrument may be damaged.

17 Press the start switch on the main unit front side.

The sample holder is retracted, and smear preparation starts. When the sample aspiration is completed, the sample holder is ejected out forward automatically. The time for the slide preparation is as shown below.

Slide preparation mode	Staining method	Time
[Smearing] mode	—	About 3 minutes
[Smearing&staining] mode	Double staining	About 25 minutes
	Single staining	About 20 minutes



e.g. When a regular sample tube is set

18 Remove the sample tube from the sample holder.

19 Repeat steps 8 through 18 to continue performing manual preparations.

This step is not necessary if you do not need to continue performing manual preparations. Go to the step 20.

20 Press the mode switch on the main unit front side.

The sample holder retracted into the instrument.

21 Remove the prepared smears.

The prepared smears will be stored in the magazine. When preparation of all smears is completed, the magazine containing the samples is ejected to the storage location for the slide preparation mode used. Retrieve the magazine that contains the smears.

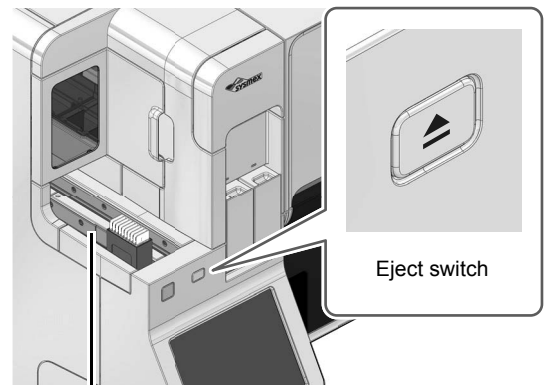


Caution

When removing the magazine, do not grab the glass slide. Remove the magazine one by one, and take care not to drop the glass slides. Otherwise the glass slides may break up and cause injury.

- In [Smearing&staining] mode

The magazine is fed out to the magazine storage unit.



Magazine storage unit

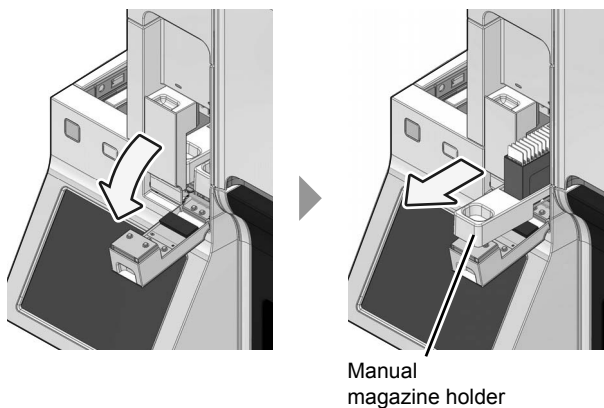


Note:

- You can change the timing of magazine feed-out in the [Magazine settings] dialog box. For details, see the following.
(▶P.147 "Chapter 5: 5.6.6 Magazine settings")
- You can forcibly feed out a magazine by pressing the eject switch, regardless of the settings in the [Magazine settings] dialog box. A magazine cannot be forcibly fed out in the following cases.
 - When there are no empty magazines in the magazine holder
 - When the magazine storage unit is full

● In [Smearing] mode

The magazine is fed out to the manual magazine holder.



Caution

Open the manual magazine holder carefully when the staining hand error occurs. Failure to do so could result in damage to the staining hand or glass slide.

3.5.2 Staining a prepared smear

[Staining] mode is used to only stain a smear sample that was prepared manually, or a smear sample for which only smear preparation was performed on the instrument.

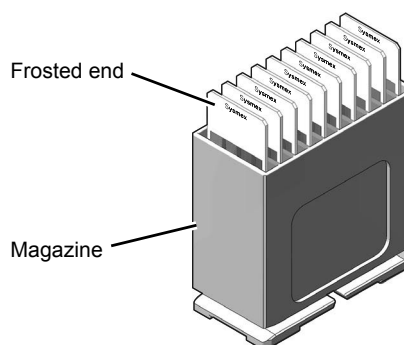


Note:

A number that begins with [STAIN-] is automatically assigned as the [Sample No.] of a sample prepared in [Staining] mode.

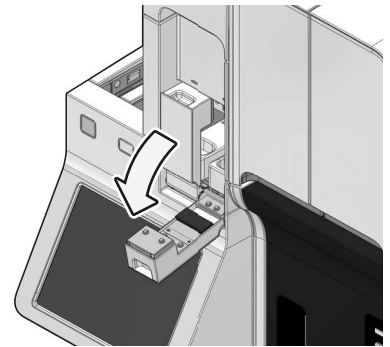
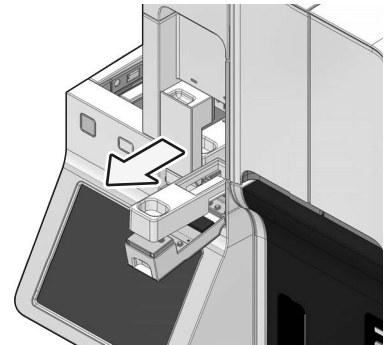
1 Load smeared glass slides to the magazine.

Load glass slides so that they face the same direction. With the frosted end of the slide facing to the front, the slide is successively stained from the front.

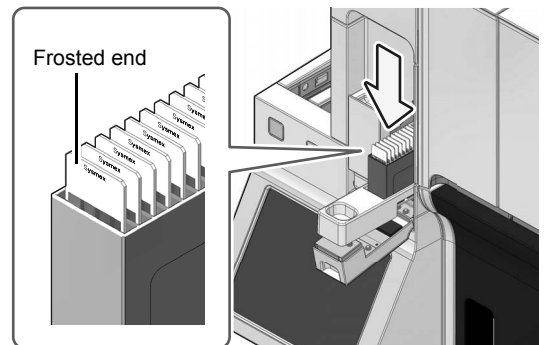


2 Open the manual magazine holder cover.

Open the cover forward. The staining process will start regardless of which of the right and left manual magazine holder the magazine was loaded. If both manual magazine holders were loaded, the left magazine will be processed first.

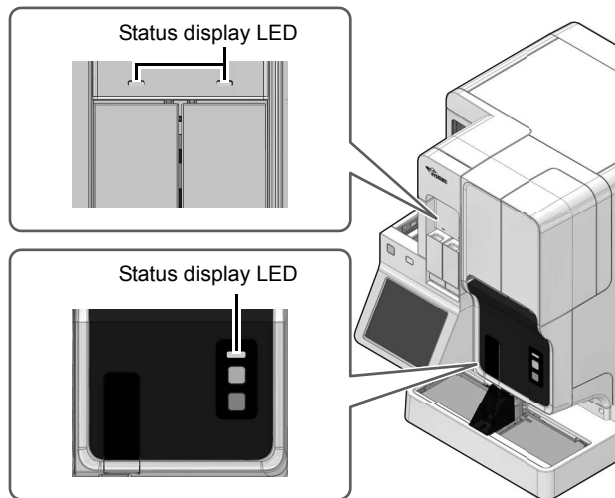
**3 Pull out the manual magazine holder.****4 Load the magazine that holds the glass slide in the manual magazine holder.**

Load glass slides so that the frosted end faces forward.

**5 Push in the manual magazine holder.****6 Close the manual magazine holder cover.**

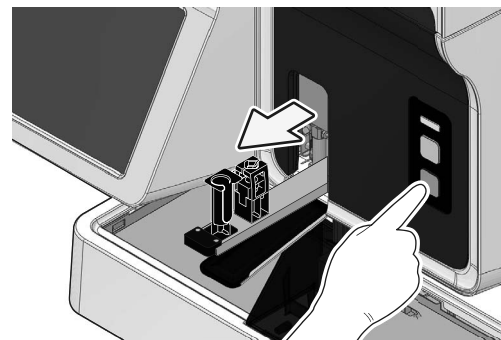
7 Check the instrument and status display LED of manual magazine holder.

If the status display LED is not lit green, wait until it lights.



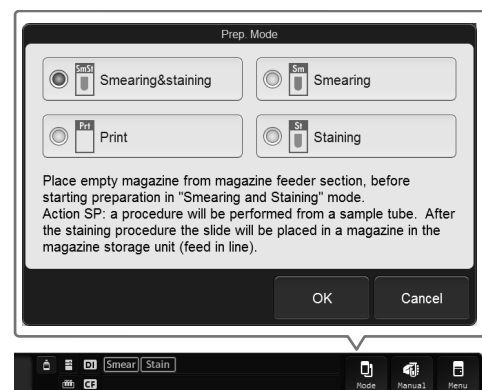
8 If the sample holder has not been ejected out, press the mode switch on the main unit front side.

The sample holder slides out forward.
This step is not necessary if the sample holder is already ejected. Go to the step 9.



9 Touch [Mode] in the status area.

The dialog box on the right appears.



10 Touch [Staining].**11 Touch [OK].**

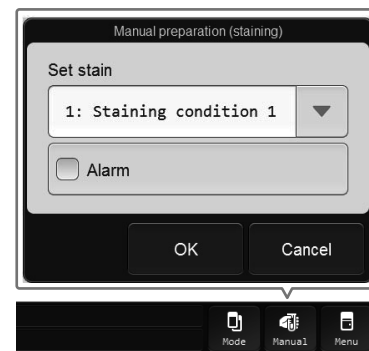
The dialog box closes and the slide preparation mode is enabled.

12 To change the smear preparation conditions, touch [Manual] in the status area.

The dialog box on the right appears.

This step is not necessary if you do not need to change the settings.

Go to the step 14.

**[Set stain]**

Set the staining conditions to be used. For details, see the following.
(▶P.123 "Chapter 5: 5.5.2 Staining condition setting")

[Alarm]

Selected this checkbox so that an alarm will sound at the smear preparation completion.

13 Touch [OK].

The dialog box closes, and the new setting is applied.

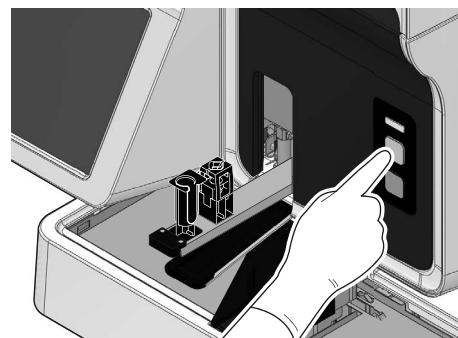
14 Press the start switch on the main unit front side.

Staining starts.

The time required for smear preparation varies depending on the settings.

For details, see the following.

(▶P.124 "Chapter 5: ● Changing the staining condition settings")

**15 Repeat steps 9 through 14 to continue performing manual preparations.**

This step is not necessary if you do not need to continue performing manual preparations. Go to the step 16.

16 Press the mode switch on the main unit front side.

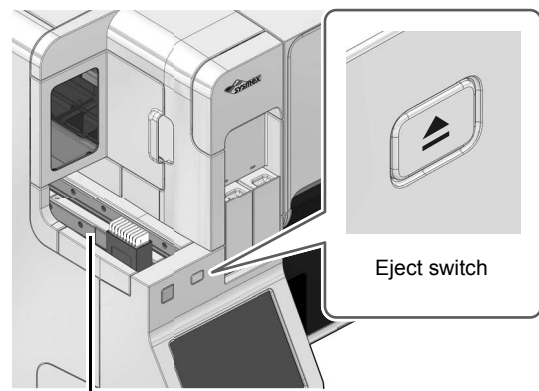
The sample holder retracted into the instrument.

**Note:**

If a sample is manually loaded while the sampler preparation process is in progress in [Smearing&staining] mode, the instrument will automatically resume the sampler preparation process after the staining process begins for all samples in the manual magazine holder.

17 Remove the prepared smears.

The prepared smears will be stored in the magazine. When preparation of all smears is completed, the magazine storing the samples is loaded will be fed out to the magazine storage unit. Retrieve the magazine containing the smears from the magazine storage unit.



Magazine storage unit

**Caution**

When removing the magazine, do not grab the glass slide. Remove the magazine one by one, and take care not to drop the glass slides. Otherwise the glass slides may break up and cause injury.

**Note:**

- You can change the timing of magazine feed-out in the [Magazine settings] dialog box. For details, see the following.
(▶P.147 "Chapter 5: 5.6.6 Magazine settings")
- You can forcibly feed out a magazine by pressing the eject switch, regardless of the settings in the [Magazine settings] dialog box. A magazine cannot be forcibly fed out in the following cases.
 - When there are no empty magazines in the magazine holder
 - When the magazine storage unit is full

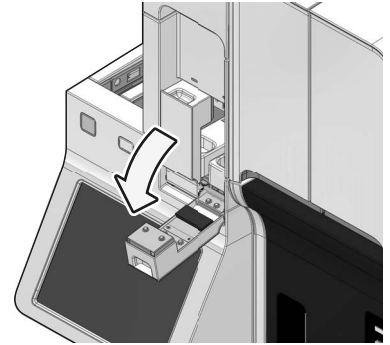
3.5.3 Printing sample information on the glass slide

When manually preparing a slide, you can print sample information such as the sample number or barcode on the glass slide.

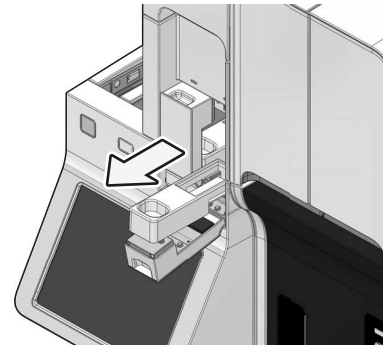
1 Open the manual magazine holder cover.

Open the cover forward. You can use either the left or right manual magazine holder.

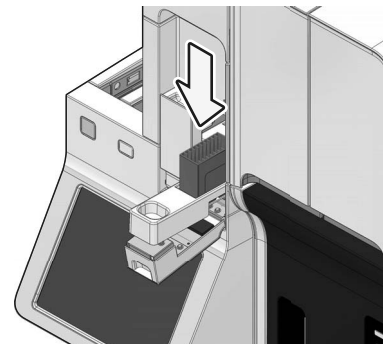
This step is not necessary if an empty magazine is already loaded. Go to the step 6.



