OLYMPUS®

User's Manual
[Simple Operation]

VS120
Virtual Slide System

Notice

This manual describes simple operating procedures so as the person who uses it for the first time can use with use.

For detail information, refer to [Hardware] of the attached Instructions and [Online Manual] of software

After reading this manual carefully, keep it in a safe place.

AX8036

CAUTION

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1 Acquiring Images

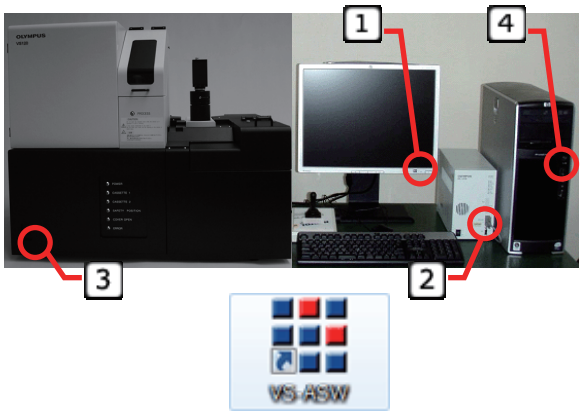
1-1 VS120-L100

This section describes how to acquire images of several slide glasses by using the automatic transport function. For this purpose, the following modes are available:

Quick Batch: It is to acquire images automatically without making precise settings.
When this mode is selected, follow procedures in the sections whitch carry **(Quick Batch)** marks on top of the sections.

Expert Batch: It is to acquire images by setting the scanning area (XY) and focus.
When this mode is selected, follow procedures in the sections whitch carry **(Expert Batch)** marks on top of the sections.

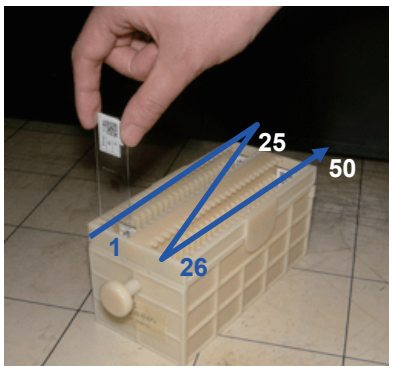
1 Starting Up the System (Quick Batch) (Expert Batch)



1 First, turn on the monitor 1, followed by the microscope control box 2, slide loader 3, and controller 4 to start up the system.

2 After the system has started up, double click the **[VS-ASW] icon** on the desktop to start up the software and begin adjustment of the stage.

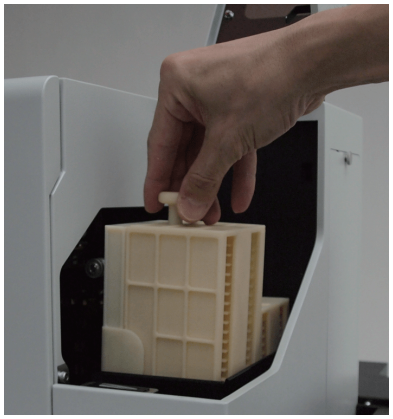
2 Placing a Slide Glass (Quick Batch) (Expert Batch)



1 Place slide glasses in the cassette.

Before placing slide glasses in the cassette, wipe the glasses free of dust, etc.

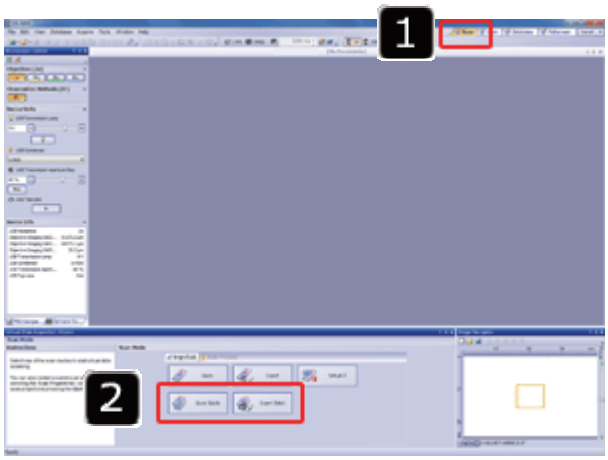
2 Open the cassette cover of the slide loader.

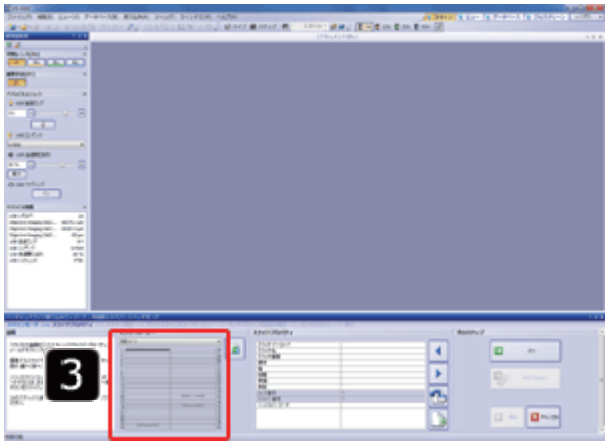


3 Place the cassette in the designated part of the loader.

4 Close the cassette cover of the slide loader.

3 Selecting Scan Mode (Quick Batch) (Expert Batch)





1 Select Scan on the upper right of the screen.

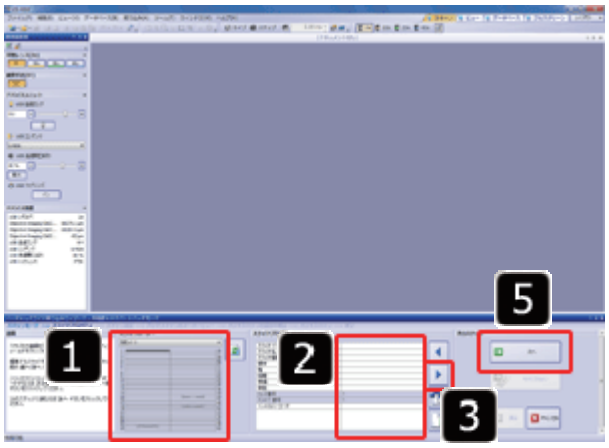
2 Click Quick Batch or Expert Batch.

After clicking the button, do not open or close the cassette cover.

3 The locations where the slide glasses have been placed are detected.

4 Setting Slide Glass Information (Quick Batch) (Expert Batch)

Set information for each slide glass if necessary. It is possible to acquire the image without setting any information.



1 Click the slide.
If you do not need to set slide glass information for the slide, go to step 5.

2 Enter slide glass information.

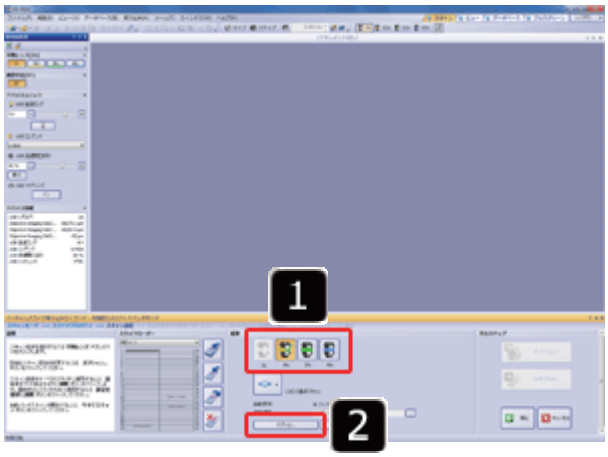
3 Click to select the next slide.

4 Repeat steps 2 and 3 for all the slides for which you need to set slide glass information.

5 Click

.

5 Selecting the Objective Lens (Quick Batch) (Expert Batch)



1 Click the Objective Lens button that you want to use.

(The check mark appears on the selected objective lens button.)

To change the optional settings, go to step 2 below.

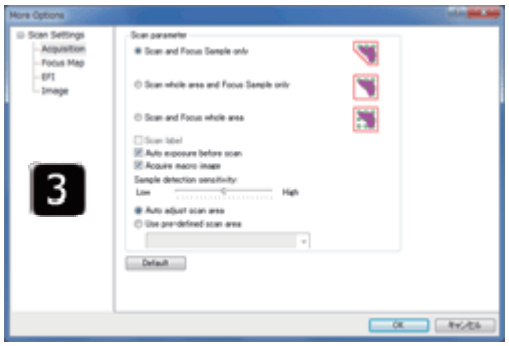
If you do not need to change the optional settings, go to step 4.

To capture the image in Z mode, click **(Scan one Z plane) button** and then click **[Virtual Z]**.

For more information, refer to the online help.

If you are using a database, you can set the location for saving captured images to the hard disk drive (default) or database.

