RICOH THETA Stitcher Manual for macOS

● Product overview

This software is for stitching together images that were output as raw images by RICOH THETA and then developed by Adobe Photoshop Lightroom Classic.

● Recommended operating environment

This software operates in the following environment.

✓ macOS: 10.15 Catalina, 11 Big Sur, 12 Monterey

✓ GPU with support for OpenGL 4.1 or later must be installed.

✓ 16 GB or more of DRAM is recommended.

✓ 4 GB or more of Video RAM is recommended.

✓ Adobe Photoshop Lightroom Classic: Version 11.4.1

● Installation procedure

Run the "RICOH THETA Stitcher Setup.pkg" and install the app while following the instructions in the installer dialog boxes.

● Uninstallation procedure

Drag "/Application/ RICOH THETA Stitcher/" to the "Recycle bin".

● Using RICOH THETA Stitcher from Adobe Photoshop Lightroom Classic
   Configure the settings with the following procedure.

1. Launch Adobe Photoshop Lightroom Classic.

2. Select [Preferences] from the [Lightroom] menu.

3. Click [Choose] in the [Additional External Editor] area on the [External Editing] tab of the Preferences dialog box.

4. Select "/Application/ RICOH THETA Stitcher/ RICOH THETA Stitcher.app".

5. Select [Save Current Settings as New Preset] from the [Preset] menu in the [Additional External Editor] area.

6. Enter "RICOH THETA Stitcher" for the preset name and then click [Create].

7. Click [×] on the top left.

● Stitching with RICOH THETA Stitcher

Use this software as described in the following procedure.

< When activated as an Adobe Photoshop Lightroom Classic plug-in>

1. Import raw images into Adobe Photoshop Lightroom Classic.

2. After the developing and other processing is complete, click [File] - [Export] on the menu bar

3. In the [Export Location] area, select [Same folder as original photo] for [Export To] and then clear the [Put in Subfolder] check box.
   Recommendation: Select the [Add to This Catalog] and [Add to Stack] check boxes in the [Export Location] area.

   (Note) The exported image file and the original DNG file must be saved in the same folder. If the original DNG file does not exist in the same folder as the exported image file, the DNG file selection screen(*) appears. You can manually specify the original DNG file on this screen.
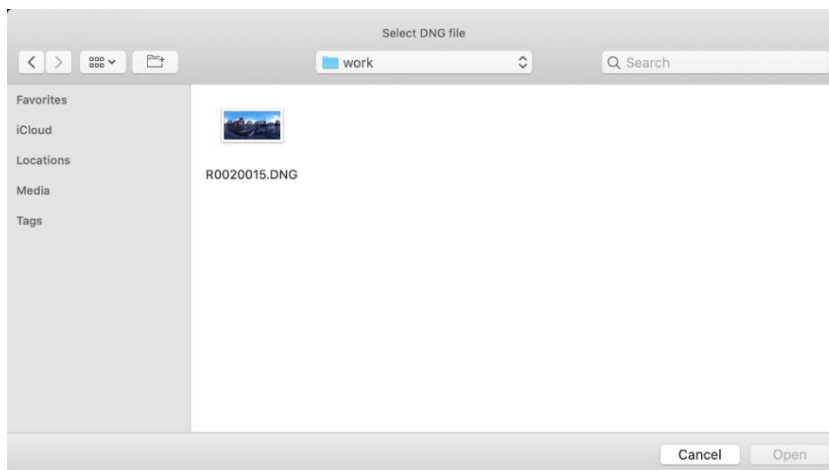