2 Pull out the manual magazine holder.



3 Load an empty magazine in the manual magazine holder.

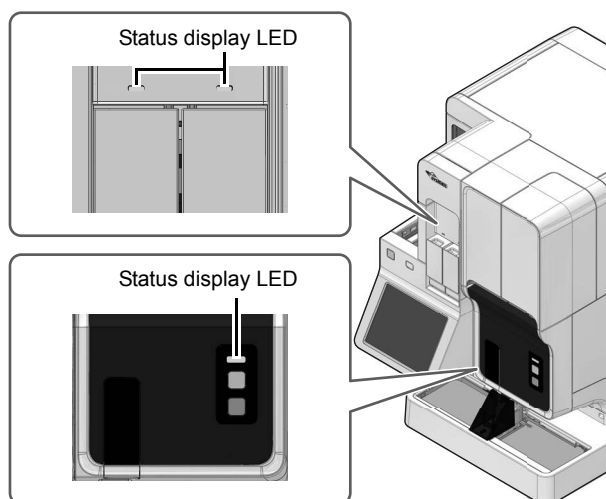


4 Push in the manual magazine holder.

5 Close the manual magazine holder cover.

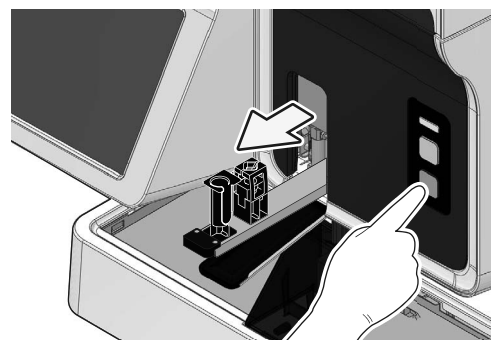
6 Check the instrument and status display LED of manual magazine holder.

If the status display LED is not lit green, wait until it lights.



7 If the sample holder has not been ejected out, press the mode switch on the main unit front side.

The sample holder slides out forward.
This step is not necessary if the sample holder is already ejected. Go to the step 8.



8 Touch [Mode] in the status area.

The dialog box on the right appears.

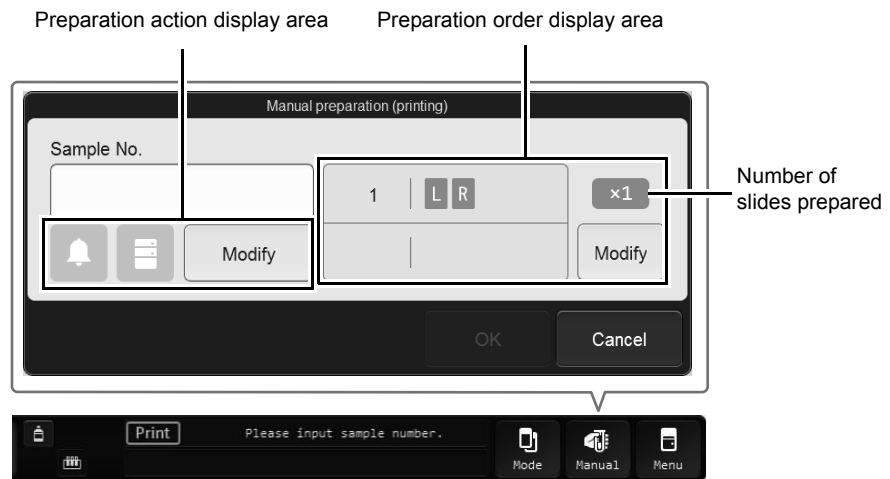
**9 Touch [Print].****10 Touch [OK].**

The dialog box closes and the slide preparation mode is enabled.

11 To change the smear preparation conditions, touch [Manual] in the status area.

The [Manual preparation] dialog box appears.

This step is not necessary if you do not need to change the slide preparation conditions. Go to the step 14.



[Manual preparation] dialog box ([Print] mode)

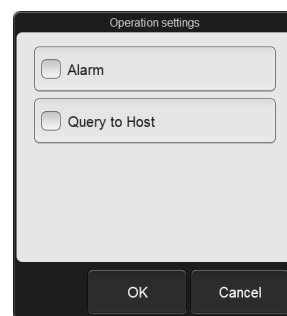
12 Touch and set the displayed items.

[Sample No.] Enter a sample number. You can enter up to 22 characters.
If you are using the optional hand-held barcode reader, you can also read the barcode to input [Sample No.].

Preparation action display area This shows settings for slide preparation actions by following icons. The icon is displayed in light blue when the setting is ON.



[Modify] Touch to display the dialog box on the right. The settings below are available.



[Alarm] Selected this checkbox so that an alarm will sound at the smear preparation completion.

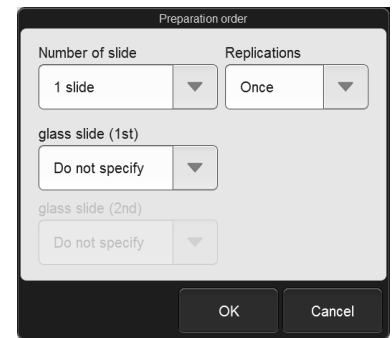
[Query to Host] This can only be set when the host computer connection setting is enabled. Select the checkbox to query the host computer for the order. Remove the checkmark to prepare a smear from an urgent sample or other sample without a registered order.

Preparation order display area Displays the information of the set order. The icon is displayed in light blue when the setting is ON.

[1st slide]/[2nd slide] Displays whether the glass slide used was from the left or right slide supply cassette for 1st and 2nd preparation.
[L]: Use a glass slide from the slide supply cassette (left).
[R]: Use a glass slide from the slide supply cassette (right).

Number of slides prepared Displays the number of slides prepared from 1 sample.

[Modify] Touch to display the dialog box on the right.
The settings below are available.



[Number of slide] You can select the number of preparable slides from [1 slide] or [2 slides].

[Replications] You can select [Once] to [5 times] for the number of slides prepared from 1 sample.

**[glass slide (1st)]/
[glass slide (2nd)]** Select the glass slides to be used for the 1st and 2nd glass slides from the following.

- [Cassette (R)]: Use a glass slide from the slide supply cassette (right).
- [Cassette (L)]: Use a glass slide from the slide supply cassette (left).
- [Do not specify]: Select this when you do not need to specify which slide supply cassette is used such as when the same type of glass slides are loaded in both supply cassettes.

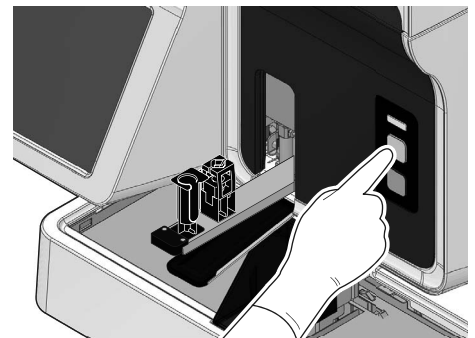
13 Touch [OK].

The dialog box closes, and the new setting is applied.

14 Press the start switch on the main unit front side.

Printing starts.

Printing takes approximately 3 minutes.



15 Repeat steps 8 through 14 to continue performing manual preparations.

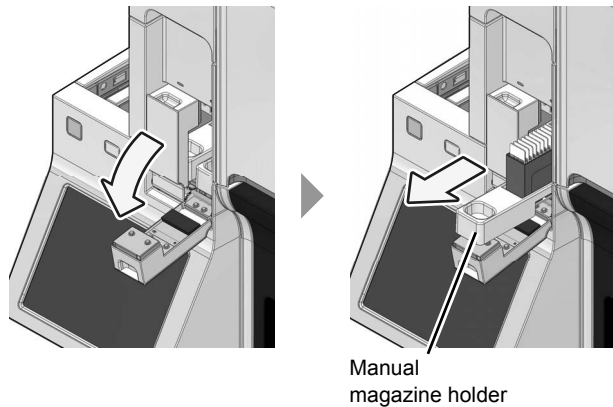
This step is not necessary if you do not need to continue performing manual preparations. Go to the step 16.

16 Press the mode switch on the main unit front side.

The sample holder retracted into the instrument.

17 Remove the prepared smears.

The prepared glass slide will be stored in the magazine in the manual magazine holder.
Remove the magazine containing the smears from the manual magazine holder.



Caution

When removing the magazine, do not grab the glass slide. Remove the magazine one by one, and take care not to drop the glass slides.
Otherwise the glass slides may break up and cause injury.

3.6 Checking the status of smear currently being prepared

You can check the status of smear preparation and whether an error has occurred on the instrument.

1 Select the order of the smear you want to check in the [Work list] screen.

2 Touch [Status] on the toolbar.

The [Status] screen appears.



[Status] screen
e.g. Top view

3 Touch [Display] on the toolbar and touch [Top view]/[Display process].

The [Status] screen switches to [Top view]/[Display process].

For the details displayed in the [Status] screen, see below.

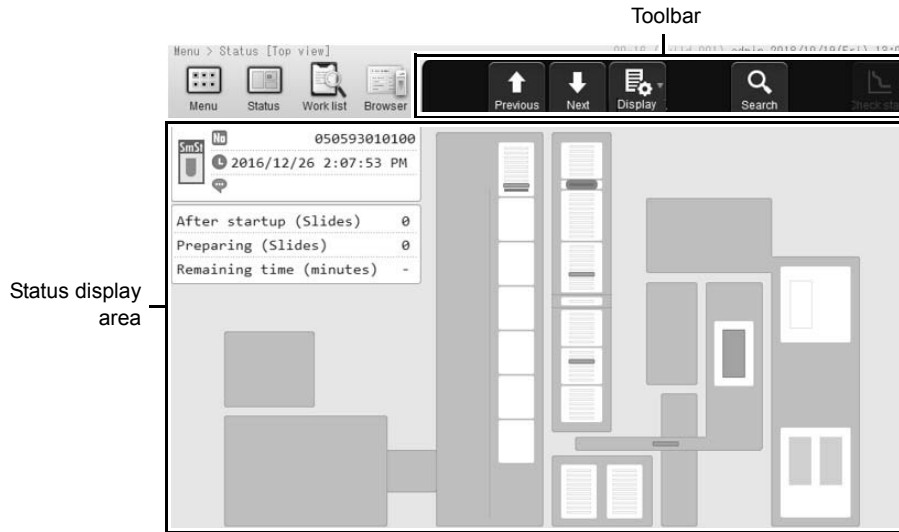
(▶P.88 "3.7 [Status] screen")

4 Check the status of the smear.

3.7 [Status] screen

Touch [Status] in the [Menu] screen to display the [Status] screen. You can also touch [Status] on the toolbar to display the screen.

In the [Status] screen, you can check the status of smear preparation and whether an error has occurred on the instrument.



[Status] screen
e.g. Top view

Toolbar	Displays buttons for each function.
[Previous]	Touch to display the order that precedes the order selected in the [Work list] screen.
[Next]	Touch to display the order that follows the order shown in the [Work list] screen.
[Display]	Touch to display a submenu, which allows you to switch the screen display formats. The options for the status display area include [Top view] and [Display process]. (▶ P.90 "3.7.1 Top view") (▶ P.92 "3.7.2 Process view")
[Search]	Touch to search for an order. You can only use search when a smear is being prepared. (▶ P.42 "Chapter 2: 2.3 Searching for slide preparation orders")

[Check status]	Touch to display a submenu, which allows you to check the instrument status. [Sensor]: Touch to check the status of the units in the instrument. [Pressure/Temperature/Humidity]: Touch to check the internal pressure, temperature and humidity status of the instrument. [Elapsed staining time]: Touch to check the elapsed time since startup or replacing reagent in the staining pool. For details, see "Troubleshooting". (▶Troubleshooting "Chapter 2: 2.16 Checking the status of the instrument (sensor)") (▶Troubleshooting "Chapter 2: 2.18 Confirming the instrument pressure/temperature/humidity") (▶Troubleshooting "Chapter 2: 2.19 Checking the elapsed staining time")
Status display area	Displays the status of smear preparation, the location of errors that occur on the instrument, and other information.

3.7.1 Top view

Displays the instrument status, current smear position, and other information by block in top view.



[Status] screen (top view)

Sample information display area	Displays the information about the selected sample. (►P.93 "●Sample information display area")
[After startup (Slides)]	Displays the number of smears prepared since startup.
[Preparing (Slides)]	Displays the number of smears being prepared.
[Remaining time (minutes)]	Displays the time until completion of all preparation.
Block display area	Displays smear locations and error statuses by block. (►P.91 "●Block display area") Blocks and smears are shown in the colors below to indicate their status.

Color	Status
Deep blue outer frame (smears only)	Selected
Green (smears only)	Alarm ON
Red	Error (warning)
Yellow	Error (caution)
Gray	No errors

● Block display area

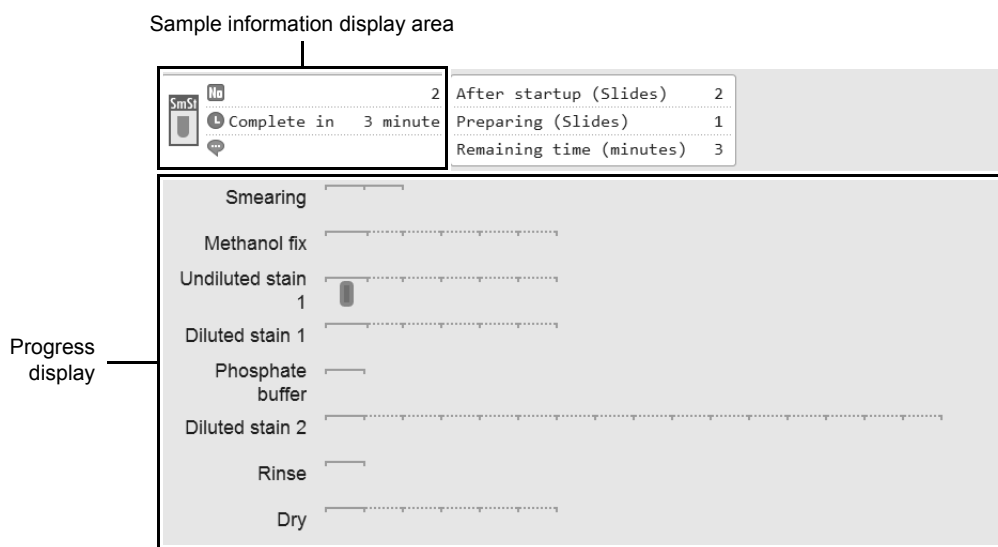
Position	Block name	Indicated value
(1)	DI-60 block* ¹	Error status
(2)	CF block (The part that conveys a magazine)* ¹	Error status* ²
(3)	CF block (The part that receives a magazine from SP-50)	
(4)	Feed-out block	<ul style="list-style-type: none"> • Error status • Magazine position • Position of smear in magazine
(5)	Staining hand 2 block	<ul style="list-style-type: none"> • Error status • Position of smear in staining pool
(6)	Staining hand 1 (duplicate) block	
(7)	Staining hand 1 block	
(8)	Manual magazine holder block	<ul style="list-style-type: none"> • Error status • Magazine presence • Presence of smear in magazine
(9)	Sample aspiration block	Error status
(10)	Smear conveyance block	<ul style="list-style-type: none"> • Error status • Smear position during conveyance from smear unit to staining pool
(11)	Sample conveyance block	Error status
(12)	Smearing/printing block	<ul style="list-style-type: none"> • Error status • Presence of glass slide in slide supply cassette • Presence of glass slide being conveyed from slide set unit to smear unit

*1 Displayed only when the instrument is connected to the DI-60.

*2 An error for all CF blocks appears when an error occurs in any particular block.

3.7.2 Process view

This shows the progress of smear preparation in each process.