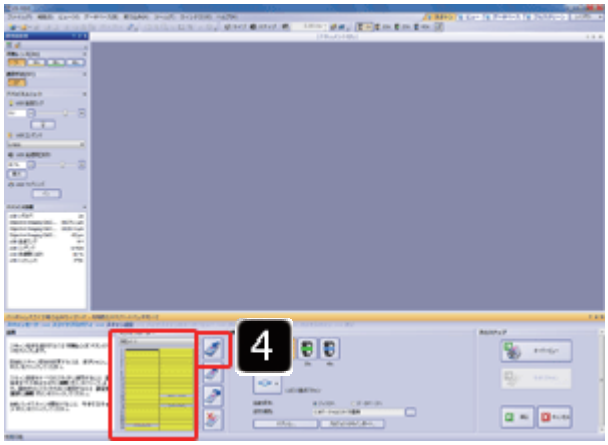
To save captured images to the database, refer to Section “1-5 Changing the Save Location for Acquired Images” (page 30).



2 Click More Options....

The [More Options] window appears.

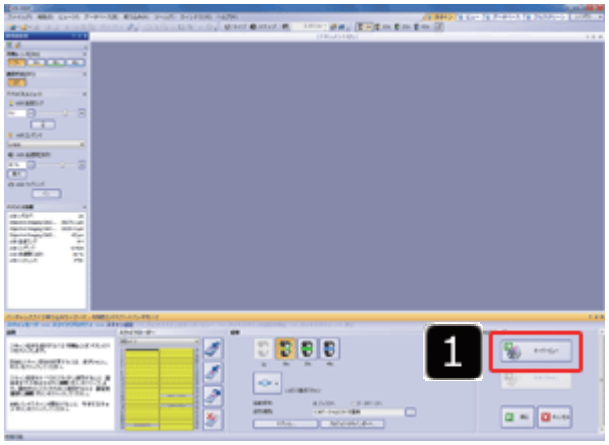
3 Change the necessary settings in the [More Options] window and click OK.



4 Click **(Apply settings to all slides of all cassettes)**.

The slides to which the settings have been assigned turns yellow.

6 Acquiring an Overview Image (Expert Batch)



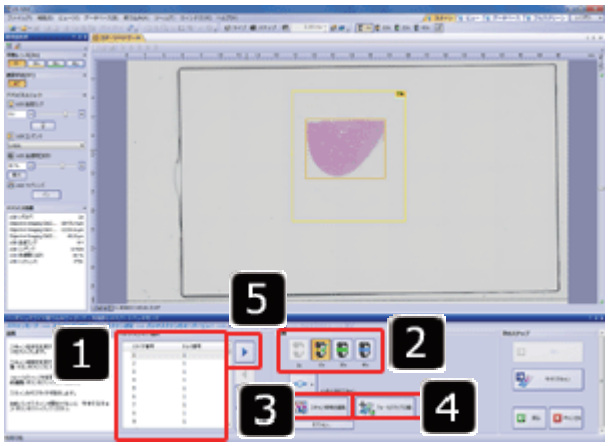
1 When setting is complete, click

.

(The 2x objective lens is used for scanning.)

Avoid movement or vibration of the system during scanning of overview images.

7 Confirming Settings (Expert Batch)



1 Lines for the number of the slides to be scanned are shown.
Click the lines you want to work on.

2 Change the objective lens as needed.

3 Click

to edit the scan area.

Use the mark in the **Edit screen** to edit the scan area, and then press the **[Enter] key** on the keyboard.

4 Click

to edit the focus map.

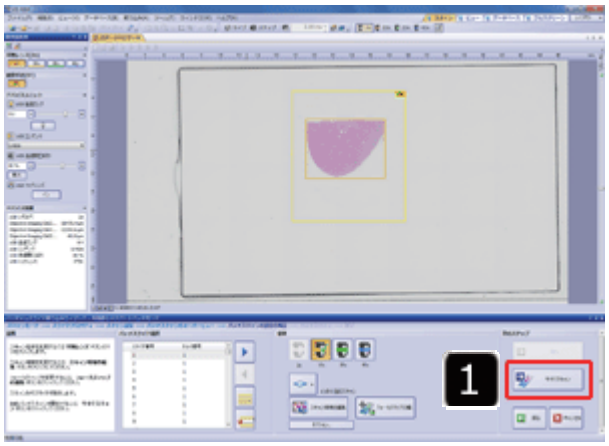
Confirm the (focus map) in the Edit screen.
Delete the focus map by right clicking on it and selecting [Delete] from the menu.
After editing the focus map, press the **[Enter] key** on the keyboard.

The method for adjusting the focus can be set using [Focus Logic]. If [Semi-automatic focusing] is selected, focus can be adjusted manually after the focus is automatically set.
For more information on Focus Logic, refer to Section "1-4 Setting Focus Logic" (page 29) or the online help.

5 Click to select the next slide.

Repeat steps from 2 to 5 for all the slides for which you need to set slide glass information.

8 Starting Scanning (Quick Batch) (Expert Batch)



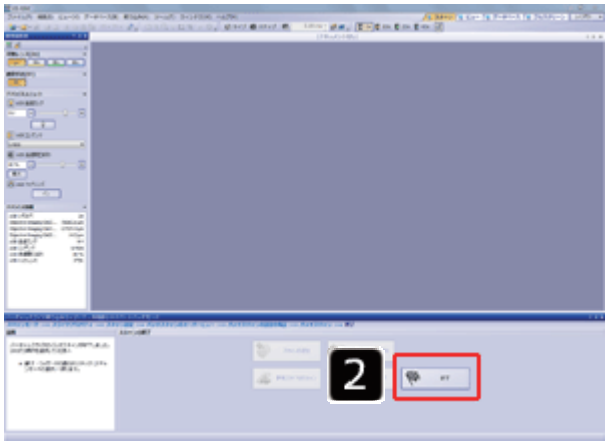
1 Click

.

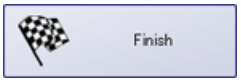
Scanning starts.

Avoid movement or vibration of the system during scanning.

9 Finishing Scanning (Quick Batch) (Expert Batch)

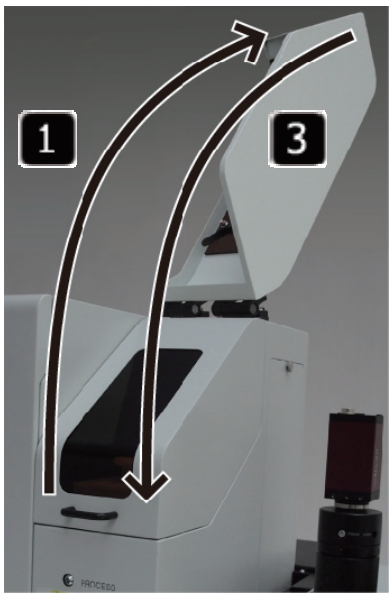


1 When the scan is complete, a screen similar to the one shown on the left is displayed.

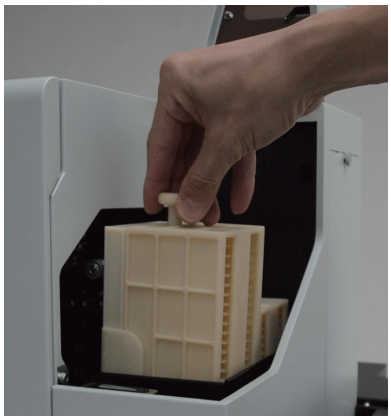
2 Click 

to complete the scan.

10 Turning Off the System (Quick Batch) (Expert Batch)

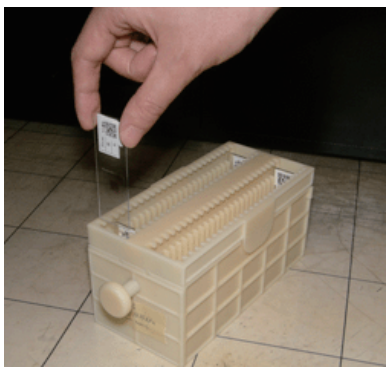


1 Open the cassette cover of the slide loader.

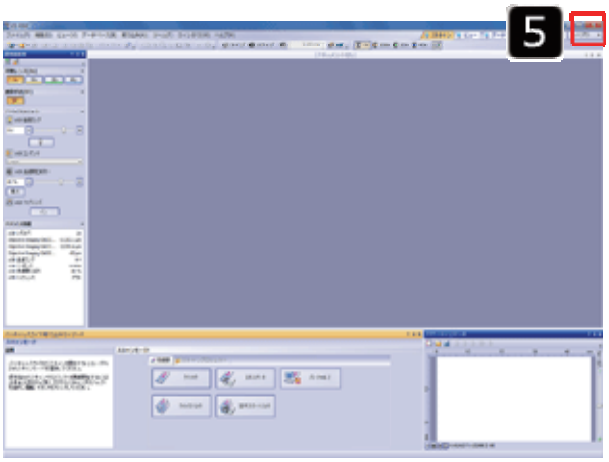


2 Pull out the cassette.

3 Close the cassette cover of the slide loader.



4 Take out the slide glasses from the cassette.



5 Click on the upper right corner of the VS-ASW screen.

6 First, shut down the Windows, and turn off the the microscope control box, slide loader, and monitor.

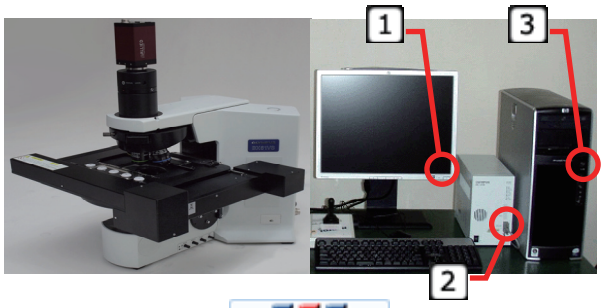
1-2 VS120-S5

This section describes how to acquire images of several slide glasses by using the automatic transport function. For this purpose, the following modes are available:

Quick Batch: It is to acquire images automatically without making precise settings.
When this mode is selected, follow procedures in the sections whitch carry **(Quick Batch)** marks on top of the sections.

