



ZEISS Xradia 5xx Versa

Vertical Stitch for v11 Quick Reference Guide

For use by operators who have completed basic training

Basic Steps

- Scout Page - Acquisition Tab: Setup sample parameters like normal scans
- Scout Page - Vertical Stitch Tab: Select and save top view
- Scout Page - Vertical Stitch Tab: Select and save bottom view
- Scan Page - Set up 3D scan parameters for the recipe.
- Run Page - Run the recipe and acquire the tomographies.

Setting up scans for auto-recon and auto -stitching

(Detailed instructions can be found in the Vertical Stitching technical procedure)

1. Follow the instrument user guide to establish standard scanning parameters, such as FOV, kV, acquisition time, physical filter, etc. using the Scout and Scan Interface, for your sample.
2. Make sure your sample is mounted as vertical as possible, and centered in both 0 and 90 degree planes.
3. In the scout page, under the Acquisition Tab, select "Stitch" as the Field Mode.
4. Go to and click the Vertical Stitch tab.
5. Click on the "Top View" button on the right hand side of the scout window.
6. Click on the  button to start the continuous imaging and use the Sample Y motion controller to move the sample till the TOP of the sample or the desired ROI is in the FOV.
7. Click the "Save Top" button to "lock – in" the Top Y position.
8. Click on the "Bottom View" button on the right hand side of the scout window.
9. Click on the  button to start the continuous imaging and use the Sample Y motion controller to move the sample till the BOTTOM of the sample or the desired ROI is in the FOV.
10. Click the "Save Bottom" button to "lock – in" the Bottom Y position.
11. The number of segments needed to cover the desired vertical range is shown under # Segments in the recipe point.
12. If the Minimum Overlap is much smaller than the Actual Overlap (there are many mm available in "Extra Range available" parameter), repeat steps 5-10 (as required), changing the Top/Bottom sample Y, to increase the total range of the stitch or decrease the number of required stitched segments.
13. Click the  button and go to the Scan step. Select the scan parameters, just like in the normal scan setup. The selections are applied to all the stitch segments.
14. Click the  button and go to the Run step. Click on the Start button to start the tomography. If the auto stitch option in the vertical stitch tab was left enabled, progress bars for "auto-recon" and "auto-stitch" will appear.

Manual Stitching

(Detailed instructions can be found in the Vertical Stitching technical procedure)

In the case of failed auto-reconstructions or unsatisfactory center shift or beam hardening values used for auto-stitch, manual stitching should be performed.

15. Using Scout-and-Scan Reconstructor v 11.0.xx, reconstruct one segment with the desired parameters with global byte scaling (under reconstruction settings tab). Do not crop or rotate.
16. Once reconstruction of the 1st segment is complete, open the raw data (.txrm) of the next segment.
17. Select the reconstructed file (.txm) of the 1st segment under "Copy Recon Settings From" parameter to copy over the beam hardening correction, scaling and recon filter settings.
18. Make sure the center shift value is correct for the new segment and start the reconstruction.
19. Repeat steps 17 and 18 to reconstruct all the individual segments.
20. Open the manual stitcher from Programs> Carl Zeiss X-Ray Microscopy>Xradia Versa 11.0.xxxx> Manual Stitcher Scout-and-Scan 11.0.xxxx.

21. Select all the reconstructed files (.txms) using the  button. Shift Select to choose multiple files.
22. Provide an output file name and click on the START button to initiate the stitch.