[Status] screen (process view)

Sample information display area Displays the information about the selected sample. (►P.93 "●Sample information display area")

Progress display The progress of each process and sample status are shown by bar position and color. The displayed contents differ depending on the staining method.

- Progress
 - 1 scale increment is 1 minute.
 - When the sample enters the process, the bar appears at the left side and moves to the right as time elapses. When the next sample enters the process, the next bar appears at the left side.



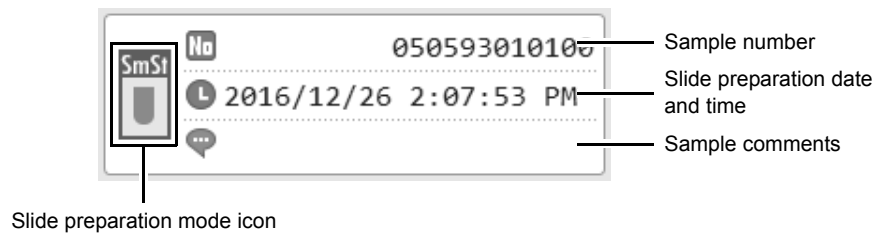
- Meaning of color
 - The sample and instrument status in each process are shown in the colors below to indicate their status.

Color	Sample status
Deep blue outer frame (smears only)	Selected
Green (smears only)	Alarm ON
Red	Error (warning)
Yellow	Error (caution)
Gray	No errors

[After startup (Slides)]	Displays the number of smears prepared since startup.
[Preparing (Slides)]	Displays the number of smears being prepared.
[Remaining time (minutes)]	Displays the time until completion of all preparation.

● Sample information display area

Displays the order selected in the [Work list] screen and the information of the order corresponding to the sample selected in the status display area of the [Status] screen. Blank when the [Status] of the selected order is [Not prepared] or there is no slide being prepared.

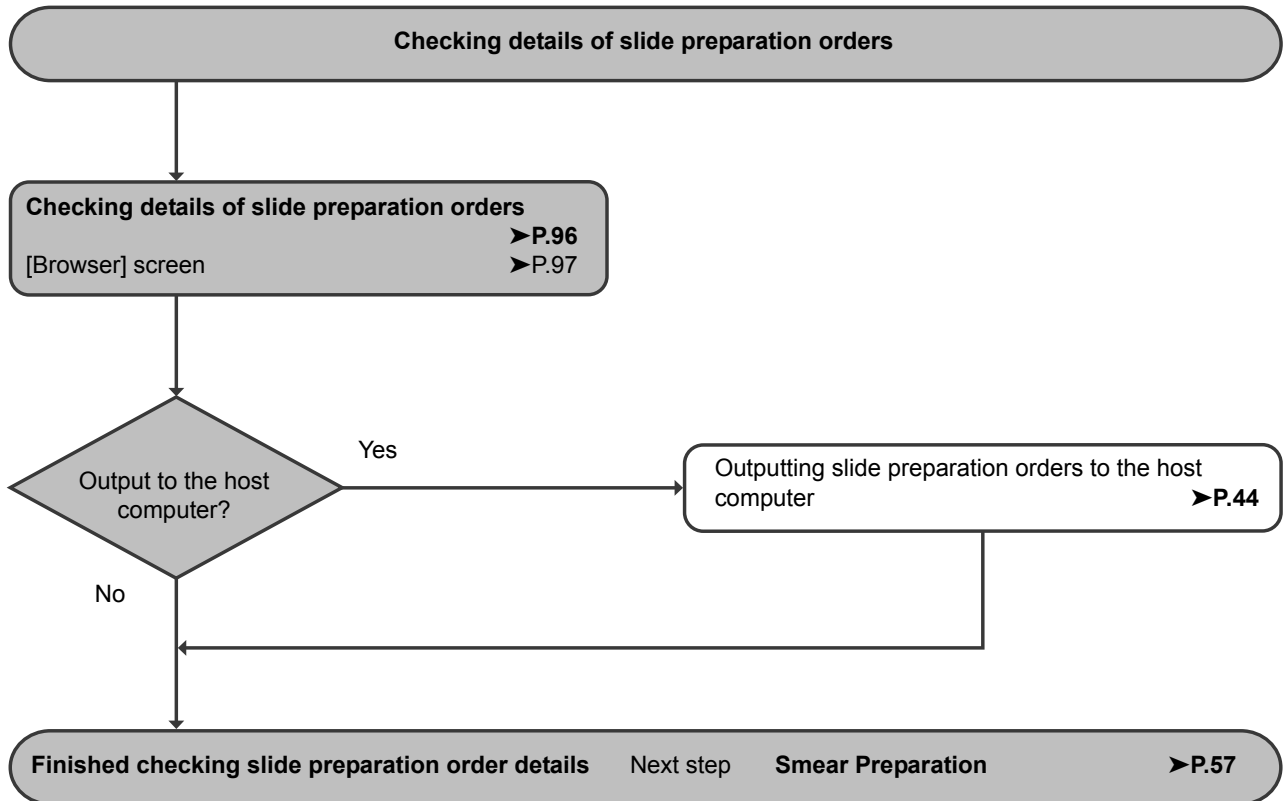


Slide preparation mode icon	Displays the set slide preparation mode. For details, see the following. (▶P.58 "3.2.2 Slide preparation mode")
Sample number	Displays a sample number.
Slide preparation date and time	Displays the date and time of completion of slide preparation. If the slide of the selected order is being prepared, the time until completion of preparation appears.
Sample comments	Displays comments about the sample.

Chapter 4 Checking Details of Slide Preparation Orders After Preparation (Browser)

4.1 Flow of checking slide preparation order details

The flow chart below shows the flow of checking slide preparation order details. The typical flow is shown in gray.

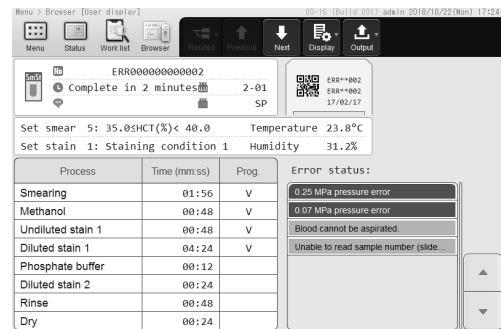


4.2 Checking details of slide preparation orders

1 Select the order you want to check in the [Work list] screen.

2 Touch [Browser] on the toolbar.

The [Browser] screen appears.



[Browser] screen

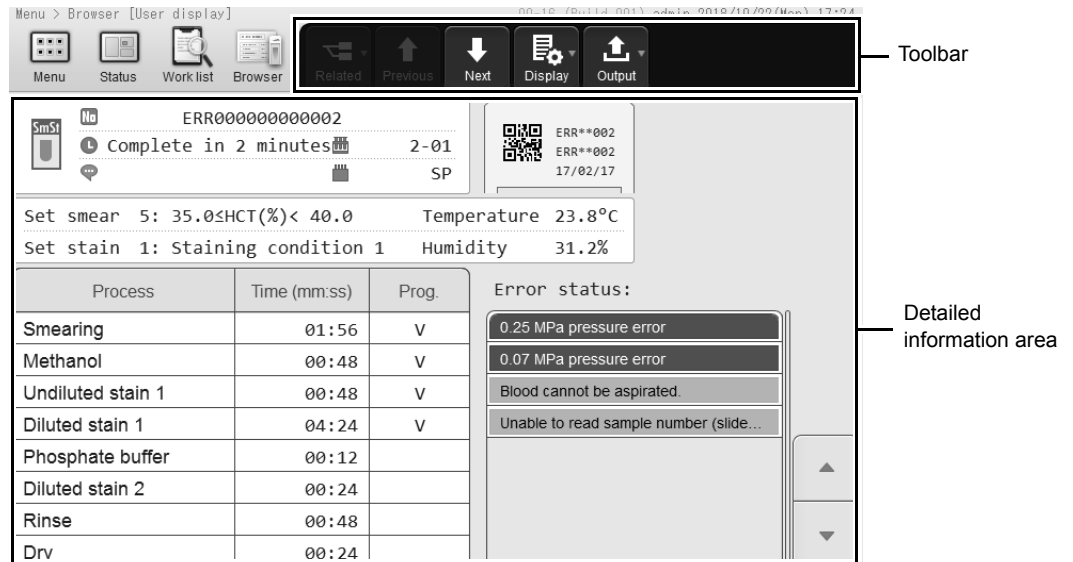
3 Check the details.

For the details displayed in the [Browser] screen, see below.

(►P.97 "4.3 [Browser] screen")

4.3 [Browser] screen

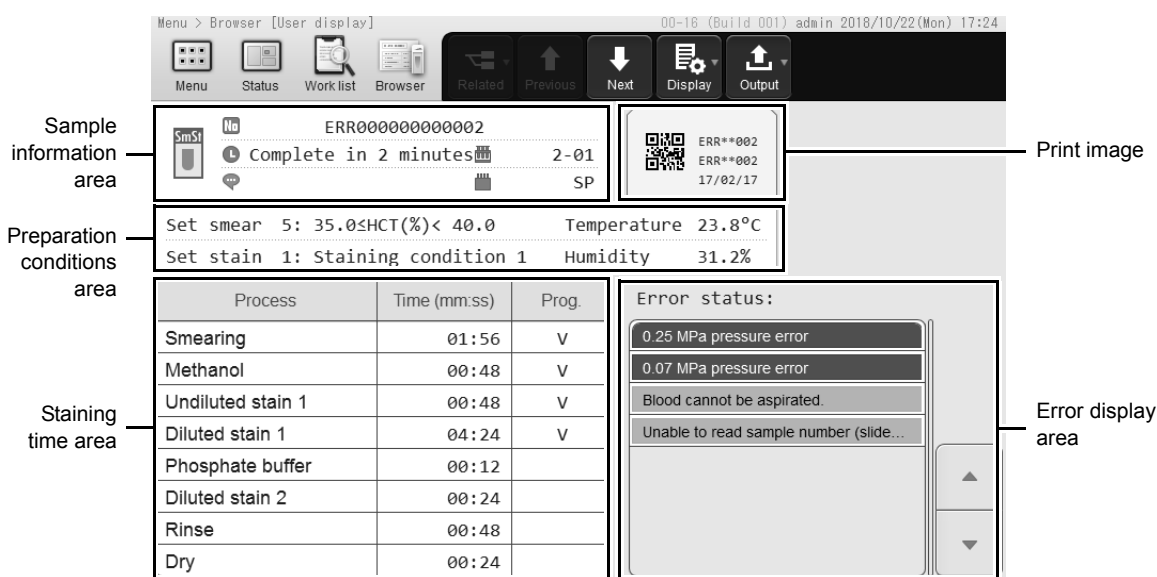
Touch [Browser] in the [Menu] screen to display the [Browser] screen. You can also touch [Browser] on the toolbar to display the screen.



[Browser] screen
e.g. Data for users

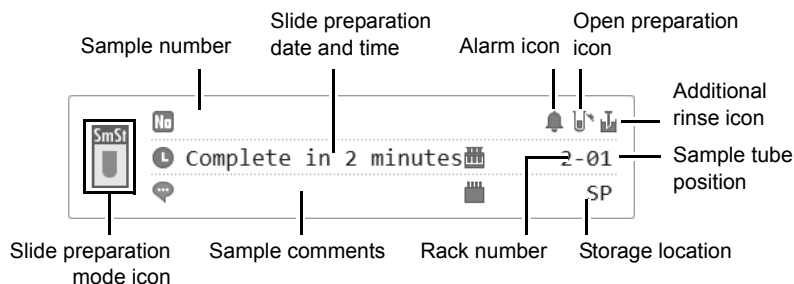
Toolbar	Displays buttons for each function.
[Related]	Touch to display a submenu, which allows you to change the display of orders. [Original sample]: Touch to display the detailed information of the order before execution of [Reorder]. [Reorder destination sample]: Touch to display the detailed information of the order after execution of [Reorder].
[Previous]	Touch to move to the previous order in the [Work list] screen.
[Next]	Touch to move to the next order in the [Work list] screen.
[Output]	Touch to send selected orders to the host computer. Refer to the following for more information on output conditions. (►P.44 "Chapter 2: 2.4 Outputting slide preparation orders to the host computer")
Detailed information area	Displays order details.

4.3.1 Data for users



[Browser] screen (data for users)

Sample information area Displays the following information.



Slide preparation mode icon	Displays the set slide preparation mode. For details, see the following. (▶P.58 "Chapter 3: 3.2.2 Slide preparation mode")
Sample number	Displays a sample number.
Slide preparation date and time	Displays the date and time of completion of slide preparation. If the slide of the selected order is being prepared, the time until completion of preparation appears.
Alarm icon	Appears when the alarm is set to sound when slide preparation is completed.
Open preparation icon	Displayed when [Cap open] is ON.
Additional rinse icon	Appears when additional rinses are set.

Sample tube position	Displays the sample tube position.
Sample comments	Displays comments about the sample.
Rack number	Displays the rack number.
Storage location	Displays the location where the prepared smear is stored.
Preparation conditions area	Displays the [Set smear] and [Set stain] used for preparation, and [Temperature] and [Humidity] during preparation.
Print image	Displays the information printed on the glass slide.
Staining time area	Displays the status of staining during preparation.
[Process]	Displays the staining method.
[Time (mm:ss)]	Displays the staining time configured as the staining condition. If an error occurred, the time actually used for staining appears.
[Prog.]	When process finishes, a check mark appears.
Error display area	Displays error information when an error occurs during slide preparation.

Chapter 5 Instrument Settings

5.1 Setting list by purpose

The following table lists the settings that can be configured on the instrument.

The system configuration or the permissions of the logged on user may not allow that user to change settings.

Only a user for who [All] is set in [Permissions] in the [User administration] (setting) dialog box or a user with the right of [Modify settings] can change the setting of the functions. For details on the user permissions, see the following.