Expert Batch: It is to acquire images by setting the scanning area (XY) and focus.
When this mode is selected, follow procedures in the sections whitch carry **(Expert Batch)** marks on top of the sections.

1 Starting Up the System (Quick Batch) (Expert Batch)



1 First, turn on the monitor 1 , followed by the microscope control box 2 , and controller 3 to start up the system.

2 After the system has started up, double click the [VS-ASW] icon on the desktop to start up the software and begin adjustment of the stage.

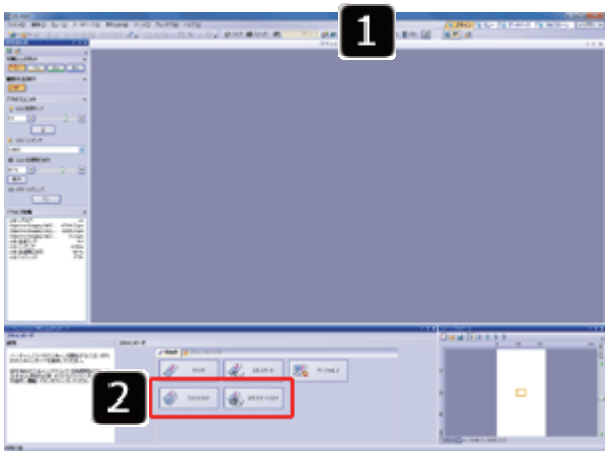
2 Placing a Slide Glass (Quick Batch) (Expert Batch)

1 Tilt the lever of the joystick to move the stage toward you.

2 Place the slide glass on the stage.

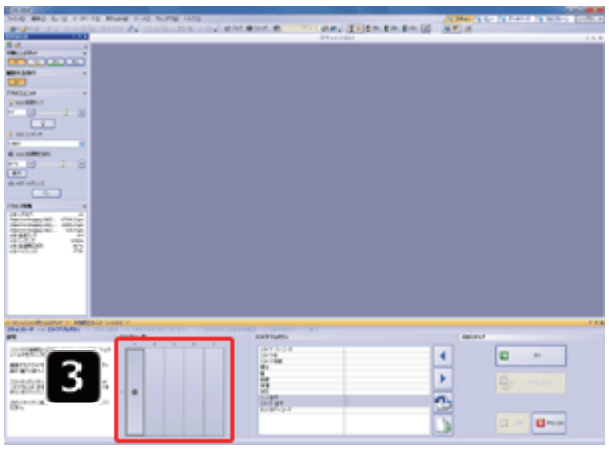
- Make sure that the specimen is placed vertically and the label is on the front of the slide glass.

3 Selecting Scan Mode (Quick Batch) (Expert Batch)



1 Select Scan on the upper right of the screen.

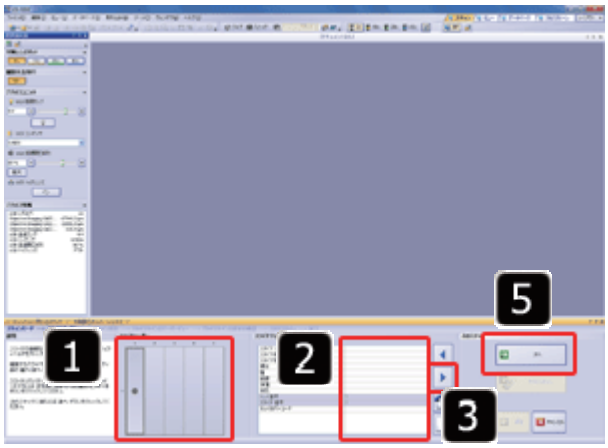
2 Click Quick Batch or Expert Batch.



3 The locations where the slide glasses have been placed are detected.

4 Setting Slide Glass Information (Quick Batch) (Expert Batch)

Set information for each slide glass if necessary. It is possible to acquire the image without setting any information.



1 Click the slide.
If you do not need to set slide glass information for the slide, go to step 5.

2 Enter slide glass information.

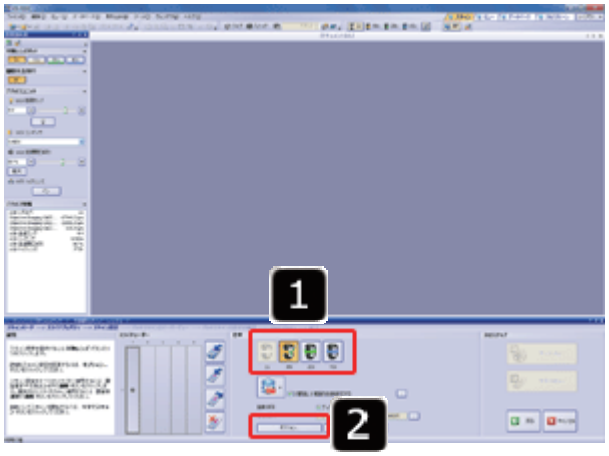
3 Click to select the next slide.

4 Repeat steps 2 and 3 for all the slides for which you need to set slide glass information.

5 Click

.

5 Selecting the Objective Lens (Quick Batch) (Expert Batch)



1 Click the Objective Lens button that you want to use.

(The check mark appears on the selected objective lens button.)

To change the optional settings, go to step 2 below.

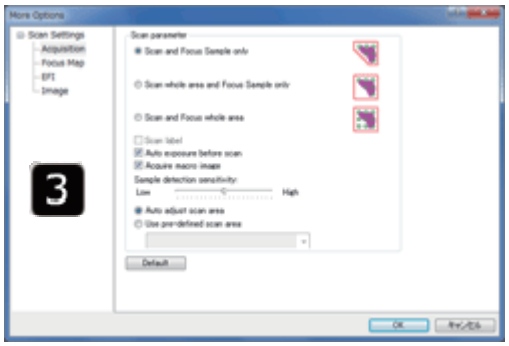
If you do not need to change the optional settings, go to step 4.

To capture the image in Z mode, click **(Scan one Z plane) button** and then click **[Virtual Z]**.

For more information, refer to the online help.

If you are using a database, you can set the location for saving captured images to the hard disk drive (default) or database.

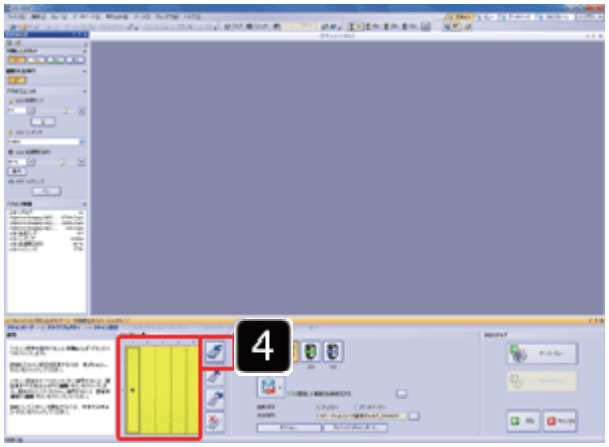
To save captured images to the database, refer to Section "1-5 Changing the Save Location for Acquired Images" (page 30).



2 Click More Options....

The [More Options] window appears.

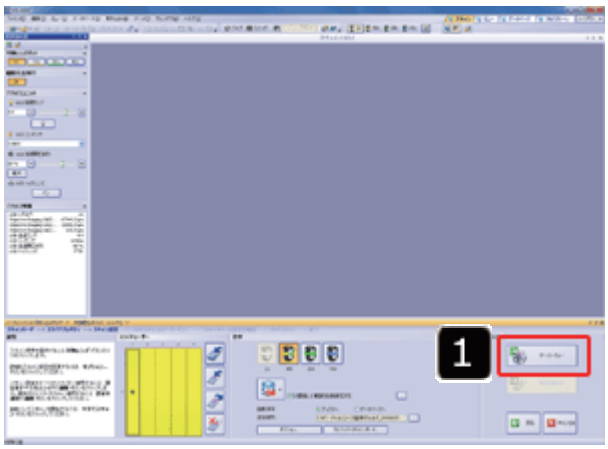
3 Change the necessary settings in the [More Options] window and click OK.



4 Click **(Apply settings to all slides of all cassettes)**.

The slides to which the settings have been assigned turns yellow.