4. Select the check box for [Rename To] under the [File Naming] field, and select the desired settings.

5. Select JPEG or TIFF for [Image Format] in the [File Settings] area.

6. Clear the [Resize to Fit] check box in the [Image Sizing] area.

7. Under the [Post-Processing] field and [After Export], select "Open in other application ...".

8. Under [Application], select "Application / RICOH THETA Stitcher / RICOH THETA Stitcher".

9. Click [Export] at the bottom right.

< When activated as standalone software>

1. Develop the RAW images with Adobe Photoshop Lightroom Classic, and then export them as dual-fisheye JPEG/TIFF files.

2. Click the RICOH THETA Stitcher icon to activate it, and then drag and drop the exported image file.

   (Note) The exported image file and the original DNG file must be saved in the same folder. If the original DNG file does not exist in the same folder as the exported image file, the DNG file selection screen(*) appears. You can manually specify the original DNG file on this screen.
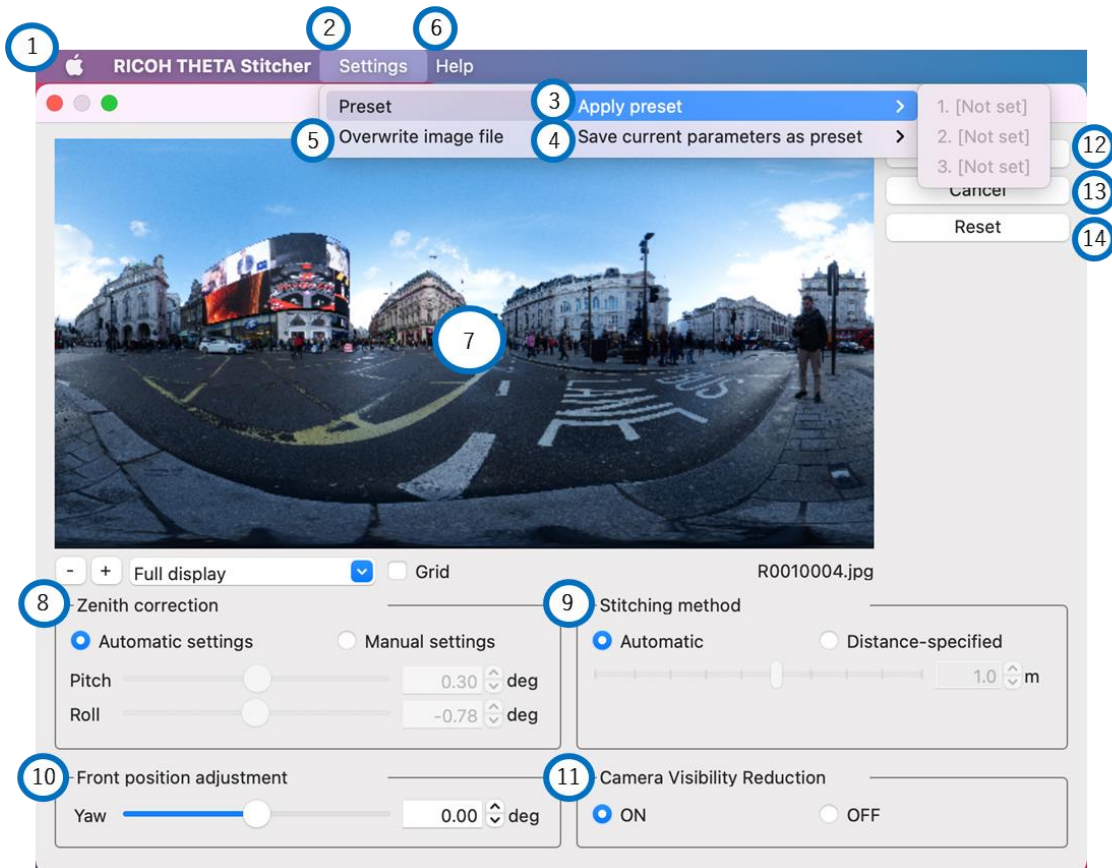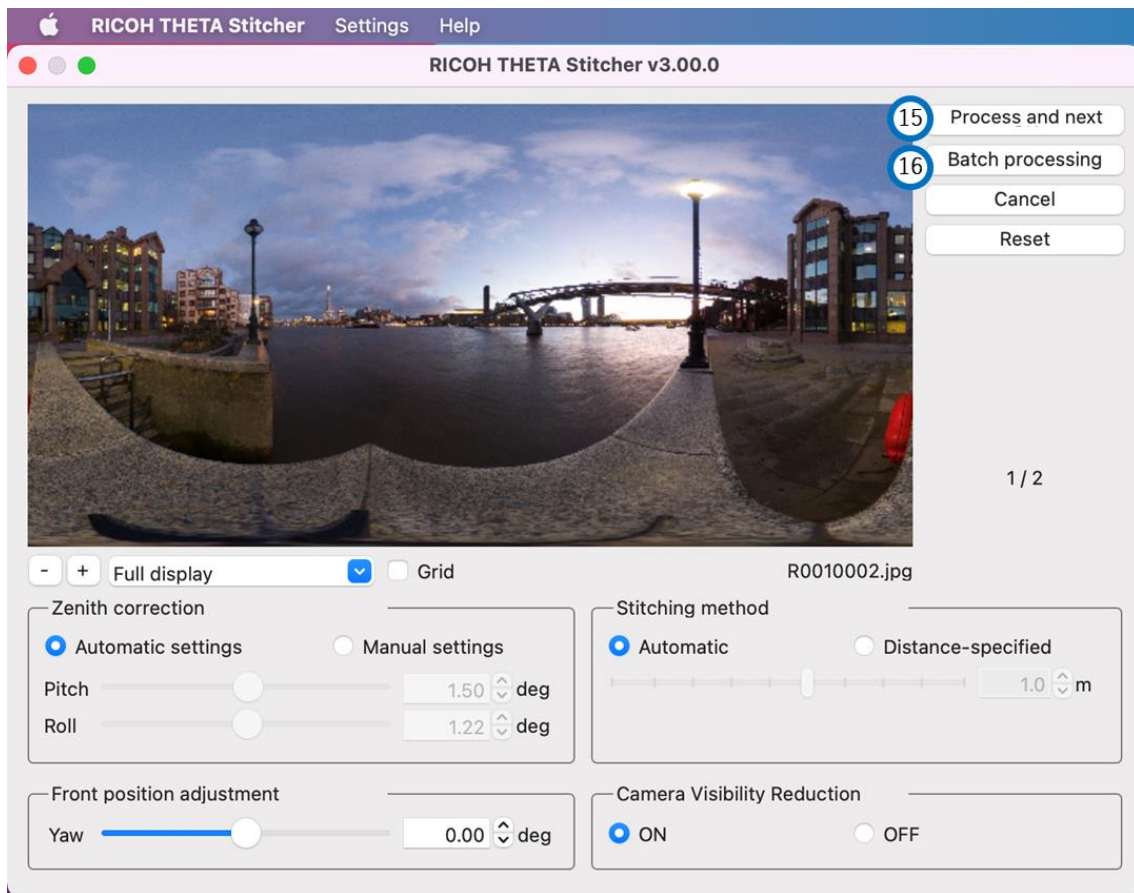
(*) DNG file selection screen