(►P.114 "●Changing settings and adding users")

Desired action		Setting method	
User permission	Set operation permissions for each user.	Set in the [User administration] dialog box.	►P.112
	Set the user that automatically logs on when the instrument starts up.		
Screen display	Change the display language.	Change in the [System language settings] dialog box.	►P.116
	Change the instrument name.	Change in the [Instrument name setting] dialog box.	►P.116
	Change the type of screen that appears after startup.	Set in the [Initial Screen Settings] dialog box.	►P.119
	Set the brightness of the screen.	Set in the [Screen Brightness Setting] dialog box.	►P.119
Date and time	Change the date format.	Change in the [General date format] dialog box.	►P.111
	Change the instrument's date and time.	Set in the [Date and Time Settings] dialog box.	►P.117
Sound	<ul style="list-style-type: none"> • Change the alarm sound when an error occurs/operation is completed. • Turn off the alarm sound when an error occurs/operation is completed. • Change the number of times the alarm sounds when an error occurs/operation is completed. 	Change in the [Sound] dialog box.	►P.117
Shutdown	Set the day of the week on which the operator is prompted to execute [Shutdown 2].	Set in the [Shutdown 2 settings] dialog box.	►P.148

Desired action		Setting method		
Slide preparation	General	Create a blood smear from a dialysis patient.	Turn off the blood sensor and blood aspiration sensor.	►P.145
		Change the default order values to suit my laboratory's system.	Change in the [Default order settings] dialog box.	►P.126
		Automatically assign sample numbers.	Turn ON the sample number auto increment function.	►P.142
		Set conditions for stopping sampler preparation.	Set in the [Sampler prep. stop condition settings] dialog box.	►P.146
		<ul style="list-style-type: none"> Stop feed-out of the magazine when the instrument changes to the ready state. Change the time when the out-of-magazines dialog box is displayed. 	Set in the [Magazine settings] dialog box.	►P.147
		<ul style="list-style-type: none"> Disable the barcode reader. Change the type of barcode used. 	Set in the [Barcode reader settings] dialog box.	►P.144
	Smearing	Change the conditions used for sample smearing.	Change in the [Smear condition setting] dialog box.	►P.121
		<ul style="list-style-type: none"> Use a fan to dry prepared smears. Adjust the air flow of the fan. 	Set in the [Smear drying fan settings] dialog box.	►P.135
	Staining	Change the conditions used for smear staining.	Change in the [Staining condition settings] dialog box.	►P.123
		Temporarily stop use of the post-staining dry heater due to malfunctioning of the dry heater or otherwise.	Turn off the post-staining dry heater.	►P.136
		Change the timing of replenishment of stain in the staining pool.	Change in the [Stain solution replacement time] dialog box.	►P.137
		Change the timing of adding stain to the staining pool.	Change in the [Stain solution addition time settings] dialog box.	►P.138
		Change the stain dilution ratio.	Change in the [Dilution ratio settings of stain solution] dialog box.	►P.139
	Printing	Change the format of sample information printed on the glass slide.	Change in the [Print settings] dialog box.	►P.127

Desired action		Setting method		
Peripheral devices	Host computer	<ul style="list-style-type: none"> • Connect a host computer. • Disconnect connection with the host computer. • Change a communication method with the host computer. 	Set in the [Host computer connection settings] dialog box.	►P.150
		Change the settings for obtaining orders from a host computer.	Set in the [Preparation ordering] dialog box.	►P.143
	CF-70	Identify glass slide to be analyzed on the DI-60.	Set in the [Slide identification setting] dialog box.	►P.153
Settings		<ul style="list-style-type: none"> • Back up or restore settings. • Initialize setting values. 	Select from the toolbar on the [Settings] screen.	►P.106

5.2 Changing the instrument setting

The instrument settings are configured in each of the setting screens.



Note:

If you change a setting while smear preparation is in progress, the new setting will be applied from the next sample.

1 Touch [Settings] in the [Menu] screen.

The [Settings] menu screen appears.



[Settings] menu screen

Setting category	Touch an icon to open the dialog box of that setting category.
[System settings]	Touch to configure system settings. (▶P.110 "5.4 System setting")
[Slide Preparation]	Touch to configure smear preparation settings. (▶P.120 "5.5 Slide preparation setting")
[Operational settings]	Touch to configure operation settings. (▶P.141 "5.6 Operation settings")
[Host connection]	Touch to configure host computer connection settings. (▶P.150 "5.7 Host connection")
[CF settings]	Displayed only when the instrument is connected to the DI-60. Touch to configure identification settings for smears to be analyzed on the DI-60. (▶P.152 "5.8 CF settings")
[Back]	The screen returns to the [Menu] screen.

2 Touch the icon of the desired setting category.

The setting dialog box of the touched category appears.

3 If other than [Host connection] was touched in step 2, touch the button for the item for which you want to set.

The setting dialog box of the touched item appears.

This step is not necessary if you touched [Host connection]. Go to the step 4.

4 Change the settings.

5 If settings were changed via the [User administration] dialog box, touch [Close].

The dialog box closes, and the settings are saved.

This step is not necessary if settings were changed via some method other than using the [User administration] dialog box. Go to the step 6.

6 Touch [OK].

The dialog box closes, and the settings are saved.

5.3 Managing settings

When the [Settings] menu screen is displayed, the following buttons appear on the toolbar.

[File]

[Backup settings]	Touch to save a backup of the setting file. (▶P.107 "5.3.1 Saving settings value (backup)")
[Restore Settings]*	Touch to replace the current settings with the settings in a saved setting file. (▶P.108 "5.3.2 Restoring backed up settings (restore)")
[Initialize settings]*	Touch to return the settings to the factory settings. (▶P.109 "5.3.3 Initializing settings")

[Version]	Touch to display the [Version Information] dialog box. (▶P.30 "Chapter 1: 1.7.3 Version information confirmation")
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* Can only be done by an [admin] (administrator).

5.3.1 Saving settings value (backup)

You can back up the settings to a USB memory stick.



Note:

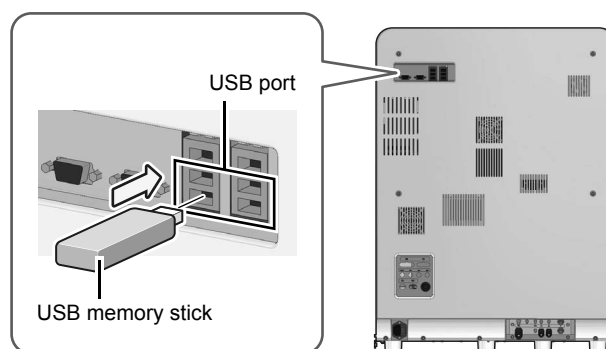
The following items cannot be backed up.

- Instrument name
- Date and Time Settings

1 Insert the USB memory stick.

Insert the 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 [File] on the toolbar in the [Settings] menu screen and touch [Backup settings].

The backup starts and the progress dialog box appears.

When the backup finishes, the dialog box closes.

3 Remove the USB memory stick.

● Backup location and file name

When you execute backup, the file is saved with the following file name in a folder with the instrument ID as the folder name*.

[Instrument ID][Software version][Date_Time].xml

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

5.3.2 Restoring backed up settings (restore)

You can replace the current settings with the settings in a saved setting file.



Note:

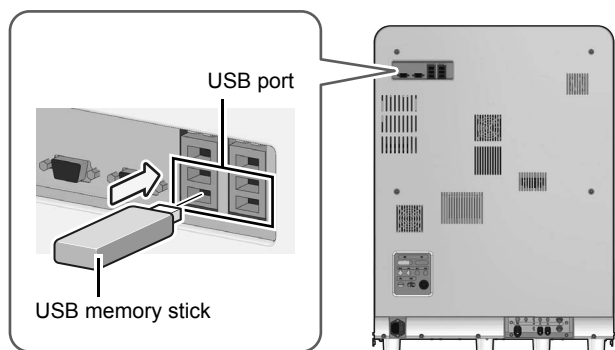
The following items cannot be restored.

- Instrument name
- Date and Time Settings

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

Insert the 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.

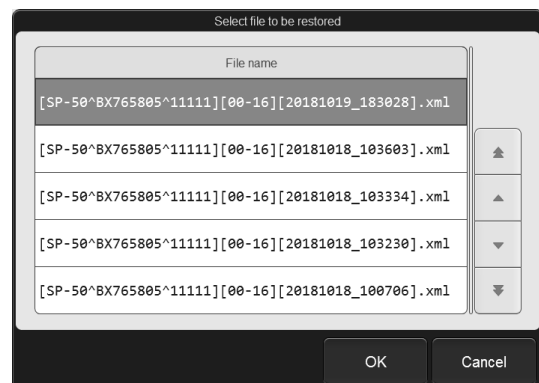


2 Touch [File] on the toolbar in the [Settings] menu screen and touch [Restore Settings].

The confirmation dialog box appears.

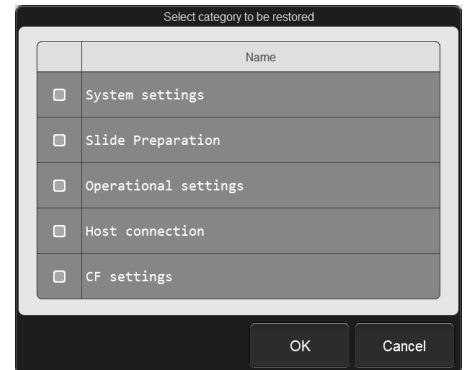
3 Touch [Yes].

4 Select the backup file in the [Select file to be restored] dialog box.



[Select file to be restored] dialog box

- 5 Select the setting category you want to restore in the [Select category to be restored] dialog box.**



**[Select category to be restored]
dialog box**

- 6 Touch [OK].**

The setting replacement starts and the progress dialog box appears.
When restoration of the settings is completed, the dialog box closes.

- 7 Remove the USB memory stick.**

5.3.3 Initializing settings

You can return all settings to the factory settings.

- 1 Touch [File] on the toolbar in the [Settings] menu screen and touch [Initialize settings].**

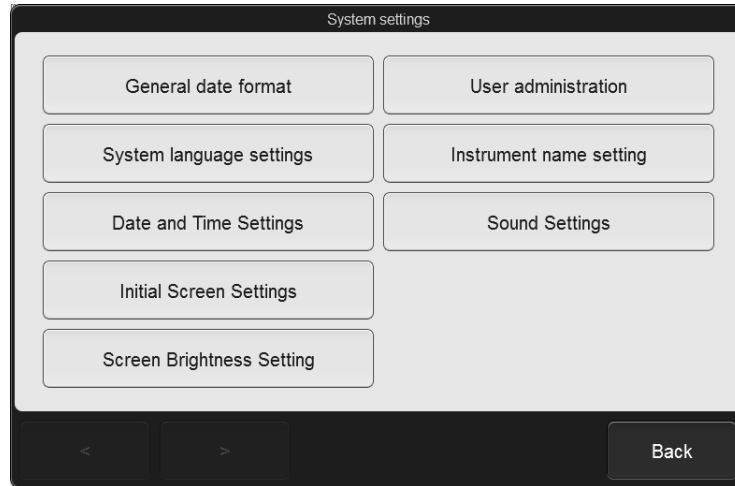
The confirmation dialog box appears.

- 2 Touch [Yes].**

The settings are initialized.

5.4 System setting

Touch [System settings] in the [Settings] menu screen to display the [System settings] dialog box.



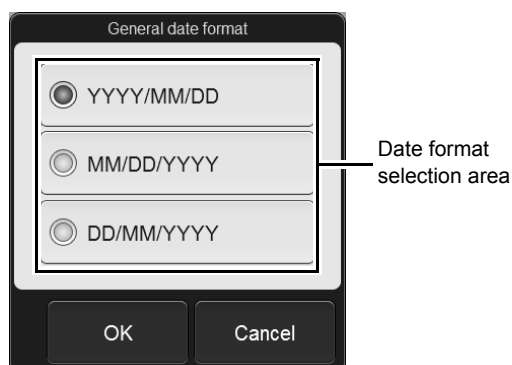
[System settings] dialog box

Touch the buttons to display dialog boxes for the settings below.

[General date format]	Set the date format used in screens, printouts, and file output. (▶P.111 "5.4.1 Date format setting")
[User administration]	Register, change, and delete instrument users. You can also enable the auto logon setting. (▶P.112 "5.4.2 User information management")
[System language settings]	Set the screen display language. (▶P.116 "5.4.3 Display language change (basic system language setting)")
[Instrument name setting]	Set an instrument name. (▶P.116 "5.4.4 Instrument name setting")
[Date and Time Settings]	Set the system date and time. (▶P.117 "5.4.5 Date and time settings")
[Sound Settings]	Set the alarm sound for when an error occurs/operation is completed. (▶P.117 "5.4.6 Alarm sound setting")
[Initial Screen Settings]	Set the screen that appears immediately after startup. (▶P.119 "5.4.7 Screen after startup")
[Screen Brightness Setting]	Set the brightness of the screen. (▶P.119 "5.4.8 Screen brightness setting")

5.4.1 Date format setting

Touch [General date format] in the [System settings] dialog box.



**[General date format]
dialog box**

Date format selection area	You can select the format of the date that appears on the screen, in printed content, and in file output 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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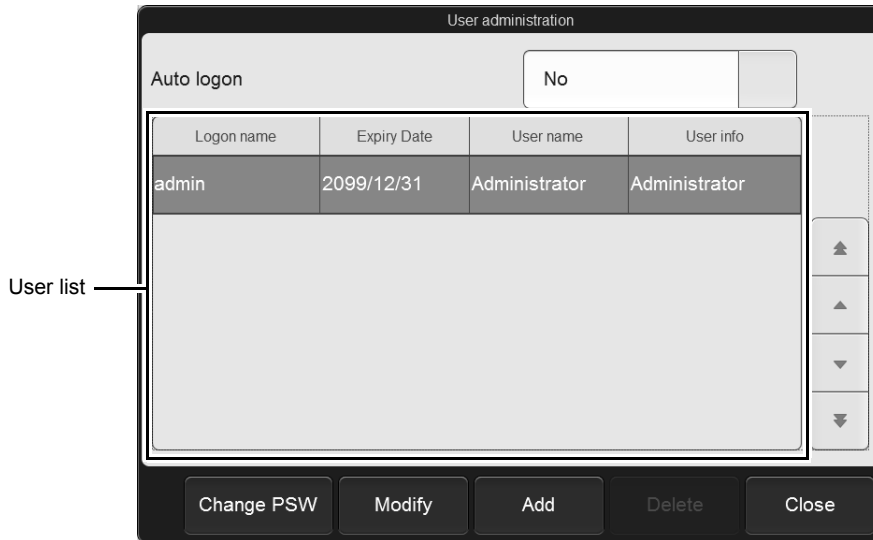
5.4.2 User information management

Touch [User administration] in the [System settings] dialog box.



Note:

If you change information of the currently logged on user, the changes take effect at the next login.



[User administration] dialog box

[Auto logon]	When auto logon is used, select the logon user (logon name). When auto logon is not used, select [No].
User list	The user list appears. To change user information or delete a user, select the user in this list and touch the appropriate button below the list. To change information or permissions: Select the user and touch [Modify]. To delete: Select the user and touch [Delete].
[Change PSW]	Touch to change the password of the currently logged on user. (▶P.113 "●Changing password")
[Modify]*¹	Touch to change the settings or permissions of the user selected in the list. (▶P.114 "●Changing settings and adding users")
[Add]	Touch to register an additional user. When the number of registered users is at a maximum (100), a user cannot be added. (▶P.114 "●Changing settings and adding users")

[Delete]*2 Touch to delete a user selected in the user list.
(▶P.115 "●Deleting a user")

*1 The only [admin] (instrument administrator) setting that can be changed is the password.

*2 [admin] (instrument administrator) cannot be deleted.

● Changing password

1 Touch [Change PSW].

The dialog box on the right appears.

2 Touch and set the displayed items.

[Current password] Enter the current password.
This does not need to be entered if you are a user with [All] set in [Permissions] of the [User administration] (settings) dialog box, or if you are an [admin] (administrator).

[New password] Enter a new password. You can enter up to 20 characters.