6 Scanning an Overview Image (Expert Batch)



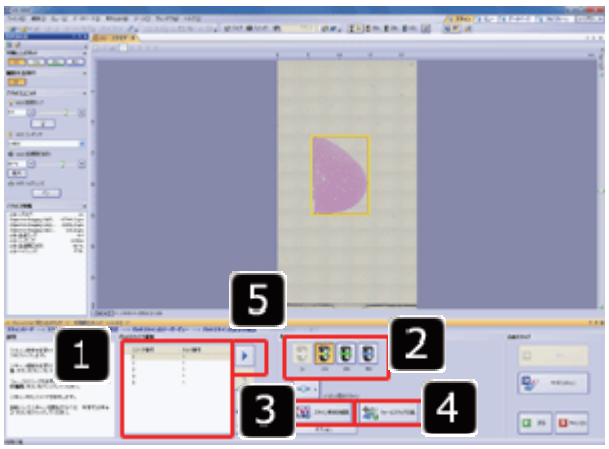
1 Click

.

(The 2x objective lens is used for scanning.)

Avoid movement or vibration of the system during scanning of overview images.

7 Confirming Settings (Expert Batch)



1 Lines for the number of the slides to be scanned are shown.
Click the lines you want to work on.

2 Change the objective lens as needed.

3 Click

to edit the scan area.

Use the mark in the **Edit screen** to edit the scan area, and then press the **[Enter] key** on the keyboard.

4 Click

to edit the focus map.

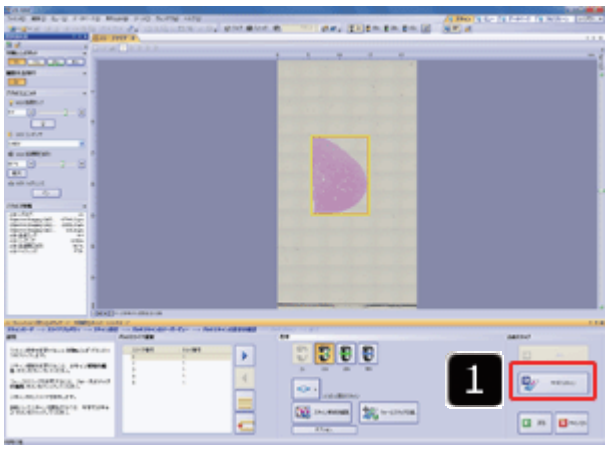
Confirm the (focus map) in the Edit screen.
Delete the focus map by right clicking on it and selecting [Delete] from the menu.
After editing the focus map, press the **[Enter] key** on the keyboard.

The method for adjusting the focus can be set using [Focus Logic]. If [Semi-automatic focusing] is selected, focus can be adjusted manually after the focus is automatically set.
For more information on Focus Logic, refer to Section "1-4 Setting Focus Logic" (page 29) or the online help.

5 Click to select the next slide.

Repeat steps from 2 to 5 for all the slides for which you need to set slide glass information.

8 Starting Scanning (Quick Batch) (Expert Batch)

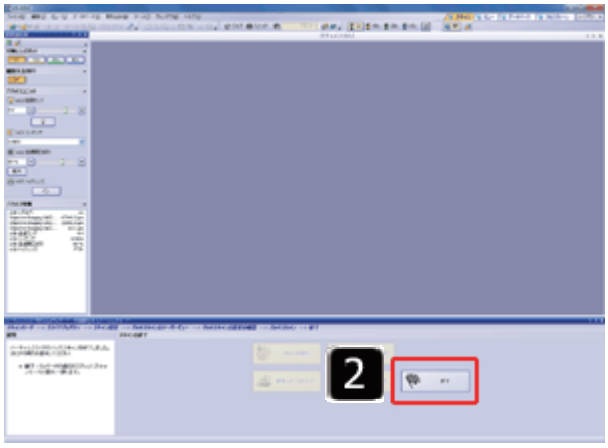


1 Click

.

Avoid movement or vibration of the system during scanning.

9 Finishing Scanning (Quick Batch) (Expert Batch)



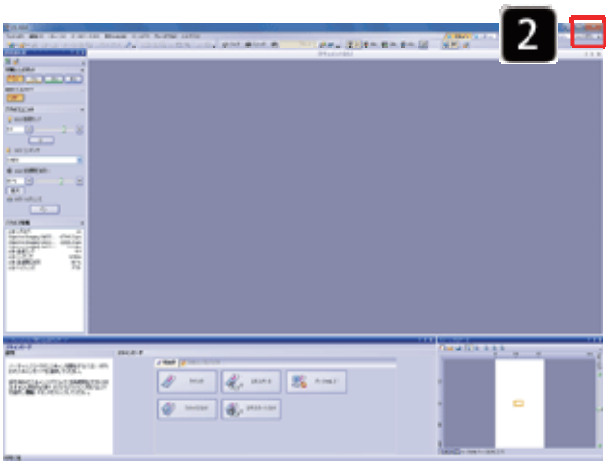
1 When the scan is complete, a screen similar to the one shown on the left is displayed.

2 Click

to complete the scan.

10 Turning Off the System (Quick Batch) (Expert Batch)

1 Tilt the lever of the joystick to move the stage toward you.



2 Remove and take out the slide glass.
Click on the upper right corner of the VS-ASW screen.

3 First, shut down the Windows, and turn off the the microscope control box and monitor.

1-3 VS120-S1

This section describes how to acquire image of one slide glass set on the stage.

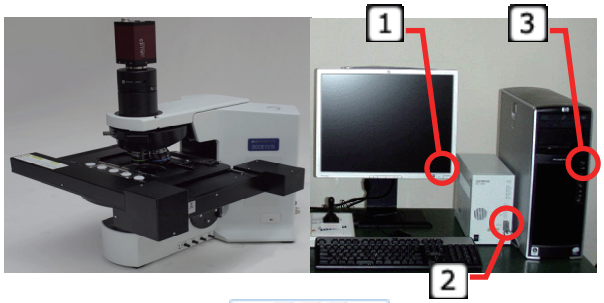
For this purpose, the following modes are available:

Quick: It is to acquire image automatically without making precise settings.
When this mode is selected, follow procedures in the sections whitch carry **(Quick)** marks on top of the sections.

Expert: It is to acquire image by setting the scanning area (XY) and focus.
When this mode is selected, follow procedures in the sections whitch carry **(Expert)** marks on top of the sections.

Virtual-Z: It is to acquire image by setting the scanning area (XY) and Z.
When this mode is selected, follow procedures in the sections whitch carry **(Expert)** marks on top of the sections.

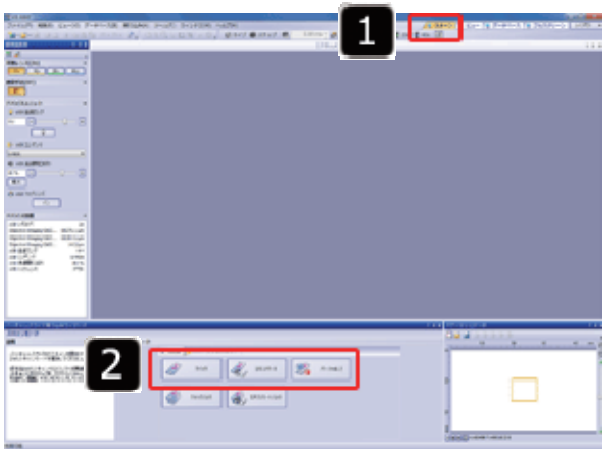
1 Starting Up the System (Quick) (Expert) (Virtual-Z)



1 First, turn on the monitor 1 , followed by the microscope control box 2 , and controller 3 to start up the system.

2 After the system has started up, double click the [VS-ASW] icon on the desktop to start up the software and begin adjustment of the stage.

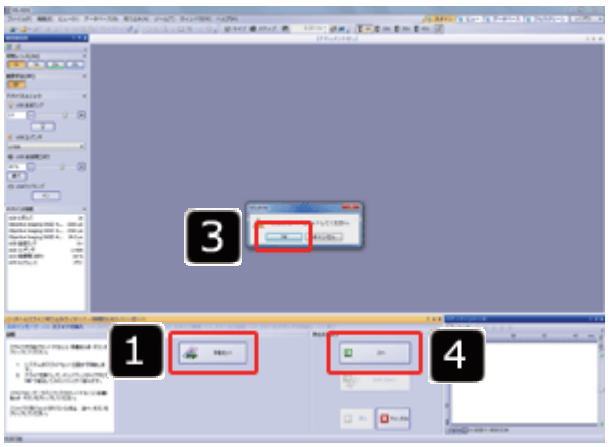
2 Selecting Scan Mode (Quick) (Expert) (Virtual-Z)

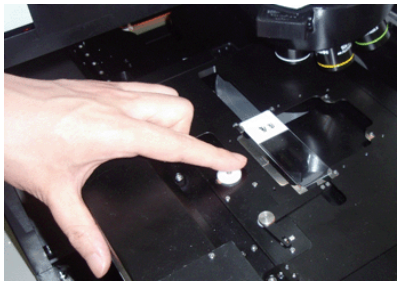


1 Select Scan on the upper right of the screen.

2 Click Quick, Expert, or Virtual-Z.

3 Placing a Slide Glass (Quick) (Expert) (Virtual-Z)





1 Click

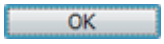
.