● Screen

The following describes the screen of this software. The screen that appears differs depending on the number of exported images.
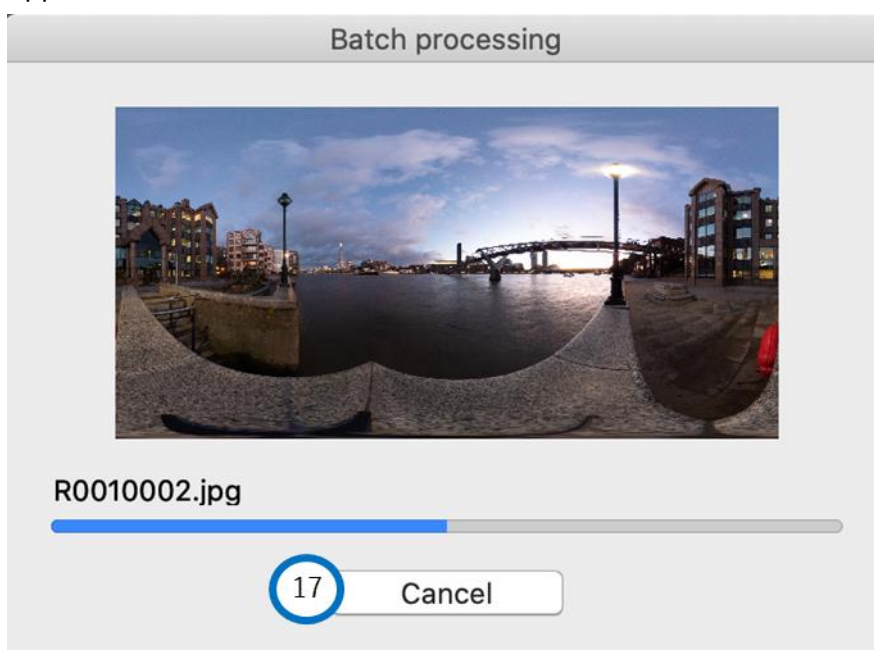
＜When processing a single image＞