[New password (Confirmation)] Re-enter the new password for confirmation.

3 Touch [Regist.].

The dialog box closes, and the new password is applied.



Note:

If you are a user with [All] set in [Permissions] of the [User administration] (settings) dialog box, or you are an [admin] (administrator), you can change the password of another user with [Modify]. For the changing method, see the following.

(▶P.114 "●Changing settings and adding users")

● Changing settings and adding users

Up to 100 users can be registered.

1 Select the user whose settings you want to change

If you are adding a user, this step is not necessary.

2 Touch [Modify] to change settings or [Add] to add a user.

The following dialog box appears.

[User administration] (setting) dialog box

3 Touch and set the displayed items.

[Logon name]	Enter the logon name of the user. You can enter up to 20 characters. If you touched [Modify] to open the dialog box, this cannot be modified.
[Password]	Set a password. (▶P.113 "●Changing password")
[Expiry Date]	Enter the expiration date of the user. Enter the date in the format "Year (4 digits)/Month (2 digits)/Day (2 digits)". You can also touch the button at the right of the entry field to select the date from a calendar. A user whose expiration date has passed cannot log on. If you touched [Modify] to open the dialog box, only [admin] (administrator) can modify the expiration date of other users.
[User name]	Enter the name of the logon user. You can enter up to 20 characters.

[User info]	Enter additional information related to the user. You can enter up to 100 characters.
[Set language]	Select the language that is displayed for the user. For the languages that are available, see the following. (►P.116 "5.4.3 Display language change (basic system language setting)")
[Permissions]	Select the permission setting method from the following. [All]: Grant all permissions in the detailed permissions list. [Custom]: Individually select permissions to be granted.
Detailed permissions list	Displays detailed permissions.
[External output]	Select the checkbox to give the user a permission for external output.
[Register order]	Select to allow registering, editing, and deleting of orders.
[Slide Preparation]	Select the checkbox to permit the user to perform smear preparation.
[Modify settings]	Select the checkbox to authorize the user to change the setting.

4 Touch [Regist.].

The dialog box closes, and the new settings are applied or the users are added.

● Deleting a user



Note:

- A user with [All] set in [Permissions] of the [User administration] (settings) dialog box or an [admin] (administrator) can delete other users.
- [admin] (instrument administrator) cannot be deleted.

1 Select a user that you want to delete.

2 Touch [Delete].

The confirmation dialog box appears.

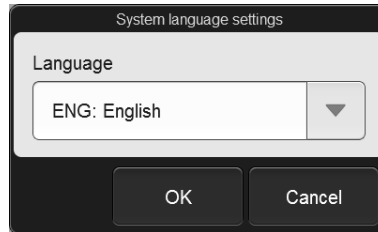
3 Touch [Yes].

The deletion starts and the progress dialog box appears.

When the dialog box closes, it indicates that the deletion has been completed.

5.4.3 Display language change (basic system language setting)

Touch [System language settings] in the [System settings] dialog box.

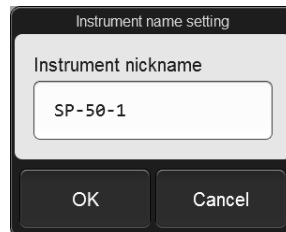


**[System language settings]
dialog box**

[Language]	Select the language that appears in the display.
-------------------	--

5.4.4 Instrument name setting

Touch [Instrument name setting] in the [System settings] dialog box.

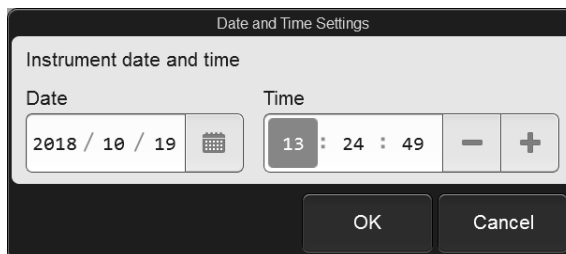


**[Instrument name
setting] dialog box**

[Instrument nickname]	You can change the instrument name. The instrument name is used for host computer output. You can enter up to 13 characters.
------------------------------	---

5.4.5 Date and time settings

Touch [Date and Time Settings] in the [System settings] dialog box.

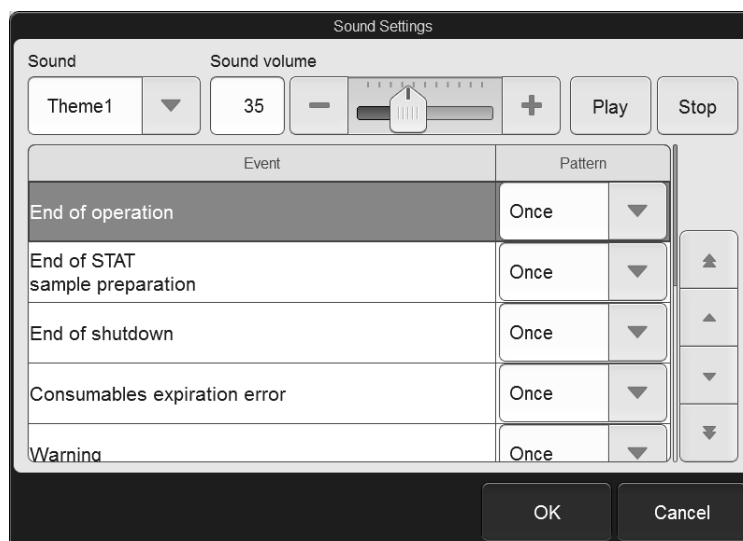


[Date and Time Settings] dialog box

[Date]	Set the date of the system. Enter the date in the format "Year (4 digits)/Month (2 digits)/Day (2 digits)". You can also touch the button at the right of the entry field to select the date from a calendar.
[Time]	The hours, minutes, and seconds are separated by [:], and enter 2 digits for each. Values can also be adjusted by touching [-] or [+].

5.4.6 Alarm sound setting

Touch [Sound Settings] in the [System settings] dialog box.



[Sound Settings] dialog box

[Sound]	Select alarm sound from the following. [Theme1]/[Theme2]/[Theme3]
----------------	--

[Sound volume]	Set the alarm volume from 0 to 100.
[Play]/[Stop]	Touch to sound or stop the selected alarm.
[Event]	Set alarm sounds for completion of specific operations and errors.
[End of operation]	Set the alarm sound for completion of any of the following operations. <ul style="list-style-type: none"> • Maintenance operation • Interruption of sampler preparation
[End of STAT sample preparation]	Set the alarm sound for completion of smear preparation for an urgent sample.
[End of shutdown]*¹	Set the alarm sound for completion of shutdown.
[Consumables expiration error]	Set the alarm sound for a consumable item that is running low.
[Warning]	Set the alarm sound that plays when an error that does not stop preparation (warning error) occurs.
[Stops preparation]	Set the alarm sound that plays when an error that stops preparation (preparation stop error) occurs.
[Instrument error]*¹	Set the alarm sound when an error that requires instrument repair or part replacement occurs.
[Key touch]*¹	Set the operation sound generated when the touchscreen is touched.
[Operation rejected]*¹	Set the alarm sound for rejection of a touchscreen operation.
[Pattern]	Select the alarm play method from the following. [None]* ² /[Once]* ² /[Repeat]* ³

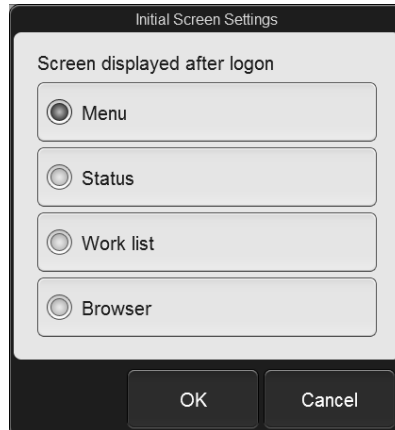
*1 The default alarm sound is generated, regardless of the theme selected in [Sound].

*2 This cannot be selected for a [Instrument error].

*3 Selectable only for [End of STAT sample preparation], [Stops preparation], or [Instrument error].

5.4.7 Screen after startup

Touch [Initial Screen Settings] in the [System settings] dialog box.

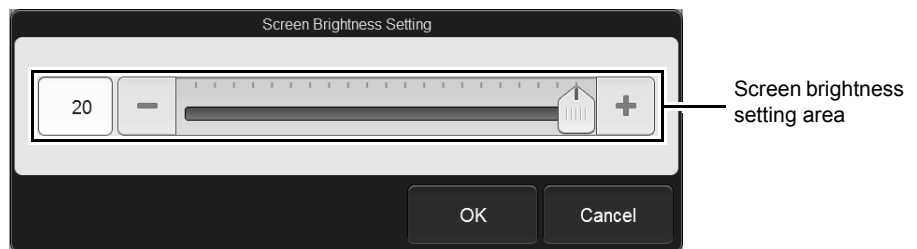


[Initial Screen Settings] dialog box

[Screen displayed after logon]	Select the screen that appears immediately after startup from the following.
	[Menu]: Displays the [Menu] screen.
	[Status]: Displays the [Status] screen.
	[Work list]: Displays the [Work list] screen.
	[Browser]: Displays the [Browser] screen.

5.4.8 Screen brightness setting

Touch [Screen Brightness Setting] in the [System settings] dialog box.

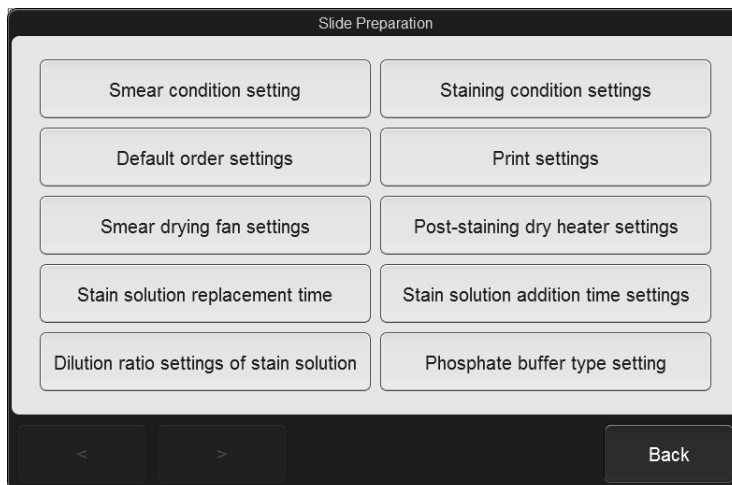


[Screen Brightness Setting] dialog box

Screen brightness setting area	Set the brightness of the screen from 0 to 20.
---------------------------------------	--

5.5 Slide preparation setting

Touch [Slide Preparation] in the [Settings] menu screen to display the [Slide Preparation] dialog box.



[Slide Preparation] dialog box

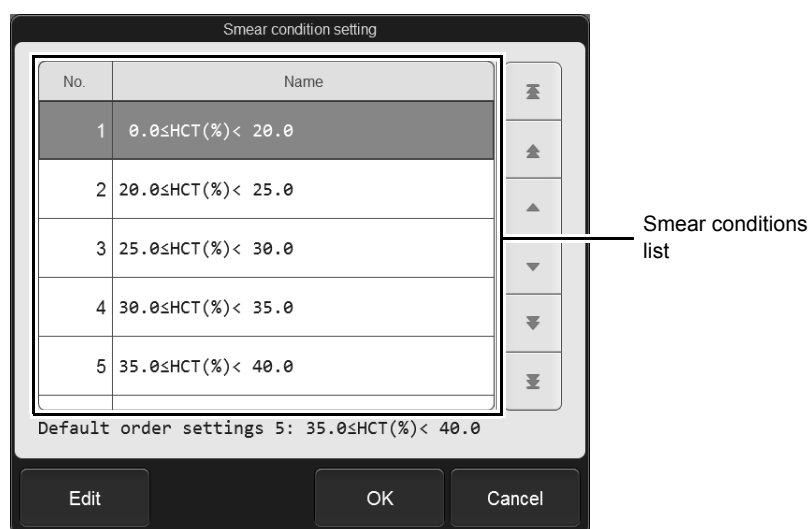
Touch the buttons to display dialog boxes for the settings below.

[Smear condition setting]	Set the conditions used for sample smearing. (▶P.121 "5.5.1 Smearing condition setting")
[Staining condition settings]	Set the conditions used for smear staining. (▶P.123 "5.5.2 Staining condition setting")
[Default order settings]	Set a default of the order. (▶P.126 "5.5.3 Default order setting") The value set here appears in the [Register order] dialog box the 1st time it appears after the instrument is started.
[Print settings]	Set a format for printing sample information on the frosted end of a glass slide. (▶P.127 "5.5.4 Print type settings")
[Smear drying fan settings]	Specify whether or not the drying fan is used after samples are smeared onto glass slide. The fan air volume can also be configured when using the drying fan. (▶P.135 "5.5.6 Smear drying fan settings")
[Post-staining dry heater settings]	Specify whether or not the post-staining dry heater is used. (▶P.136 "5.5.7 Post-staining dry heater setting")
[Stain solution replacement time]	Set the timing of replenishment of stain in the staining pool. (▶P.137 "5.5.8 Stain replenishment timing settings")

[Stain solution addition time settings]	Set the timing of adding stain to the staining pool. (▶P.138 "5.5.9 Stain addition timing settings")
[Dilution ratio settings of stain solution]	Set the dilution ratio for stain. (▶P.139 "5.5.10 Stain dilution ratio settings")
[Phosphate buffer type setting]	Set the phosphate buffer type. (▶P.140 "5.5.11 Phosphate buffer type setting")

5.5.1 Smearing condition setting

Touch [Smear condition setting] in the [Slide Preparation] dialog box.



[Smear condition setting] dialog box

Smear conditions list	The smearing condition list appears. 16 smear conditions have been registered.
[No.]	Numbers from 1 to 16 appear.
[Name]	Displays the smearing condition name.
[Default order settings]	Displays the number and name of the smear conditions set in the default order settings. (▶P.126 "5.5.3 Default order setting")
[Edit]	Touch to display a dialog box, which allows you to change the setting of the selected smearing condition. (▶P.122 "● Changing the smear condition settings")

● Changing the smear condition settings

Touch [Edit] in the [Smear condition setting] dialog box to display the following dialog box. Touch an item to change the settings.

[Smear condition name]	When a smear condition from [No.] 9 to 16 is selected, the name can be changed. You can enter up to 22 characters.
[HCT value (%)]	When smear condition [No.] 1 to 8 is selected, you can set the HCT value. The setting ranges are as follows. Lower limit value: 0.0 to 99.0 % Upper limit value: 1.0 to 100.0 % Values can also be adjusted by touching [-] or [+]. When you change the value of one condition, the [HCT value (%)] value of other conditions will also change accordingly.
[Dispensing volume (uL)]	Set the sample dispensing volume to a value from 1.8 to 5.0 μ L.
[Spreader glass angle (°)]	Set the angle of the spreader glass from 20.0 to 36.0°.
[Spreader glass speed (mm/sec.)]	Set the spreading glass speed to a value from 30 to 185 mm per second.
[Wait time before starting smear (sec.)]	Set the time before smearing starts after the spreader glass touches the sample from 0.5 to 3.0 seconds.
[Smear position (mm)]	Set the position where spreading by the spreader glass starts from -2.5 to 2.5 mm.