The stage moves toward you.

[Please insert a new slide.] message appears in the [VS-ASW] window.

2 Place the slide glass on the stage.

- Make sure that the label is on the left side of the slide glass.

3 Click 

on the [Please insert a new slide.] message in the [VS-ASW] window.

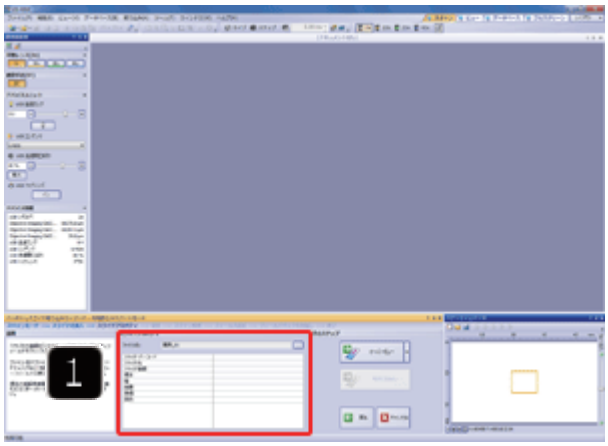
The stage returns to the original position.

4 Click

.

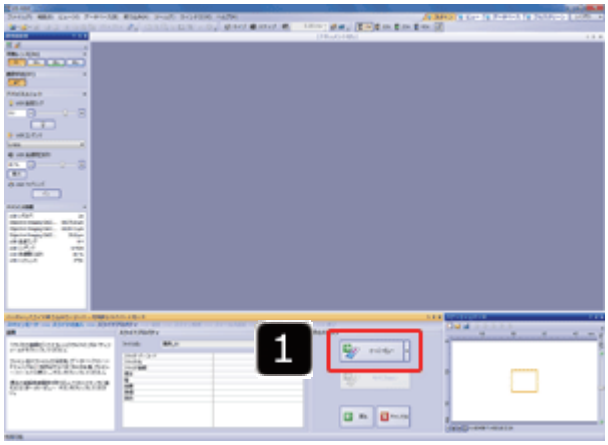
4 Setting Slide Glass Information (Quick) (Expert) (Virtual-Z)

Set information for each slide glass if necessary. It is possible to acquire the image without setting any information.



1 Enter slide glass information.

5 Acquiring an Overview Image (Expert) (Virtual-Z)



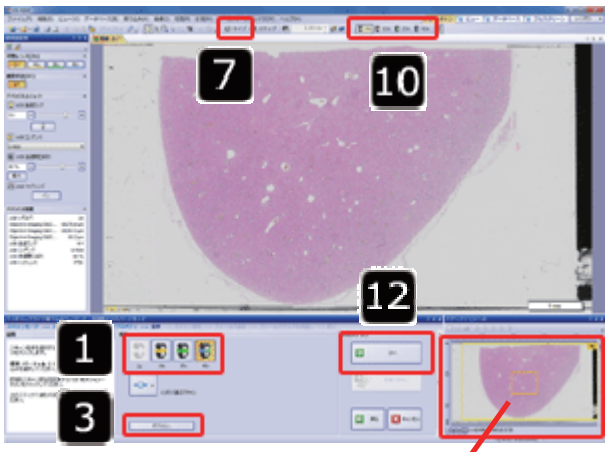
1 Click

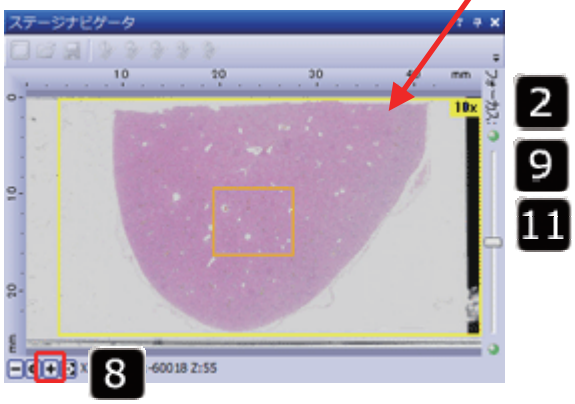
.

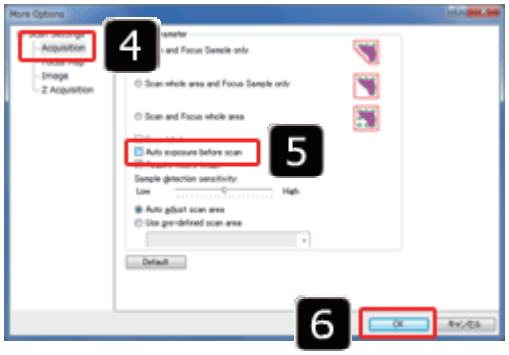
(The 2x objective lens is used for scanning.)

Avoid movement or vibration of the system during scanning of overview images.

6 Selecting the Objective Lens (Quick) (Expert) (Virtual-Z)







1 Click the Objective Lens button that you want to use.
(The check mark appears on the selected objective lens button.)

2 Confirm the scan area using the [Stage Navigator] shown on the lower right of the screen.
The area inside the yellow frame is the scan area detected by the software.

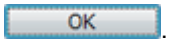
To capture the image in Z mode, click **(Scan one Z plane) button** and then click **[Virtual Z]**.
For more information, refer to the online help.

3 Click

.
The [More Options] window appears.

4 Select [Acquisition] on the left side of the Option window.

5 Uncheck [Auto exposure before scan] in the Options window.

6 Click 

.

7 Click

on the tool bar.
A live image is displayed.

8 Use in the [Stage Navigator] on the lower rightof the screen to enlarge the image.

9 Click the area you need to scan in the [Stage Navigator].
The stage moves to the clicked area.

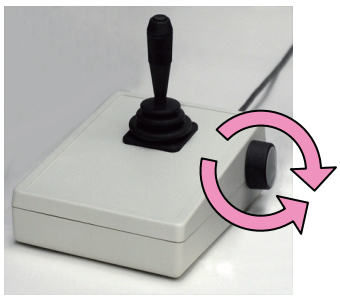
10 Click the Objective Lens button that you want to use.
(The check mark appears on the selected objective lens button.)

11 Change the scan area in the [Stage Navigator] as required.

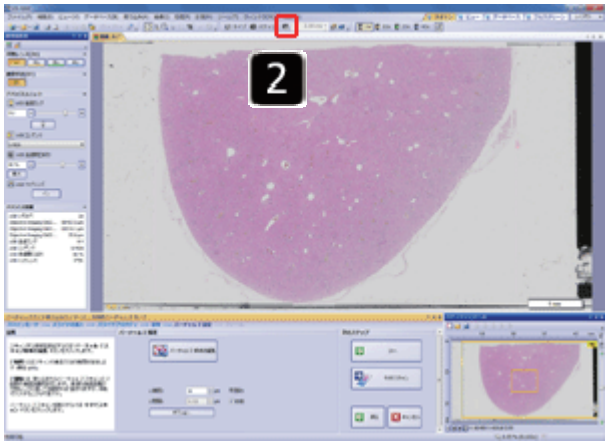
12 Click

.

7 Manual Focusing and Exposure Time Settings (Virtual-Z)



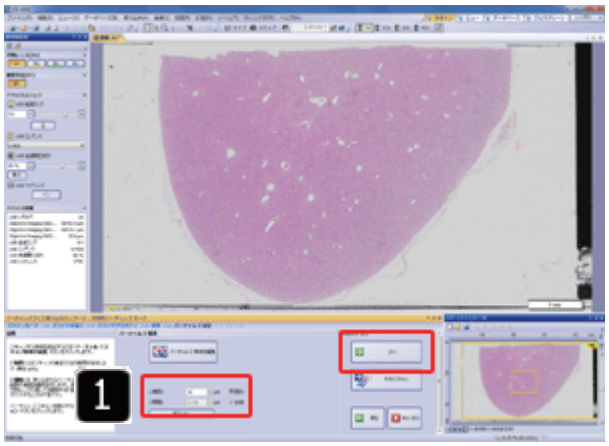
1 Set the focus using the joystick focus dial.



2 Click to set the manual exposure option ( ).

Clicking the button sets a longer exposure time (brighter), and clicking the button sets a shorter exposure time (darker).