＜When processing multiple images＞

During batch processing, the following screen showing the processing progress appears.

	Item name	Description	Default value	Settable values
①	Window	The display size can be changed by dragging the edge of the window.	－	－
②	Settings	Changes various settings.	－	－
③	Apply preset	The saved preset will be applied.	－	－
④	Save current parameters as preset	You can save up to 3 presets of all stitching parameters* and apply them to different images. (* Zenith correction, front position adjustment, stitching method, and camera visibility reduction)	－	－
⑤	Overwrite image file	Unchecking the checkbox adds "_er" to the end of the file name and saves it as a separate file.	－	－
⑥	Help	Displays the manual.	－	－
⑦	Preview area	Displays a preview of the stitching result.	－	－
⑧	Top/bottom correction	Performs rotation correction so that the sky is up and ground is down.	Automatic	Automatic or Pitch: -90.00 to 90.00 [deg] and Roll: -180.00 to 180.00 [deg]
⑨	Stitching method	Method to use when stitching together two images. Basically, we recommend setting this to [Automatic] but the distance for stitching can also be fixed	Automatic	Automatic or 0.30/0.40/0.50/0.60/0.75/1.00/1.50/3.00/5.00/∞

		as desired.		[m]
⑩	Front position adjustment	Moves the images parallel in the horizontal direction. Use this when you wish to adjust the composition.	0.00 [deg]	-180.00 to 180.00 [deg]
⑪	Camera Visibility Reduction	[ON] Reduces the amount the camera is captured in the shot. [OFF] Improves stitching accuracy towards the bottom of the camera.	Different depending on the image	ON, OFF
⑫	OK	Outputs the stitching result.	―	―
⑬	Cancel	End RICOH THETA Stitcher. *Images will be saved as they were prior to stitching in Adobe Photoshop Lightroom Classic.	―	―
⑭	Reset	The parameters will be reset to their default values.	―	―
⑮	Process and next	You can continue with the next image and process it after outputting the stitching results.	―	―
⑯	Batch processing	Two or more images will be batch processed with the same settings.	―	―
⑰	Cancel	RICOH THETA Stitcher will end after processing the current image. Subsequent images will be saved as they were prior to stitching.		

● Troubleshooting

Message displayed	Description/solution
No compatible DNG files	DNG files that can be processed on this software are RAW image files output from RICOH THETA.
Files other than JPEG and TIFF are not supported	Formats that are supported on this software are JPEG and TIFF. When activating from Adobe Photoshop Lightroom Classic, select JPEG or TIFF as the file format.
The DNG file was not found. Check "Stitching with RICOH THETA Stitcher" in [Help] for details.	Specify the original DNG file on the "DNG file selection screen". When activating from Adobe Photoshop Lightroom Classic, refer to the above "Stitching with RICOH THETA Stitcher" item, and then set [Export Location] or [File Naming] correctly.
The images could not be processed successfully: 0x00000001	DNG files that can be processed on this software are RAW image files output from RICOH THETA.
The images could not be processed successfully: 0x00000005, 0x00010500, 0x00010501, 0x00010502, 0x00010503, 0x00010504, 0x00010506	Update the driver of the graphic board.
The images could not be processed successfully: 0x00010505	There is insufficient memory.