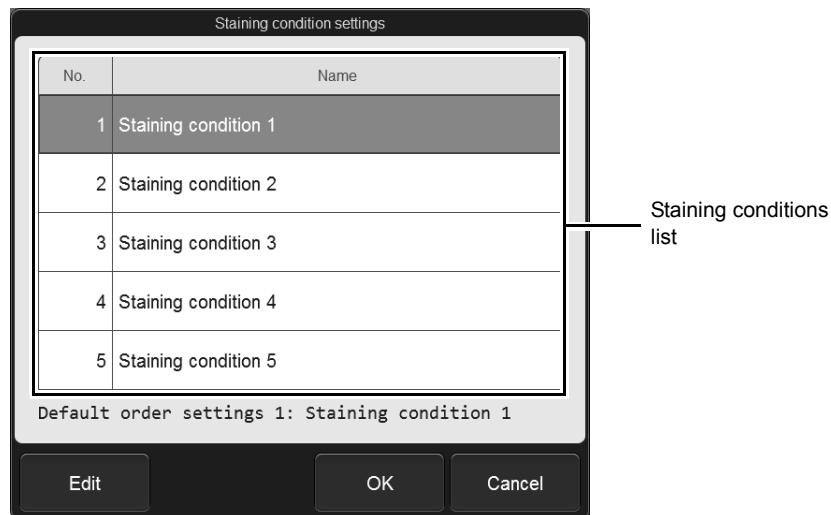


Caution

Changes made to smear condition settings may affect dispersion of blood cells. After changing smear conditions, prepare several smears and verify that the smears are prepared properly.

5.5.2 Staining condition setting

Touch [Staining condition settings] in the [Slide Preparation] dialog box.



[Staining condition settings] dialog box

Staining conditions list	The staining conditions list appears. 5 staining conditions have been registered.
[No.]	Numbers from 1 to 5 appear.
[Name]	Displays a staining condition name.
[Default order settings]	Displays the number and name of the staining conditions set in the default order settings. (▶P.126 "5.5.3 Default order setting")
[Edit]	Touch to display a dialog box, which allows you to change the setting of the selected staining condition. (▶P.124 "●Changing the staining condition settings")

● Changing the staining condition settings

Touch [Edit] in the [Staining condition settings] dialog box to display the following dialog box. The displayed contents differ depending on the staining method. Touch an item to change the settings.

Setting	Value
Staining condition name	Staining condition 1
Metha. Fix (mm:ss)	0:48
Undiluted stain 1 (mm:ss)	4:24
Diluted stain 1 (mm:ss)	4:24
Diluted stain 2 (mm:ss)	13:36
Rinse count	1
Dry (mm:ss)	5:36

[Staining condition name]	You can change the staining condition name. You can enter up to 20 characters.
[Metha. Fix (mm:ss)]	Set the methanol prefixing time within the range 0 minutes 48 seconds to 5 minutes 36 seconds.
[Undiluted stain 1 (mm:ss)]	Set the sample fixing time for stain solution 1 within the range 0 minutes 48 seconds to 5 minutes 36 seconds.
[Diluted stain 1 (mm:ss)]	The sample staining time using diluted stain solution 1 can be configured. The setting range differs depending on the staining method. Single staining: 1 minute 12 seconds to 16 minutes 00 seconds Double staining: 0 minutes 24 seconds to 5 minutes 36 seconds
[Diluted stain 2 (mm:ss)]	The sample staining time using diluted stain solution 2 can be configured within the range 0 minutes 24 seconds to 16 minutes 0 seconds.
[Rinse count]	Set the count for rinsing using rinse water within the range 1 to 4 times.
[Dry (mm:ss)]	Set the drying time after staining within the range 0 minutes 24 seconds to 5 minutes 36 seconds.

**Caution**

Changes made to staining condition settings affects stain of blood cells.
After changing staining conditions, prepare several smears and verify that the smears are prepared properly.

**Note:**

- Setting changes take effect starting with the sample aspirated after the setting change if the sampler preparation process is in progress when changes are made.
- Stain solution can be used for prefixing instead of methanol. Contact your authorized local Sysmex representative for more information.

5.5.3 Default order setting

Touch [Default order settings] in the [Slide Preparation] dialog box.

[Default order settings] dialog box

[Sample tube]	Select the sample tube type to be used from the following. [Normal]/[SARSTEDT]
[Set smear]	Set the smear conditions to be used. For details, see the following. (▶P.121 "5.5.1 Smearing condition setting")
[Set stain]	Set the staining conditions to be used. For details, see the following. (▶P.123 "5.5.2 Staining condition setting")
[Number of slide]	You can select the number of preparable slides from [0 slides], [1 slide], or [2 slides]. Select [0 slides] to skip slide preparation for that order.
[glass slide (1st)]/ [glass slide (2nd)]	Select the glass slides to be used for the 1st and 2nd glass slides from the following. [Cassette (R)]: Use a glass slide from the slide supply cassette (right). [Cassette (L)]: Use a glass slide from the slide supply cassette (left). [Do not specify]: Select this when you do not need to specify whether the slide supply cassette (right) or slide supply cassette (left) is used, such as when the same type of glass slides are loaded in both.
[DIA preparation]	Displayed only when the instrument is connected to the DI-60. Select the checkbox to send smears prepared on the instrument to the DI-60 for analysis.

5.5.4 Print type settings

Touch [Print settings] in the [Slide Preparation] dialog box.

[Print settings] dialog box

[Instrument identifier] You can set the instrument ID (1 character) that identifies the instrument that prepared the smear.
The set instrument ID is printed as the second digit from the left on the frosted part.

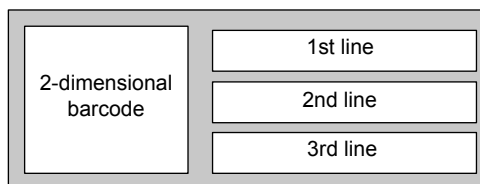
[Select print type] You can select a print type.

[Type1 (character x3)] Text (max. 15 characters) x 3 lines will be printed on the slide.

[Type2 (1-dimensional barcode)] Text (max. 15 characters) x 1 line will be printed on the slide.
A 1-dimensional barcode (max. 8 characters) is printed under the string.

[Type3 (2-dimensional barcode)]

Text (max. 8 characters) x 3 lines will be printed on the slide.
A 2-dimensional barcode (max. 50 characters) is printed on the left of the string.

**[Edit]**

Touch to display a dialog box, which allows you to change the selected print type.

(►P.128 "●Changing the content printed")

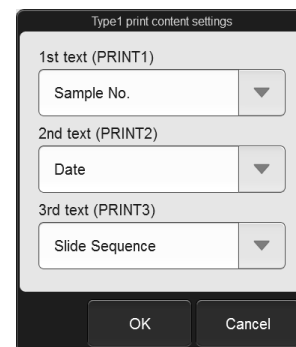
● Changing the content printed

Touch [Edit] in the [Print settings] dialog box to display a dialog box. The content displayed depends on the selected print type.

● For [Type1 (character x3)]

The dialog box on the right appears.

Touch an item to change the settings.



**[1st text (PRINT1)]/
[2nd text (PRINT2)]/
[3rd text (PRINT3)]**

You can select the print content from the following. The items that can be selected vary depending on your instrument configuration.

[Not printed]:	Do not print on the selected line.
[Sample No.]:	Prints the sample number.
[Date]:	Prints the date that the order was registered.
[WBC, RBC count]:	Prints the red blood cell count and white blood cell count obtained from the blood count analyzer.
[Smear conditions]:	Prints the smear condition [No.].
[Slide Sequence]:	Prints the serial number assigned to the order each time a glass slide is used.
[Host1]/[Host2]/[Host3]:	Print the information specified by the host computer.

**Note:**

When information specified by the host computer is set to be printed on all 3 lines ([1st text (PRINT1)], [2nd text (PRINT2)], and [3rd text (PRINT3)]), the following is printed in the event that the information cannot be obtained from the host computer. Nothing is printed on [3rd text (PRINT3)].

[1st text (PRINT1)]:

- Types of slide preparation
[S] (sampler preparation) or [M] (manual preparation)
- [Date]
- [Slide Sequence]

[2nd text (PRINT2)]:

- [Sample No.]

● For [Type2 (1-dimensional barcode)]

The dialog box on the right appears.

Touch an item to change the settings.

[1st text (PRINT1)] You can select the print content. Print contents that can be selected are the same as [Type1 (character x3)].

[1-dimensional barcode] You can select from the following for the information in the 1D barcode.

[Sample No.]:	Creates and prints a barcode based on the sample number.
[Slide Sequence]:	Creates and prints a barcode based on the serial number assigned to the order each time glass slide is used.
[Host1]/[Host2]/[Host3]:	Creates and prints a barcode based on instructions from the host computer.

**[Barcode system]/
[Check digits]**

You can set the specifications of the barcode. The selectable [Check digits] differs depending on [Barcode system].

[Barcode system]	[Check digits]	Number of printable digits*
[ITF]	[Modulus 10]	2 to 7 digits
	[None]	2 to 8 digits
[NW7]	[Modulus 16]	Max. 5 digits
	[None]	
[CODE39]	[Modulus 43]	Max. 4 digits
	[None]	
[CODE128]	[Modulus 103]	

* If the print content exceeds the maximum number of printable characters, printing will take place from the right up to the maximum number of characters. Any characters to the left of this will not be printed.

**Note:**

When information specified by the host computer is set to be printed on [1st text (PRINT1)] and in [1-dimensional barcode], the same information is printed on [1st text (PRINT1)] as [Type1 (character x3)] in the event that the information cannot be obtained from the host computer. The [Sample No.] is printed in the 1D barcode.

- For [Type3 (2-dimensional barcode)]

The dialog box on the right appears.
Touch an item to change the settings.

**[1st text (PRINT1)]/
[2nd text (PRINT2)]/
[3rd text (PRINT3)]**

You can select the print content from the following. The items that can be selected vary depending on your instrument configuration.

[Not printed]:	Do not print on the selected line.
[Sample No.]:	Prints the sample number.
[Date]:	Prints the date that the order was registered.
[Smear conditions]:	Prints the smear condition [No.].
[Slide Sequence]:	Prints the serial number assigned to the order each time a glass slide is used.
[Host1]/[Host2]/[Host3]:	Print the information specified by the host computer.

[2-dimensional barcode]	<p>You can select from the following for the information in the 2D barcode.</p> <p>[Sample No.]: Creates and prints a barcode based on the sample number.</p> <p>[Slide Sequence]: Creates and prints a barcode based on the serial number assigned to the order each time glass slide is used.</p> <p>[Host1]/[Host2]/[Host3]: Creates and prints a barcode based on instructions from the host computer.</p> <p>[HostBC]: Creates and prints a barcode with 2D barcode data downloaded from the host computer.</p>
[Barcode system]	<p>You can select the barcode type from the following.</p> <p>[QR code]/[DataMatrix]</p>

**Note:**

When information specified by the host computer is set to be printed on all 3 lines ([1st text (PRINT1)], [2nd text (PRINT2)], and [3rd text (PRINT3)]), the following is printed in the event that the information cannot be obtained.

[1st text (PRINT1)]:	[Date]
[2nd text (PRINT2)]:	[Slide Sequence]
[3rd text (PRINT3)]:	[Sample No.]
[2-dimensional barcode]:	[Sample No.]

5.5.5 Print format of the printer

The information that can be printed by the printer can be changed as shown below based on the combination of font size and format.

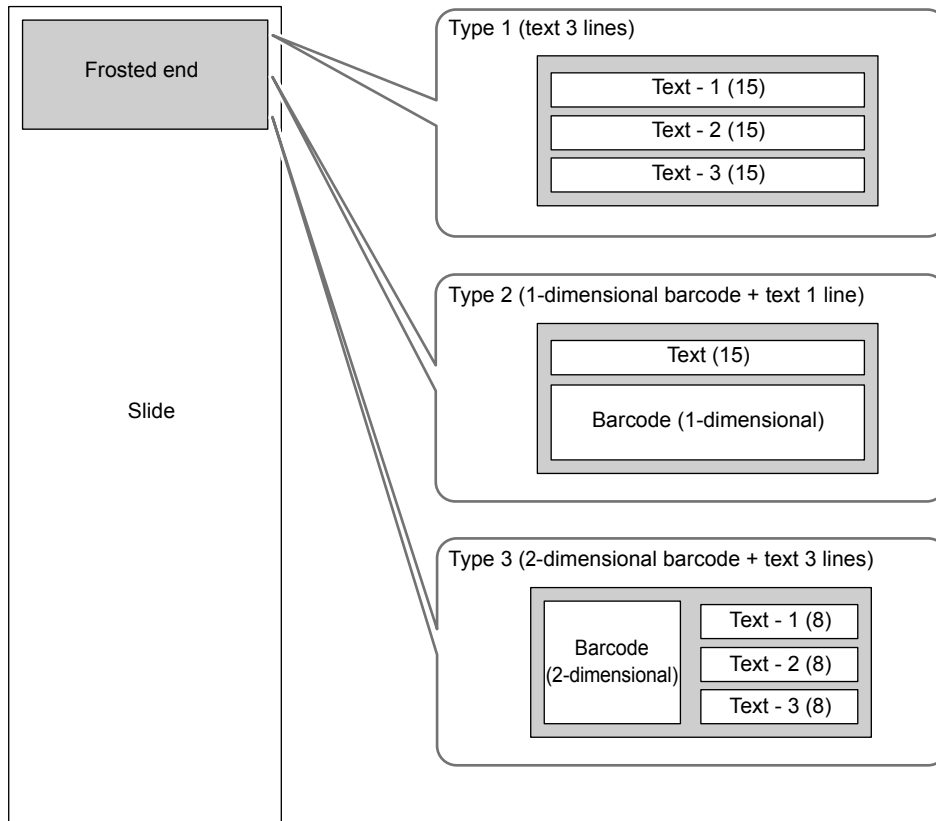


Note:

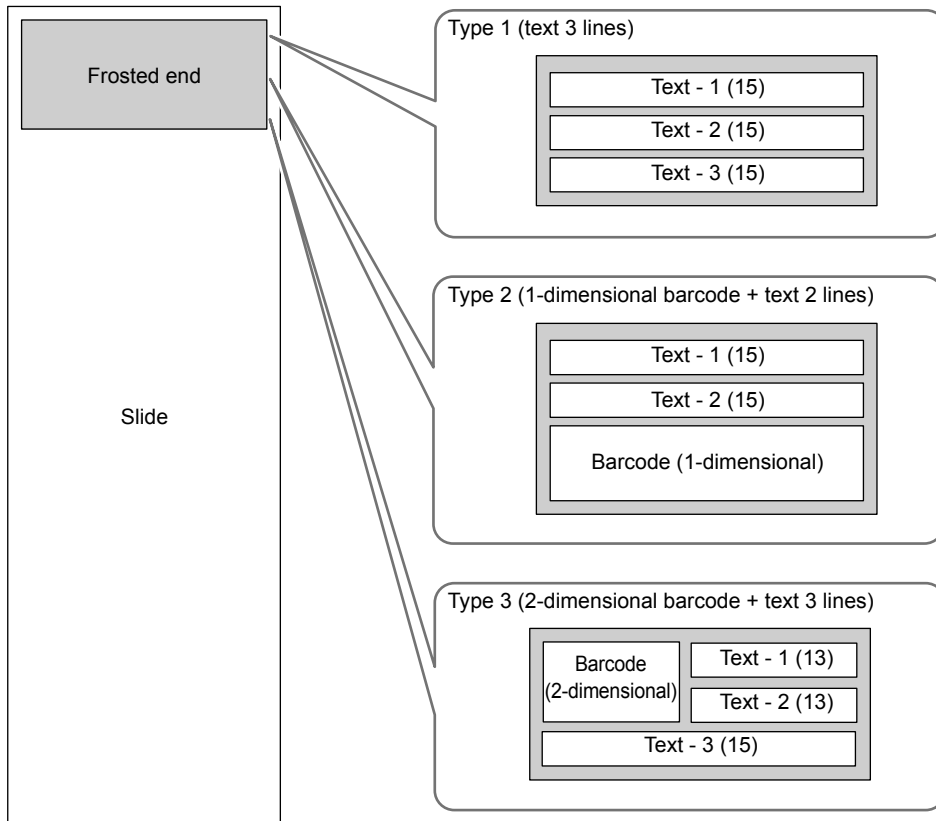
To print at 12 x 24 (dots per character) or 12 x 24 LNG (dots per character), a device setting must be changed. Contact your authorized local Sysmex representative to change the settings.

