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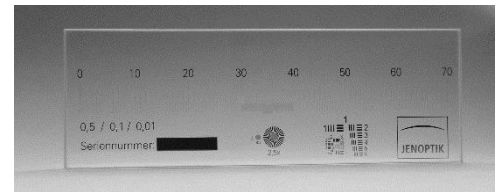
## User Guide for Panorama tool of PROGRES GRYPHAX® software

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

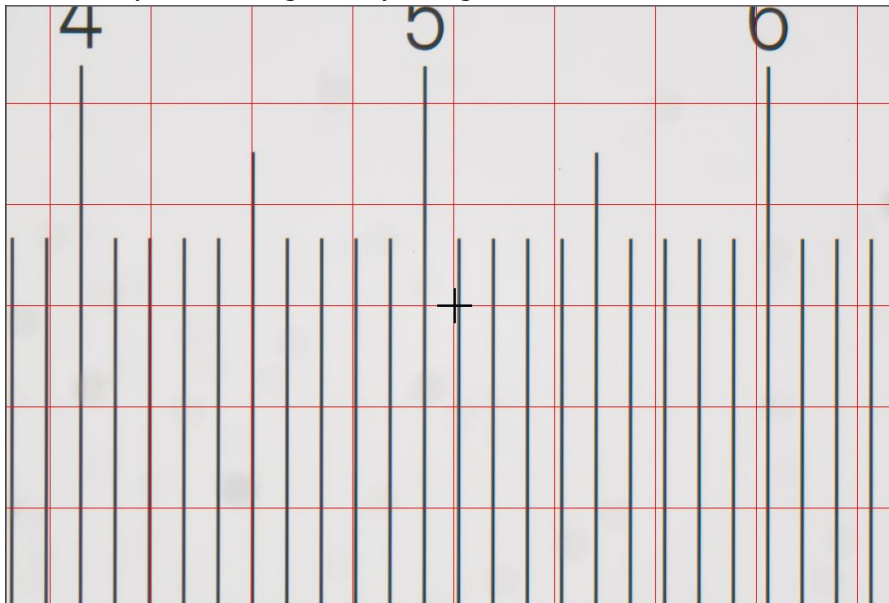
### Preparations:

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 PROGRES GRYPHAX® calibration slide (order number: 563683).



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.




Start:

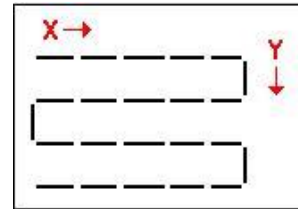
After successful preparation you can open "Panorama tool" by click on Panorama icon: 

To define the Panorama **start position** for image combining, please move the live rectangle via drag & drop to the start position.

Press "REC" button  to start panorama image record.

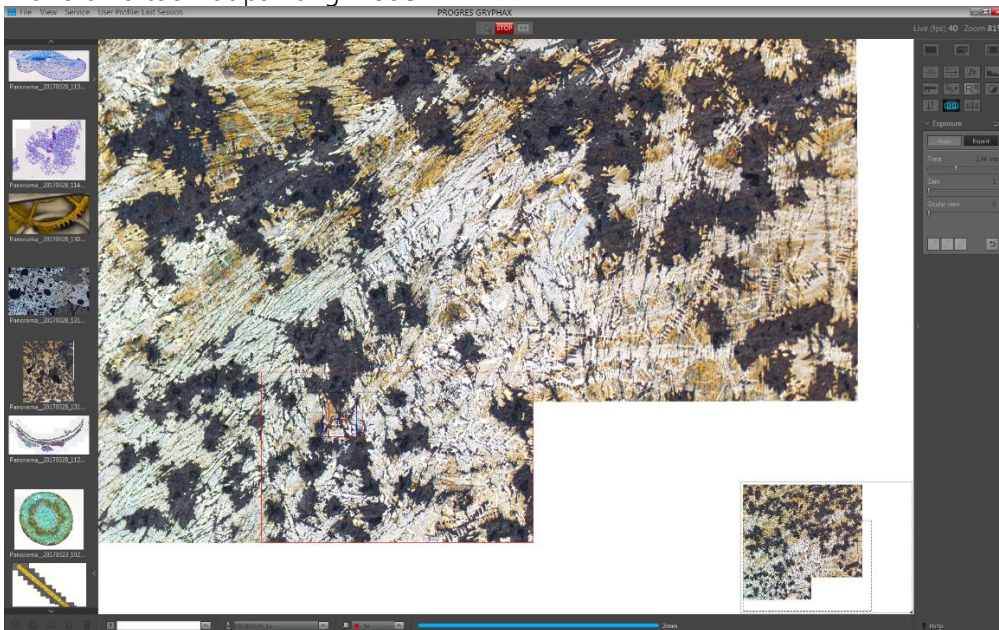
The *Panorama tool* change to "painting mode" (this is the basic mode). The live rectangle shows a red frame and the tool is observing the live image for movement of the specimen. Additionally, the "REC" button change to "STOP"  to save the composed image at any time if you are satisfied with the panorama image. After save of panorama image the software returns back to *Panorama tool* to start a new image creation.