8 Editing the Scan Area (Z Area) (Virtual-Z)



1 Set the Z area.

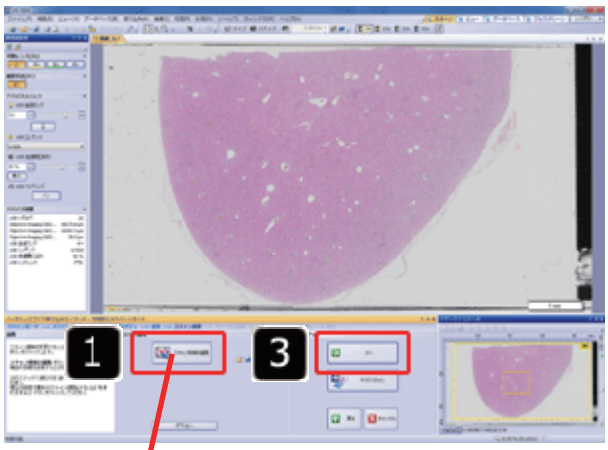
[Z-Range]: a scan range for the Z axis in µm.

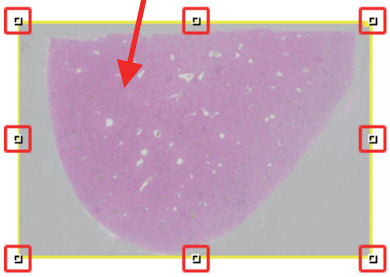
[Z-Spacing]: a scan interval for the Z axis

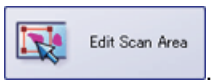
[Plane Count]: the number of scan plans for the Z axis

[Automatic Z-Spacing]: When this item is checked and a value is entered for [Z-Range], [Z-Spacing] and [Plane Count] are computed by the software.

9 Editing the Scan Area (XY Area) (Expert) (Virtual-Z)





1 Click 

.

The Edit screen appears.

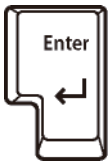
The area inside the yellow frame shown on the Edit screen is the scan area detected by the software.

There are ■ marks on the four corners and the middle point on each side of the Edit screen.

Place the mouse cursor on the ■ mark to edit the yellow frame.

By using the orange square in the Stage Navigator as the standard area, set the scan area.

The area enclosed by the orange square is the one shot field angle for the objective lens selected in Section "7 Manual Focusing and Exposure Time Settings" (page 24).

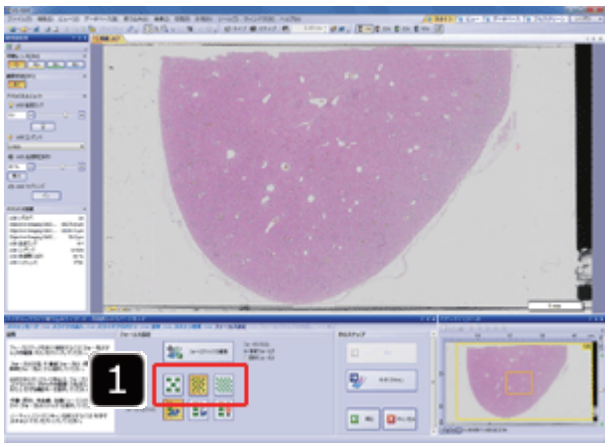


2 After editing the frame, press **[Enter] key** on the keyboard to confirm the scan area.

3 After confirming the area, click

.

10 Setting the Focus (Expert) (Virtual-Z)



1 Select the grid density for the focus map.

(**(Fine focus grid density) is selection for normal use.**)

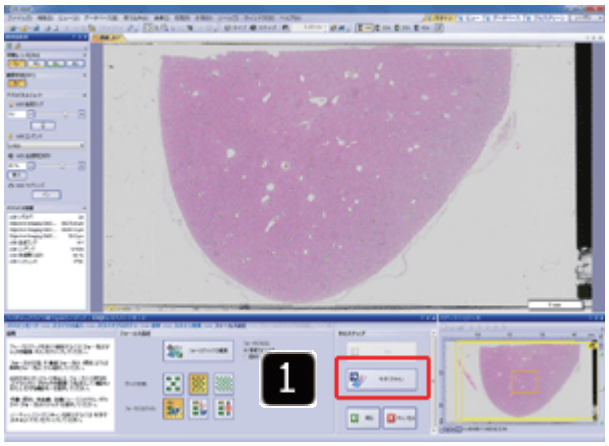
The method for adjusting the focus can be set using [Focus Logic]. If [Semi-automatic focusing] is selected, focus can be adjusted manually after the focus is automatically set.

For more information on Focus Logic, refer to Section "1-4 Setting Focus Logic" (page 29) or the online help.

Selecting [Prefocus (flat)] from the [Focus Method] enables calculation of the horizontal surface by averaging all the focus map potisions

For more information on the [Focus Method], refer to the online help.

11 Starting Scanning (Quick) (Expert) (Virtual-Z)



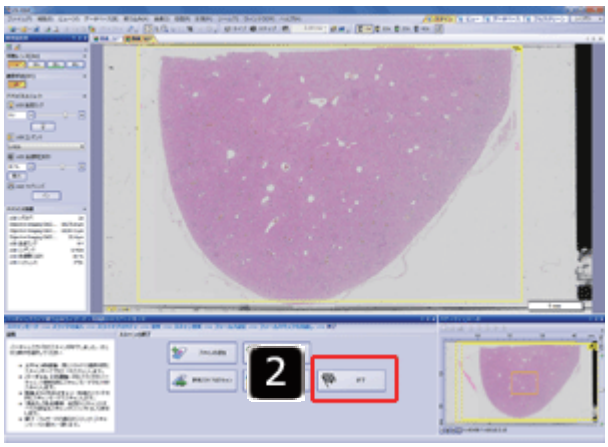
1 Click

.

Scanning starts.

Avoid movement or vibration of the system during scanning.

12 Finishing Scanning (Quick) (Expert) (Virtual-Z)

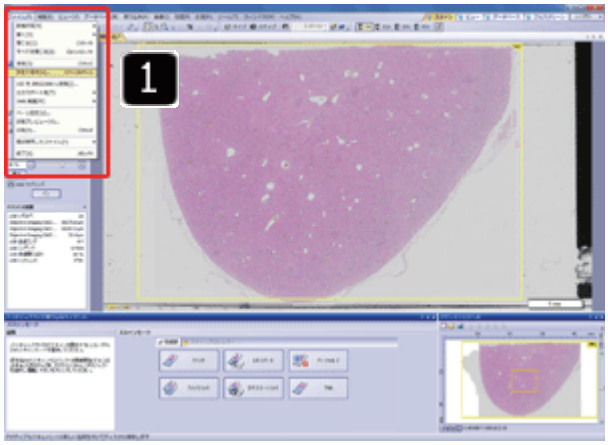


1 When the scan is complete, a screen similar to the one shown on the left is displayed.

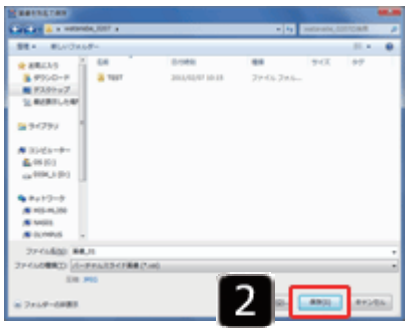
2 Click

to complete the scan.

13 Saving Files (Quick) (Expert) (Virtual-Z)



1 Select **[File]** > **[Save As]** from the menu at the top of the screen.

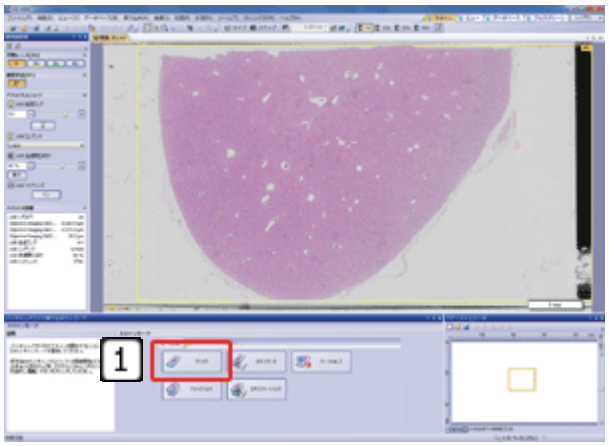


The [Save Image As] window appears.

2 Enter the file name, specify the location to save the file, and click

.

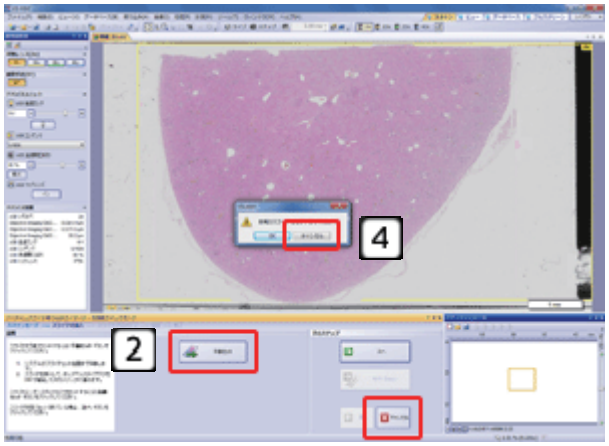
14 Turning Off the System (Quick) (Expert) (Virtual-Z)



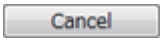
1 Remove and take out the slide glass.