● Print format content

Font size setting	Print type setting	Print content
16 x 32 (dots per character)	Type 1	Text (max. 15 characters) x 3 lines
	Type 2	Text (max. 15 characters) x 1 line 1-dimensional barcode (max. 8 characters)
	Type 3	Text (max. 8 characters) x 3 lines 2-dimensional barcode (max. 50 characters)
12 x 24 (dots per character)	Type 1	Text (max. 15 characters) x 3 lines
	Type 2	Text (max. 15 characters) x 1 line 1-dimensional barcode (max. 8 characters)
	Type 3	Text (max. 8 characters) x 3 lines 2-dimensional barcode (max. 50 characters)
12 x 24 LNG (dots per character)	Type 1	Text (max. 15 characters) x 3 lines
	Type 2	Text (max. 15 characters) x 2 lines 1-dimensional barcode (max. 8 characters)
	Type 3	Text (max. 13 characters) x 2 lines Text (max. 15 characters) x 1 line 2-dimensional barcode (max. 20 characters)

Print position (16 x 32 dots per character, 12 x 24 dots per character)

Print position (12 x 24 LNG dots per character)



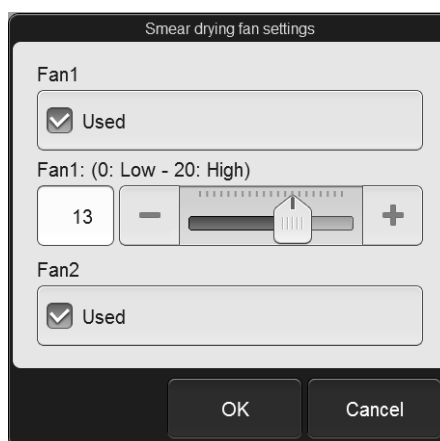
5.5.6 Smear drying fan settings

Touch [Smear drying fan settings] in the [Slide Preparation] dialog box.



Caution

If you turn off this setting because of a fan problem or otherwise, you can temporarily continue smear preparation, however, there is a risk that the smears will not be acceptable. If you prepare a smear with the setting turned off, visually inspect the smear to verify it was prepared properly.




[Smear drying fan settings] dialog box

[Fan1]	Select [Used] when using a drying fan after smearing a sample.
[Fan1: (0: Low - 20: High)]	Set the air volume of [Fan1] from 1 to 20.
[Fan2]	Select this checkbox to perform additional drying after drying with [Fan1].

5.5.7 Post-staining dry heater setting

Touch [Post-staining dry heater settings] in the [Slide Preparation] dialog box.

 **Caution**

If you turn off this setting because of a dry heater problem or otherwise, you can temporarily continue smear preparation, however, there is a risk that the smears will not be acceptable. If you prepare a smear with the setting turned off, visually inspect the smear to verify it was prepared properly.



[Post-staining dry heater settings] dialog box

[Use heater when drying after staining] Select this checkbox to use the post-staining dry heater after staining the sample.

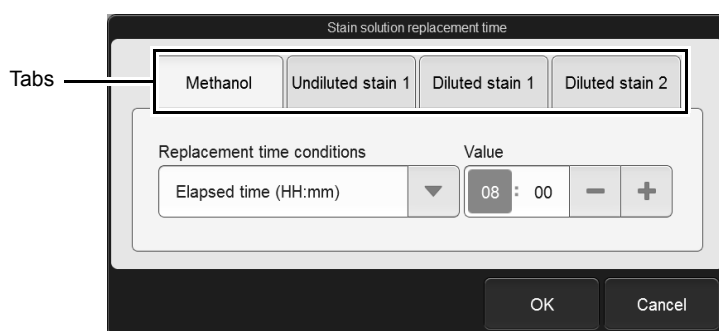
5.5.8 Stain replenishment timing settings

Touch [Stain solution replacement time] in the [Slide Preparation] dialog box.



Information

- Once the stain solution replenishment process has started, the sample preparation process cannot start until the replenishment process completes.
- If different replenishment timings are configured for each type of stain solution, the instrument may be unusable for an extended period of time while reagent is replenished.
- If the time for stain replenishment arrives while the instrument is in operation, replenishment will not start until the instrument status in the bottom left corner of the screen becomes green.



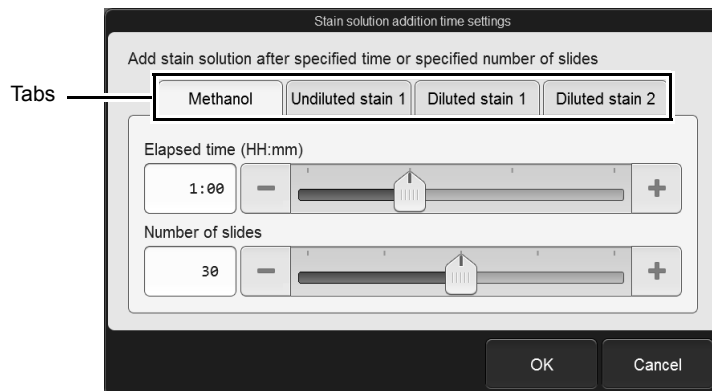
[Stain solution replacement time] dialog box
e.g. [Methanol] tab

Tabs	Touch to switch the dialog box display.
[Replacement time conditions]	Stain is automatically replenished when the set condition is satisfied*. The conditions below are available. [None]: Condition not set. [Elapsed time (HH:mm)]: Stain is replenished when the set time elapses after the instrument is started. This can be set from 1 hour 0 minutes to 23 hours 59 minutes. [Specified time (HH:mm)]: Stain is replenished at the set time.
[Value]	Enter [Value] for each condition. Values can also be adjusted by touching [-] or [+].

* If a condition is met within 1 hour after stain is replenished, stain is not replenished.

5.5.9 Stain addition timing settings

Touch [Stain solution addition time settings] in the [Slide Preparation] dialog box.



**[Stain solution addition time settings] dialog box
e.g. [Methanol] tab**

Tabs	Touch the tabs to switch the dialog box display. The displayed items differ depending on the staining method.
[Elapsed time (HH:mm)]	Stain is added when the set time elapses. The following time can be entered. [Methanol] tab is selected: 0 hour 30 minutes to 2 hours 0 minute [Undiluted stain 1] tab is selected: 0 hour 30 minutes to 2 hours 0 minute [Diluted stain 1] tab is selected (single staining): 0 hour 12 minutes to 2 hours 0 minute [Diluted stain 1] tab is selected (double staining): 0 hour 24 minutes to 4 hours 0 minute [Diluted stain 2] tab is selected (double staining): 0 hour 24 minutes to 4 hours 0 minute
[Number of slides]	Only appears for the [Methanol] tab and [Undiluted stain 1] tab. Stain is added when the set number of smears has been prepared. Any number from 10 to 50 slides can be set.



Note:

- Stain solution replenishment to the staining pool can only be performed during the sample preparation process.
- The replenishment process will be performed twice in succession when the [Elapsed time (HH:mm)] and [Number of slides] conditions overlap.
- Once the previous stain solution replenishment process completes, stain solution will be replenished an N number of times after the time configured with [Elapsed time (HH:mm)] and factored by N elapses.

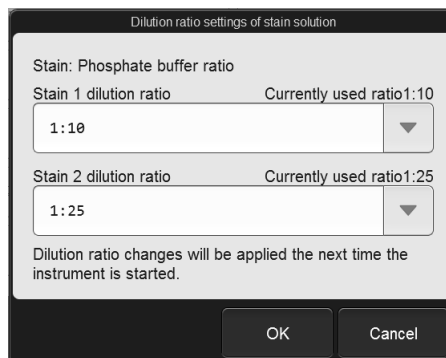
5.5.10 Stain dilution ratio settings

Touch [Dilution ratio settings of stain solution] in the [Slide Preparation] dialog box.



Note:

Dilution ratio changes take effect at the next startup.

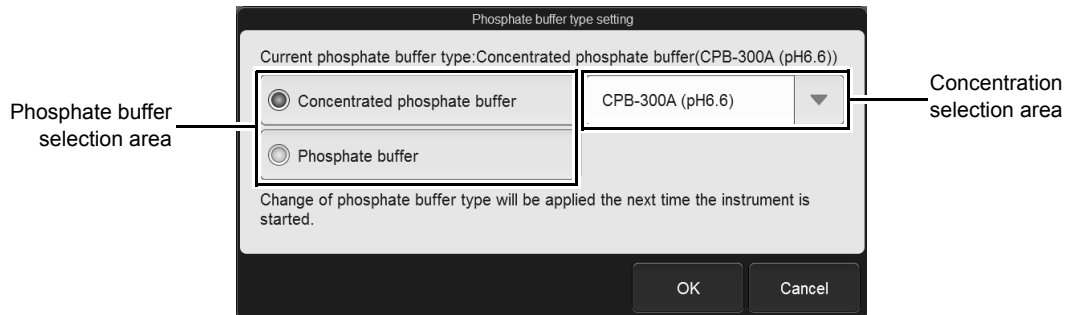


**[Dilution ratio settings of stain solution]
dialog box**

[Stain 1 dilution ratio]	Select a dilution ratio from the following. [1:5]/[1:10]
[Stain 2 dilution ratio]	Select a dilution ratio from the following. [1:10]/[1:13]/[1:17]/[1:25]

5.5.11 Phosphate buffer type setting

Touch [Phosphate buffer type setting] in the [Slide Preparation] dialog box.

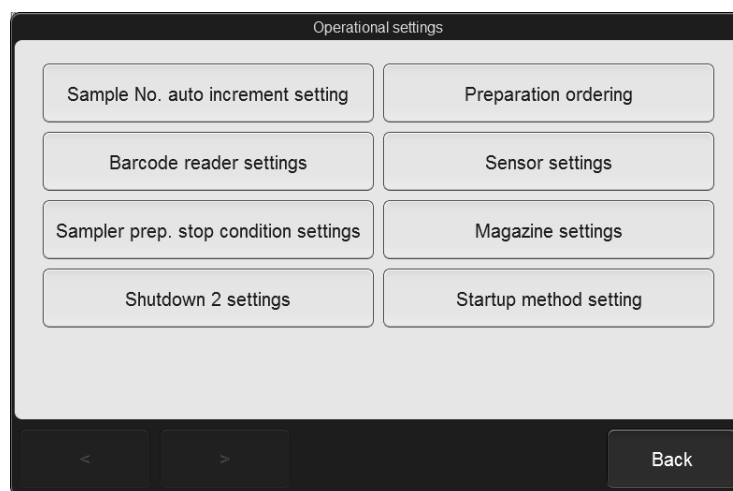


[Phosphate buffer type setting] dialog box

Phosphate buffer selection area	Select the phosphate buffer type to be used from the following. [Concentrated phosphate buffer]/[Phosphate buffer]
Concentration selection area	If [Concentrated phosphate buffer] is selected in the phosphate buffer selection area, select the concentration from the following. [CPB-300A (pH6.6)]/[CPB-301A (pH6.8)]/[CPB-302A (pH7.0)]/ [CPB-303A (pH7.2)]/[Other]

5.6 Operation settings

Touch [Operational settings] in the [Settings] menu screen to display the [Operational settings] dialog box.



[Operational settings] dialog box

Touch the buttons to display dialog boxes for the settings below.

[Sample No. auto increment setting]	Specify whether or not sample numbers are automatically incremented during manual preparation. (▶P.142 "5.6.1 Sample number auto increment setting")
[Preparation ordering]	Set the keys and method used to query the host computer for an order. (▶P.143 "5.6.2 Order inquiry setting")
[Barcode reader settings]	Specify whether or not a barcode reader is used, and set the barcode reading method. (▶P.144 "5.6.3 Barcode reader setting")
[Sensor settings]	Set whether the blood sensor, blood aspiration sensor, and water leak sensor are used. (▶P.145 "5.6.4 Blood sensor/blood aspiration sensor/water leak sensor settings")
[Sampler prep. stop condition settings]	Set the conditions for stopping sampler preparation. (▶P.146 "5.6.5 Sampler preparation stop conditions")
[Magazine settings]	Set the timing for feed-out of the magazine and notification of out-of-magazines. (▶P.147 "5.6.6 Magazine settings")
[Shutdown 2 settings]	Set the day of the week on which a dialog box prompting you to perform [Shutdown 2] is displayed. (▶P.148 "5.6.7 [Shutdown 2] setting") For [Shutdown 2], see "Troubleshooting". (▶Troubleshooting "Chapter 2: 2.4 Performing [Shutdown 2]")
[Startup method setting]	Set whether or not to select if the staining pool is used when the instrument starts up. (▶P.149 "5.6.8 Startup method setting")

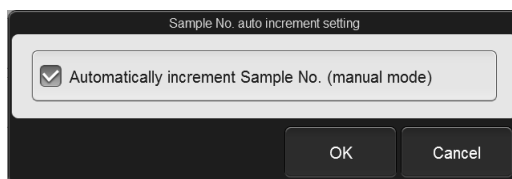
5.6.1 Sample number auto increment setting

Touch [Sample No. auto increment setting] in the [Operational settings] dialog box.



Note:

When smears are prepared in [Staining] mode, sample numbers are automatically incremented regardless of this setting.