To start image combining please move the microscope stage gently to compose panorama image by a meander loop like as follows and keep an overlap of 1/3 of the live rectangle!



During stage movement the *Panorama tool* detects and tracks the movements and accordingly moves the live rectangle on the background. The image is painted (stamped) on the background creating panorama. The stamp happens when the rectangle reaches some distance since the last stamp. Note, that the image must be stable during stamping to avoid blurring. Therefore user should move the stage gently, pausing occasionally to allow stable images. If the tracking is lost for any reason, the tool goes to "recovery mode".

"Panorama tool" at painting mode:




## 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.

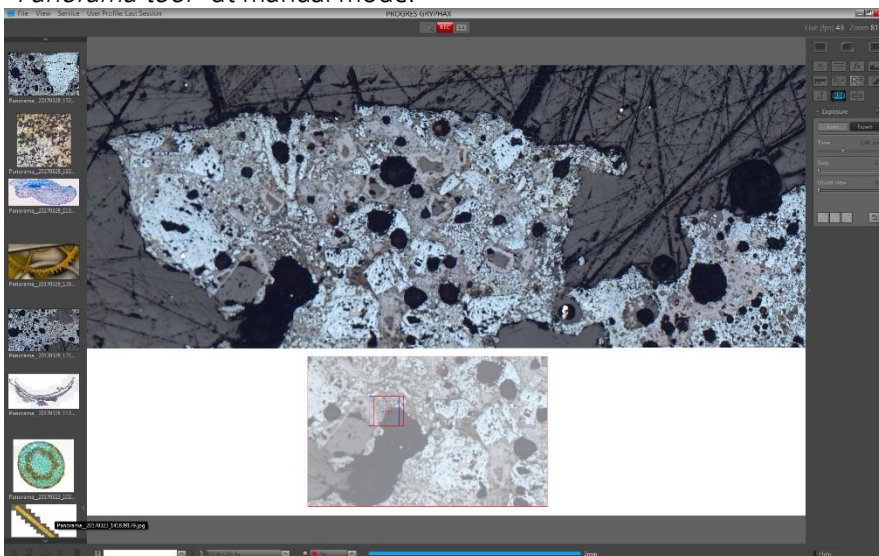
If the “REC”  button is pressed during recovery mode, the tool goes back to “painting mode” from the current position immediately. And you can continue with image combining.

## 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.

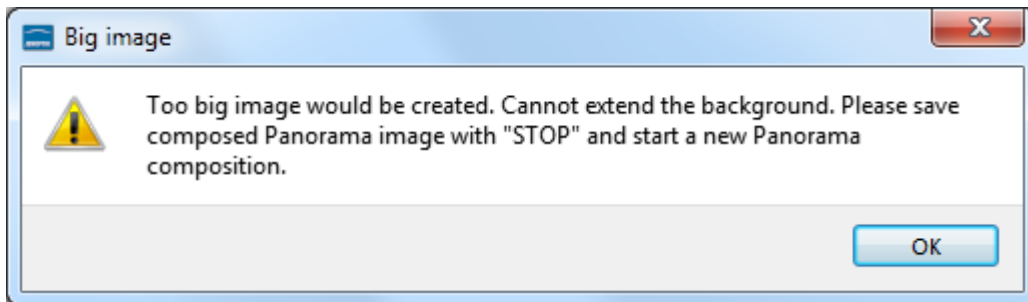
After dropping, the image combining can be continued by pressing the “REC”  button. When user hover the live rectangle on the background area where the match between the background and the image can be found, the matched area is marked by a white border rectangle. If during that, user drops the rectangle, 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.

Learn more about PROGRES GRYPHAX® software and the easy workflows and tools.

Watch our video tutorials.

[VIDEO TUTORIALS](#)

HELPFUL? We appreciate your feedback.

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We looking forward to hearing from you and remain sincerely,

Your PROGRES GRYPHAX® Team