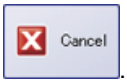
1. Click

.

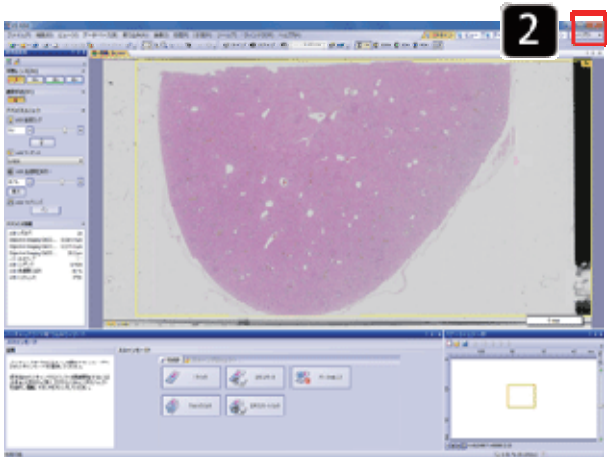


2. Click

.
The stage moves toward you.
3. Remove and take out the slide glass.
4. Click 

on the [Please insert a new slide.] message in the [VS-ASW] window.
5. Click 

.



2 Click on the upper right corner of the VS-ASW screen.

3 First, shut down the Windows, and turn off the the microscope control box and monitor.

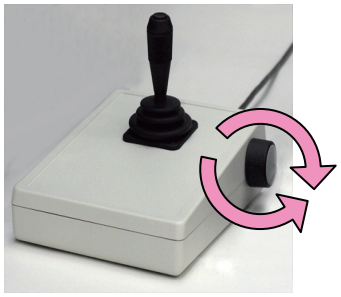
1-4 Setting Focus Logic

This section describes how to set the method for adjusting the focus for each slide glass.

TIP For more information on Focus Logic, refer to the online help.

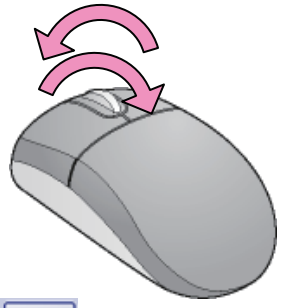
1 From the [Focus Logic] options on the focus settings screen, select either **[Automatic focusing]**, **[Semi-automatic focusing]**, or **[Manual focusing]**.

- **[Automatic focusing]** :
  The focus is automatically adjusted; no further operation is required.
- **[Semi-automatic focusing]** :
  Enables manual adjustment of the focus after Auto Focus.
  After Auto Focus is complete, go to step 2.
- **[Manual focusing]** :
  Enables manual adjustment of the focus. Go to step 2.



2 Adjust the focus.

- Rotate the joystick focus dial.



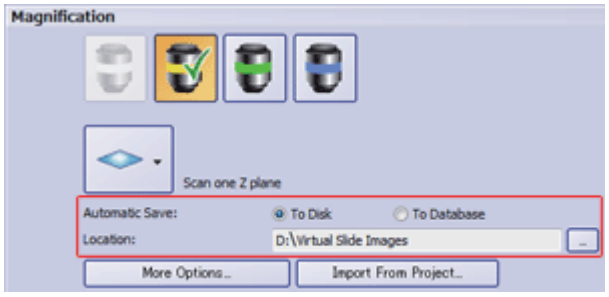
- Press the **[Ctrl]** key on the keyboard, and while the mouse cursor is shown as Z (↕), rotate the mouse wheel button.

3 Click (Move to next focus point) or (Move to previous focus point) and repeat step 2.

1-5 Changing the Save Location for Acquired Images

Acquired images are automatically saved.

If using a database, you can set the image save location to either the hard disk drive (default) or the database.



1 Select either [To Disk] or [To Database] from the [Automatic Save] options on the screen for selecting the objective lens.

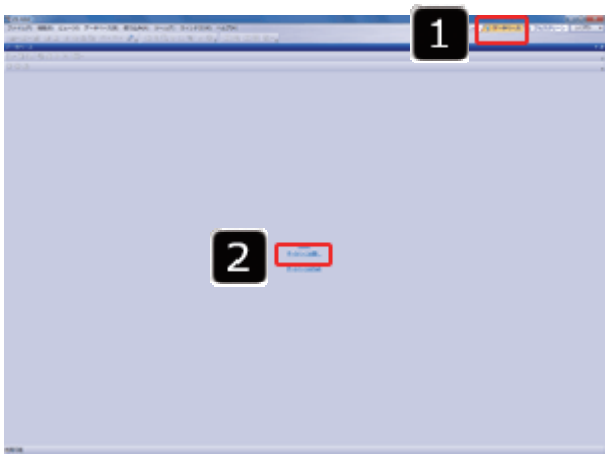
2 Click the ... button under [Location], and set thesave location for the image in the screen displayed.

TIP This operation can be used in Quick Batch Mode and Expert Batch Mode. In Quick, Expert, or Virtual Z mode, click More Options... and setthe save location in the window displayed.

2 Databases

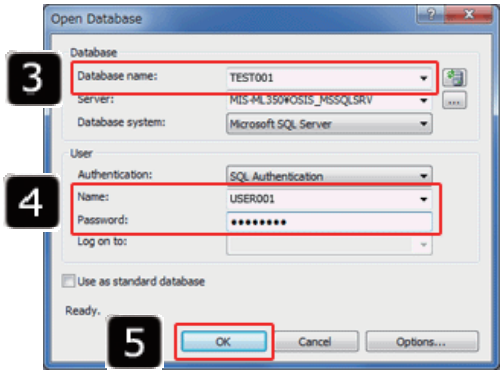
NOTE **This procedure is available only when you are using a database.**

2-1 Opening Database



1 Select Database on the upper right of the screen.

2 Click [Open Database]



The [Open Database] window appears.

3 Confirm the [Database name] of the Database to open.

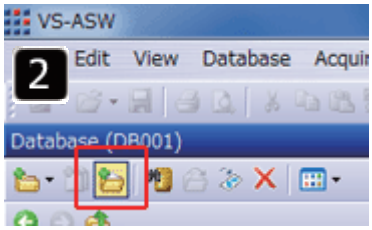
4 Enter the user name and password.

5 Click OK.

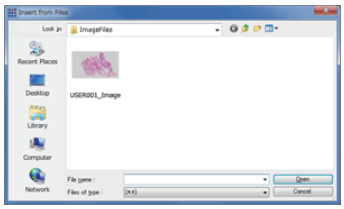
2-2 Registering Images

2-2-1 Registering Image Files on a Hard Disk Drive

1 From the [Tree View] on the lower left of the screen, specify the folder to which you need to register images.

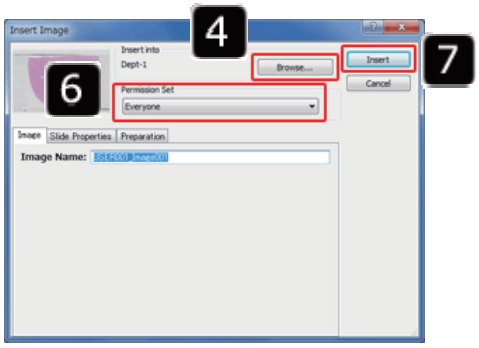


2 Click the **(Insert from Files) button** from the tool bar on the upper part of the screen.



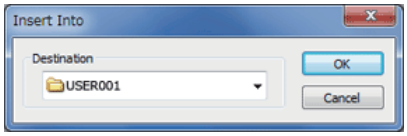
The [Insert from Files] window appears.

3 Select the image that you want to register to the database, and click Open.



The [Insert Image] window appears.

4 Click Browse... in the upper part of the window.



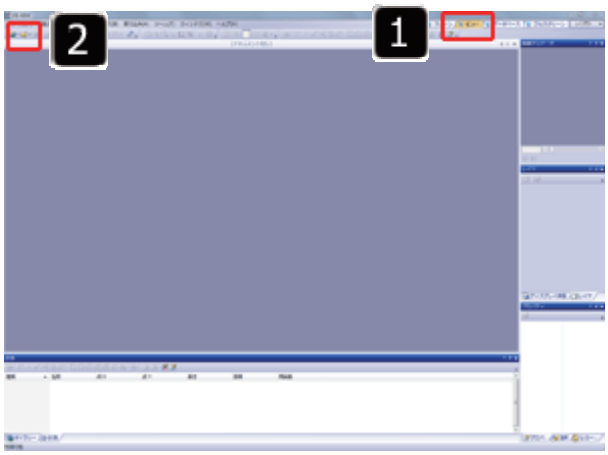
The [Insert Into] window appears.

5 Confirm that the folder shown under **[Destination]** is the one that you opened in step 1 and click the OK.

6 Under **[Permission Set]** in the [Insert Image] window, set access rights for the files to be registered.

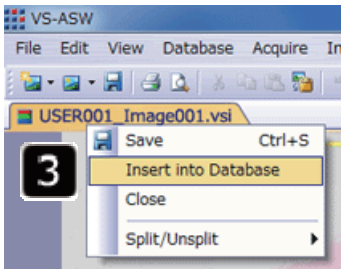
7 Click Insert.