**[Sample No. auto increment setting]
dialog box**

[Automatically increment Sample No. (manual mode)]	Select this checkbox to have sample numbers automatically assigned as a sequential number when manual preparation is performed.
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5.6.2 Order inquiry setting

Touch [Preparation ordering] in the [Operational settings] dialog box.

[Preparation ordering] dialog box

[Order key]	<p>Select the order query key from the following. This cannot be enabled in some instrument configurations. When the order list in the [Work list] screen includes an order for which [Status] is set in [Not prepared], the inquiry key cannot be changed.</p> <p>[Sample No.]: Query an order by sample number.</p> <p>[Rack No./Tube pos.]: Query by rack number and sample tube position. Do not select [Rack No./Tube pos.] when using an SP-10 compatible format.</p>
[Query host computer in real time]	<p>This setting can be configured only when the instrument is connected to a host computer. Specify whether real-time queries are sent to the host computer on slide preparation type basis.</p>
[Manual preparation]	<p>Select to have inquiry performed during manual preparation. Query an order by sample number, regardless of the [Order key] settings.</p>
[Sampler preparation]	<p>Select to have inquiry performed during sampler preparation. Query by sample number based on the [Order key] settings.</p>

5.6.3 Barcode reader setting

Touch [Barcode reader settings] in the [Operational settings] dialog box.



Caution

When using barcodes, use a check digit whenever possible.
If a check digit is not used, the potential for incorrect reading of a barcode increases.

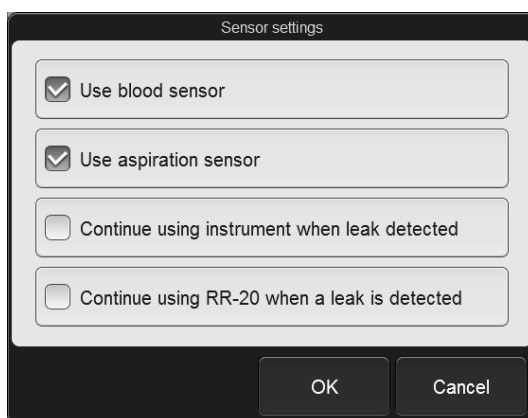
[Barcode reader settings] dialog box

[Used]	Select to read sample barcodes on sample tubes. This cannot be changed in some instrument configurations.
[Prepare slide when ID read error occurs (Sampler)]	Select this checkbox to perform slide preparation even when an ID read error has occurred. This cannot be set when [ID read error] is ON in [Sampler prep. stop condition settings].
[ITF]	Select to read ITF barcodes. Select the check digit from the following. [None]/[Modulus 10]
[NW7]	Select to read CODABAR/NW7 barcodes. Select the check digit from the following. [None]/[Modulus 11]/[W.Modulus 11]/[Modulus 16]
[CODE39]	Select to read CODE39 barcodes. Select the check digit from the following. [None]/[Modulus 43]
[JAN]	Select to read JAN/EAN/UPC barcodes. The check digit is fixed to [Modulus 10].
[ISBT128]	Select to read ISBT128 barcodes. The check digit is fixed to [Modulus 103].
[CODE128]	CODE128 barcodes can always be read. The check digit is fixed to [Modulus 103].

[Sample No. digit]	Select a number of digits read. Select [No] if you do not want to specify the number of digits. If a number of digits other than the specified number is read, a reading error will occur. However, the digit number check is not performed for sample numbers reserved by the system ([RN-]), such as those used for cleaning samples.
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5.6.4 Blood sensor/blood aspiration sensor/water leak sensor settings

Touch [Sensor settings] in the [Operational settings] dialog box.



[Sensor settings] dialog box

[Use blood sensor]	This is not displayed in some instrument configurations. Select this checkbox to use a blood sensor.
[Use aspiration sensor]	Select this checkbox to use a blood aspiration sensor.
[Continue using instrument when leak detected]	Select this checkbox to continue to use the instrument when a leak is detected.
[Continue using RR-20 when a leak is detected]	Displayed only when the instrument is connected to the RR-20. Select this checkbox to continue using the RR-20 when an RR-20 leak is detected.



Caution

- If the blood sensor and blood aspiration sensor are not used, smear quality may not be suitable for microscopic examination.
- Unless otherwise directed by your authorized local Sysmex representative, keep the [Continue using instrument when leak detected] and [Continue using RR-20 when a leak is detected] settings set to OFF. If use is continued with the setting set to ON, the instrument, RR-20 and other devices may be damaged if leakage occurs.

**Information**

When using a Raised Bottom Tube, select [Use blood sensor]. The RBT rack is automatically detected based on the rack type.

**Note:**

If you know in advance that the blood sample is low-density blood (e.g. blood from a dialysis patient), disable the blood aspiration sensor and blood aspiration sensor.

5.6.5 Sampler preparation stop conditions

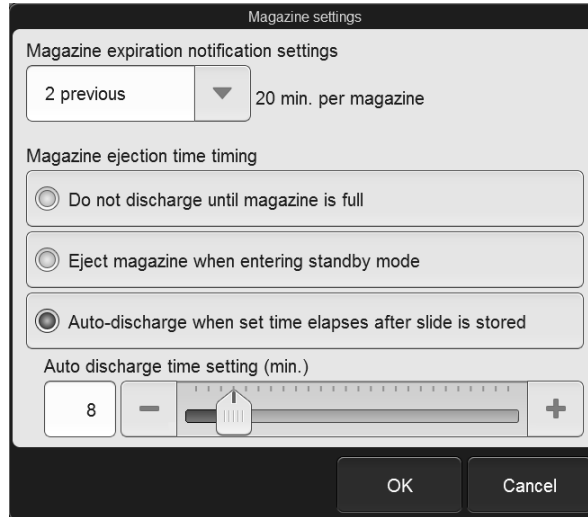
Touch [Sampler prep. stop condition settings] in the [Operational settings] dialog box.

[Sampler prep. stop condition settings] dialog box

[ID read error]	Select to have sampler preparation stop when a sample barcode label cannot be read.
[Aspiration error]	Select this checkbox to stop sampler preparation when aspiration does not take place or the amount is not sufficient. This can be set when a blood aspiration sensor is used.
[Inadequate sample]	Select to have sampler preparation stop when the blood sensor detects that there is no blood. This can be set when a blood sensor is used.
[Consumables expired error]	Select to have sampler preparation stop when a reagent is past its expiration date.

5.6.6 Magazine settings

Touch [Magazine settings] in the [Operational settings] dialog box.



[Magazine settings] dialog box

[Magazine expiration notification settings]	Specify whether or not a message is displayed before the magazine runs out between [1 previous] to [3 previous].
[Magazine ejection time timing]	Select the timing for feed-out of the magazine.
[Do not discharge until magazine is full]	Feed out the magazine when full.
[Eject magazine when entering standby mode]	Feed out the magazine when the instrument enters ready mode after smear preparation.
[Auto-discharge when set time elapses after slide is stored]	When the set time elapses after a glass slide is stored, the magazine is ejected.
[Auto discharge time setting (min.)]	You can set the time that must elapse before the magazine is automatically ejected to a value from 5 to 30 minutes.



Note:

When [Do not discharge until magazine is full] is selected, out-of-magazines will tend to occur less frequently, even when fewer smears are prepared at once.

5.6.7 [Shutdown 2] setting

Touch [Shutdown 2 settings] in the [Operational settings] dialog box.

[Shutdown 2 settings] dialog box

[Timing setting]	You can select from the following for the [Shutdown 2] prompting time. [Execute at start of month]/[Execute every other week]/[Execute once a week]
[Day setting]	Select the day of the week on which the operator is prompted to execute [Shutdown 2].
[Next date]	The next scheduled day for [Shutdown 2] appears.

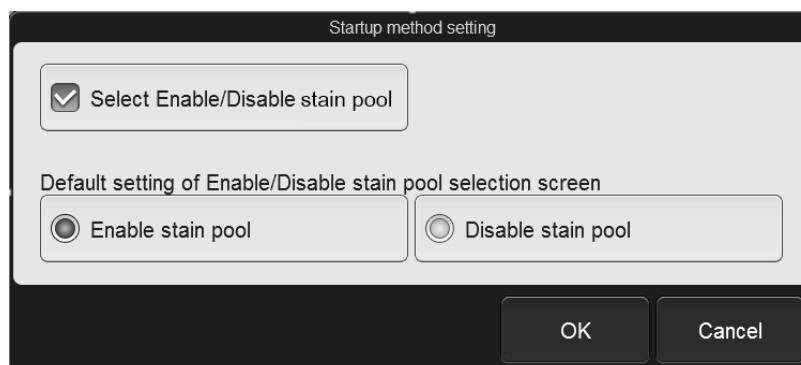


Note:

- If [Shutdown 2] is not executed on the scheduled day, the set day of the following week will be the next scheduled day.
- If more than 40 days has elapsed since [Shutdown 2] was last executed, you will be prompted to execute [Shutdown 2] regardless of the setting.

5.6.8 Startup method setting

Touch [Startup method setting] in the [Operational settings] dialog box.

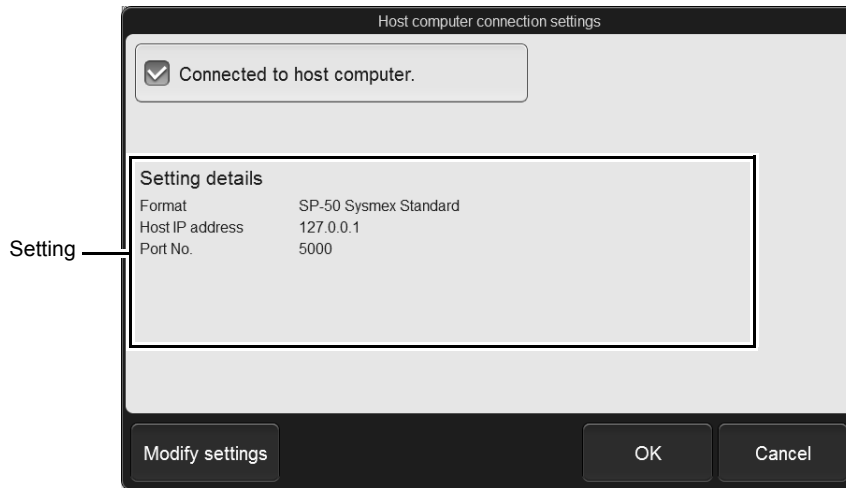


[Startup method setting] dialog box

[Select Enable/Disable stain pool]	Check to select whether or not to replenish reagent into the staining pool during startup. If unchecked, reagent will be replenished into the staining pool during startup.
[Default setting of Enable/Disable stain pool selection screen]	<p>Select initial status of the staining pool on startup from the following.</p> <p>[Enable stain pool]: Fills the staining pool with stain. You can use all slide preparation modes.</p> <p>[Disable stain pool]: Staining cannot be executed since the staining pool is not filled with stain. Select only when using [Smearing] mode or [Print] mode.</p>

5.7 Host connection

Touch [Host connection] in the [Settings] menu screen to display the [Host computer connection settings] dialog box.



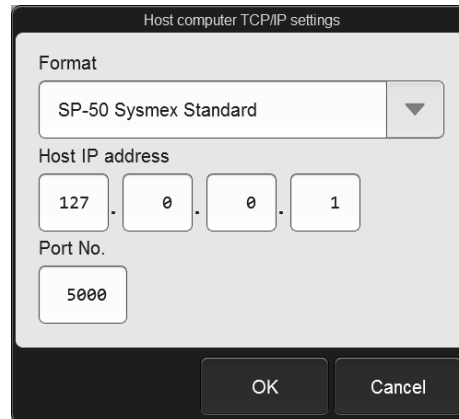
[Host computer connection settings] dialog box

[Connected to host computer.]	Select the checkbox to enable connection to a host computer. This cannot be changed in some instrument configurations.
Setting	Displays the details of the host computer connection setting.
[Modify settings]	Touch to display a dialog box, which allows you to set details of the communication method with the host computer. (▶P.151 "●Advanced communication method settings")

● Advanced communication method settings

Touch [Modify settings] to display the following dialog box.

The items that can be set depend on your instrument configuration.

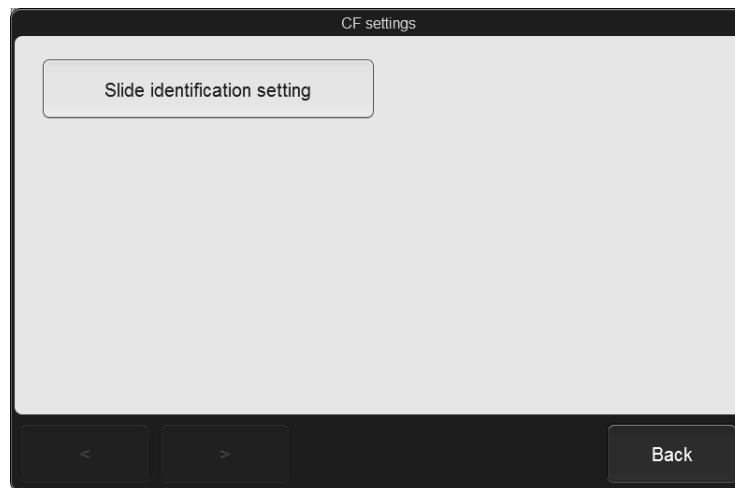


The image shows a dialog box titled "Host computer TCP/IP settings". It contains three main sections: "Format" with a dropdown menu set to "SP-50 Sysmex Standard"; "Host IP address" with four input boxes containing "127", "0", "0", and "1" separated by dots; and "Port No." with an input box containing "5000". At the bottom are "OK" and "Cancel" buttons.

[Format]	Select the data format for communication with the host computer.
[Host IP address]	Set the IP address of the host computer.
[Port No.]	Set the port number of the host computer.

5.8 CF settings

Touch [CF settings] in the [Settings] menu screen to display the [CF settings] dialog box.
This can be used only when the instrument is connected to the DI-60.

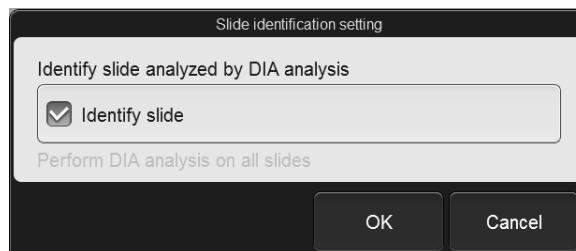


[CF settings] dialog box

[Slide identification setting] Specify whether or not smears to be analyzed on the DI-60 are identified.
(▶P.153 "5.8.1 Slide identification settings")

5.8.1 Slide identification settings

Touch [Slide identification setting] in the [CF settings] dialog box.



[Slide identification setting] dialog box

[Identify slide]

Select this checkbox to have smears whose [DIA preparation] checkbox is selected in the smear preparation order be analyzed on the DI-60. To have all smears be analyzed on the DI-60 regardless of the smear preparation order settings, remove the checkmark.

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