

18. Panorama tool



Panorama tool of JENOPTIK GRYPHAX® software

The "*Panorama tool*" of JENOPTIK GRYPHAX software enables user to create large images of specimen without motorized x/y stages at live!

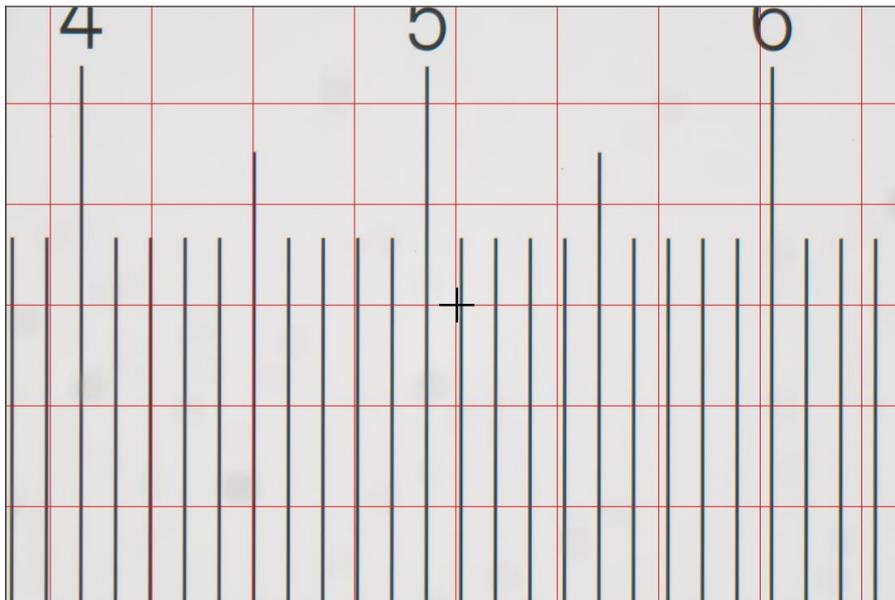
18.1 Preparations:

To reach to best results with *Panorama tool* you have to **adjust the alignment** of camera related to the stage before you start using *Panorama tool*.

To adjust the alignment you can use the "**Grid**" function (keyboard short cut "g") and the JENOPTIK GRYPHAX® calibration slide / stage micrometer (order number: 648806).



Grid overlay on live image to adjust alignment:



Note: To improve the panorama image creating the camera should deliver the highest live frame rate. Reduction of live resolution and exposure time enables highest live frame rate. Furthermore, deactivate of FX tools "Sharpen", "Dynamic" and "Noise reduction" increases live frame rate as well.



18.3 Lost matching:

In case of lost matching point the tool change to "recovery mode" the live preview rectangle displays semi-transparent live image from the camera. The camera button continue shows the "REC" label.

Furthermore, the software tries to find a match between the current live image from the camera and the surrounding background. When the match is found, the live rectangle jumps to the matched position automatically and the state changes to "painting mode" again. Now you can continue with panorama image combining.

Hint: During "recovery mode" you should move the microscope stage to some previous position, so the image will show an area which has recently been painted into the background. Then the match can be easily found and painting will continue from the position where tracking had been lost.

If the "REC"  button is pressed during recovery mode, the tool goes back to "painting mode" from the current position immediately. In addition, you can continue with image combining.

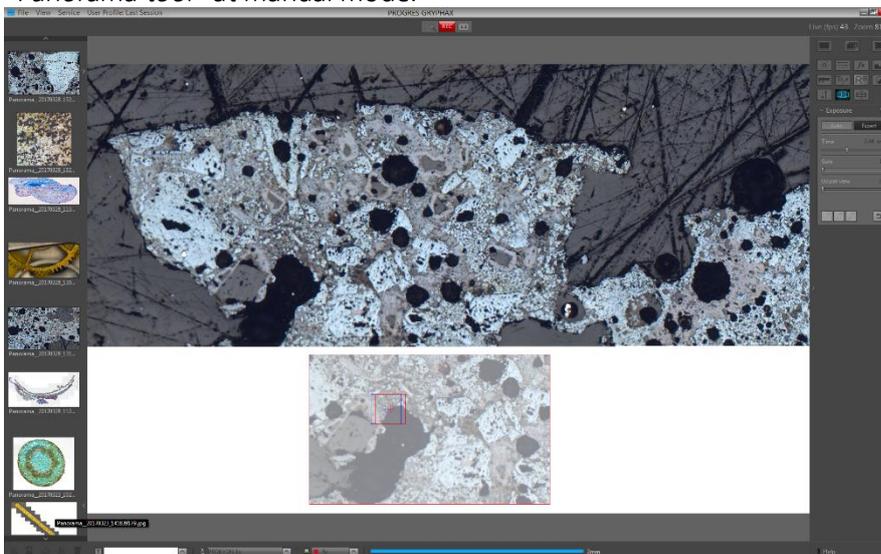
18.4 Manual mode:

At any time, user can drag the live rectangle on the background area using the mouse. After dragging, the "manual mode" is activated. The live rectangle displays semi-transparent live image from the camera and the camera button continue shows the "REC" label.

After dropping, the image combining can be continued by pressing the "REC"  button. When user hover the live rectangle on the background area where the match between the background and the image can be found, the matched area is marked by a white border rectangle. If during that, user drops the rectangle, it snaps to the matched area and the painting mode activates automatically!

"Manual mode" can be used to start the panorama composition from an arbitrary position on the background, or to continue painting from well-defined position in a case, when tracking has completely lost.

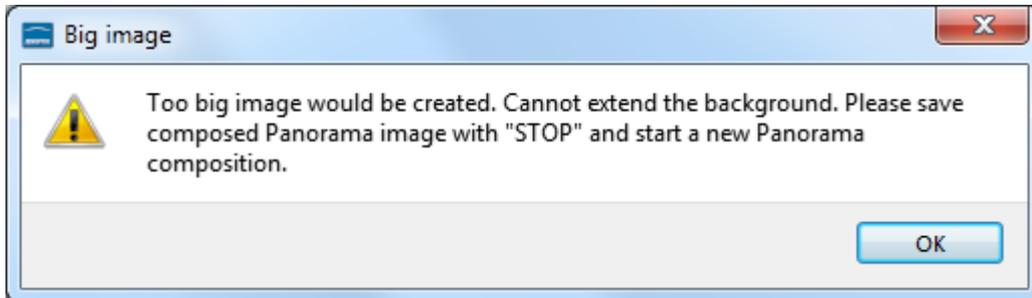
"Panorama tool" at manual mode:





Limitations:

- a) The image size for Panorama images is limited to approx.: 120 MP (mega pixels)
The software will display a warning message as follows:



Please stop painting image and save the panorama image by using "STOP"  button.

- b) The movement detection and tracking algorithm is based on well-defined features (details) in the live image. It cannot work well when those features cannot be found i.e:
- When the image shows empty, even areas. Very bright or very dark.
 - When the image is blurry or out of focus.
 - When the image shows a repetitive pattern (e.g. grid) so identical features appear everywhere.
 - When the framerate is low due to a high camera resolution or high exposure time.