2-2-2 Registering Image Files after Viewing

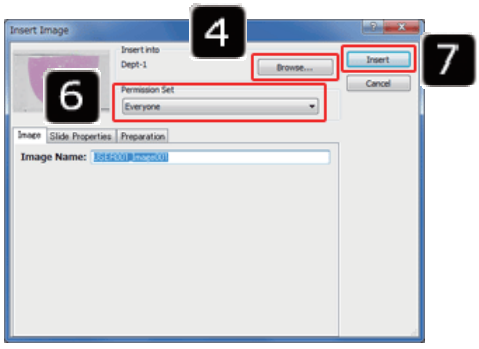


1 Select View on the upper right of the screen.

2 Click the **(Open File)** in the tool bar on the upper left of the screen to open the image file.



3 Right click the tab for the image file, and from the menu displayed, click **[Insert into Database]**.



The [Insert Image] window appears.

4 Click Browse... in the upper part of the window.

The [Insert Into] window appears.

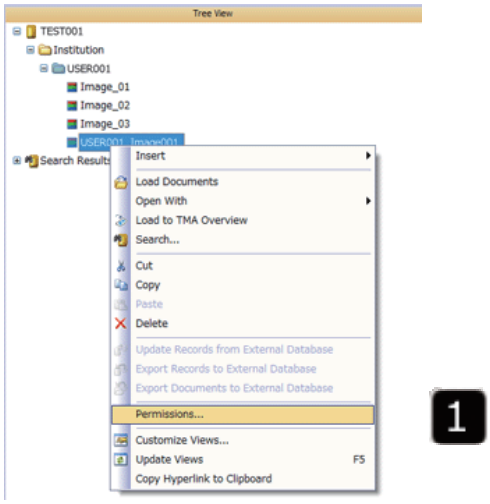
5 Select the folder to which you need to register the file under **[Destination]** and click OK.

6 Under **[Permission Set]** in the [Insert Image] window, set access rights for the files to be registered.

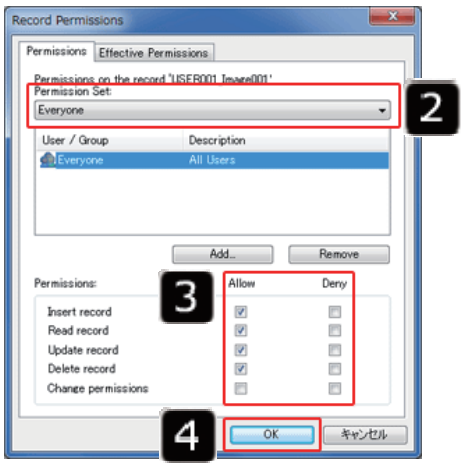
7 Click Insert.

2-3 Setting Permission for Images

Change the access rights for images in the database as required.



1 Right click the file for which you need to change authorization, and select **[Permissions]** from the displayed menu.



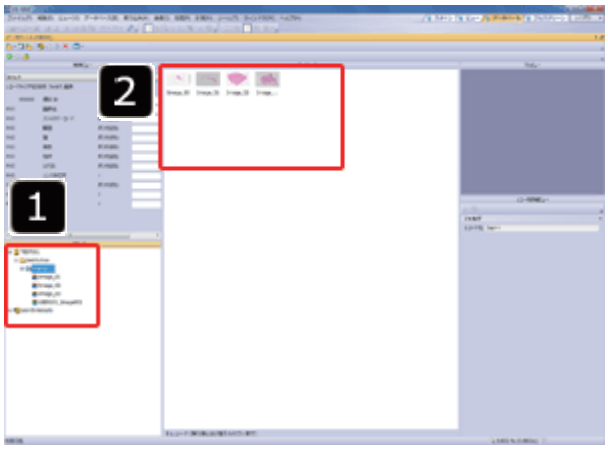
The [Record Permissions] window appears.

2 From **[Permission Set]**, select the user whose access rights you want to change.

3 Put a check mark to each of the **[Allow]** and **[Deny]** checkboxes.

4 When the setting is complete, click OK.

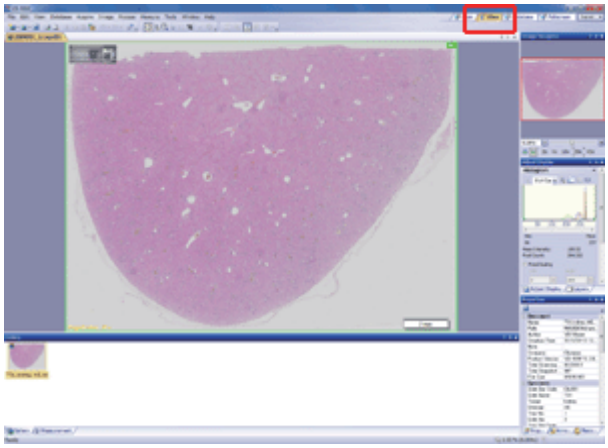
2-4 Viewing Images



1 From the [Tree View] on the left of the screen, specify the folder in which the image you want to view is saved.

2 The images saved in the folder and thumbnail images of the files are displayed.

Double click the image file that you want to view.



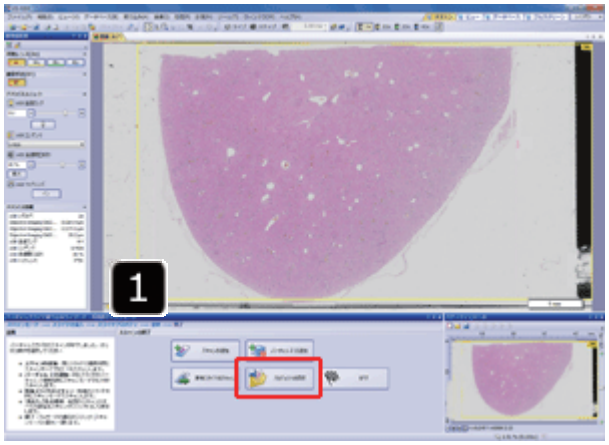
The tab switches from the [Database] tab to the [View] tab and the image is displayed.

3 Using Scan Projects

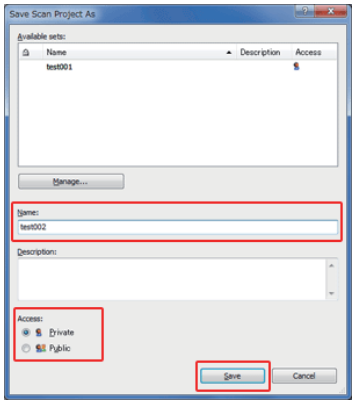
The scan area and other detailed image acquire settings can be saved and used to acquire images in the next scanning.

TIP For more information on scan projects, refer to the online help.

3-1 Saving Scan Projects



1 In the Finish Scan screen, click Save Project.

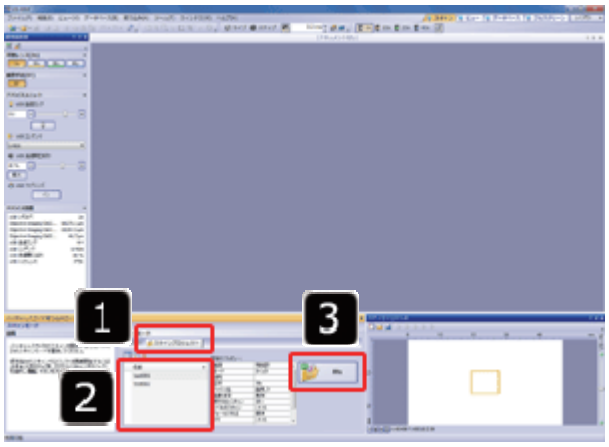


The [Save Scan Project As] window appears.

2 Enter the file name, set the access rights, and click Save.

3-2 Roading Scan Projects

This section describes how to road a saved scan project and start scanning.



1 Open the [Scan Projects] tab Scan Projects.

2 From the list of saved scan projects, select the scan project that you need to road.

3 Click Start.

The scan setting is read.

OLYMPUS CORPORATION
Shinjuku Monolith, 3-1, Nishi Shinjuku 2-chome,Shinjuku-ku, Tokyo, Japan
OLYMPUS EUROPA HOLDING GMBH
Wendenstrasse 14-18, 20097 Hamburg, Germany
OLYMPUS AMERICA INC.
3500 Corporate Parkway, Center Valley, Pennsylvania 18034-0610, U.S.A.
OLYMPUS SINGAPORE PTE LTD.
491B River Valley Road #12-01/04 Valley Point Office Tower, Singapore 248373
OLYMPUS AUSTRALIA PTY. LTD.
31 Gilby Road, Mount Waverley, VIC., 3149, Melbourne, Australia
OLYMPUS LATIN AMERICA, INC.
5301 Blue Lagoon Drive, Suite 290 Miami, FL 33126, U.S.A.

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