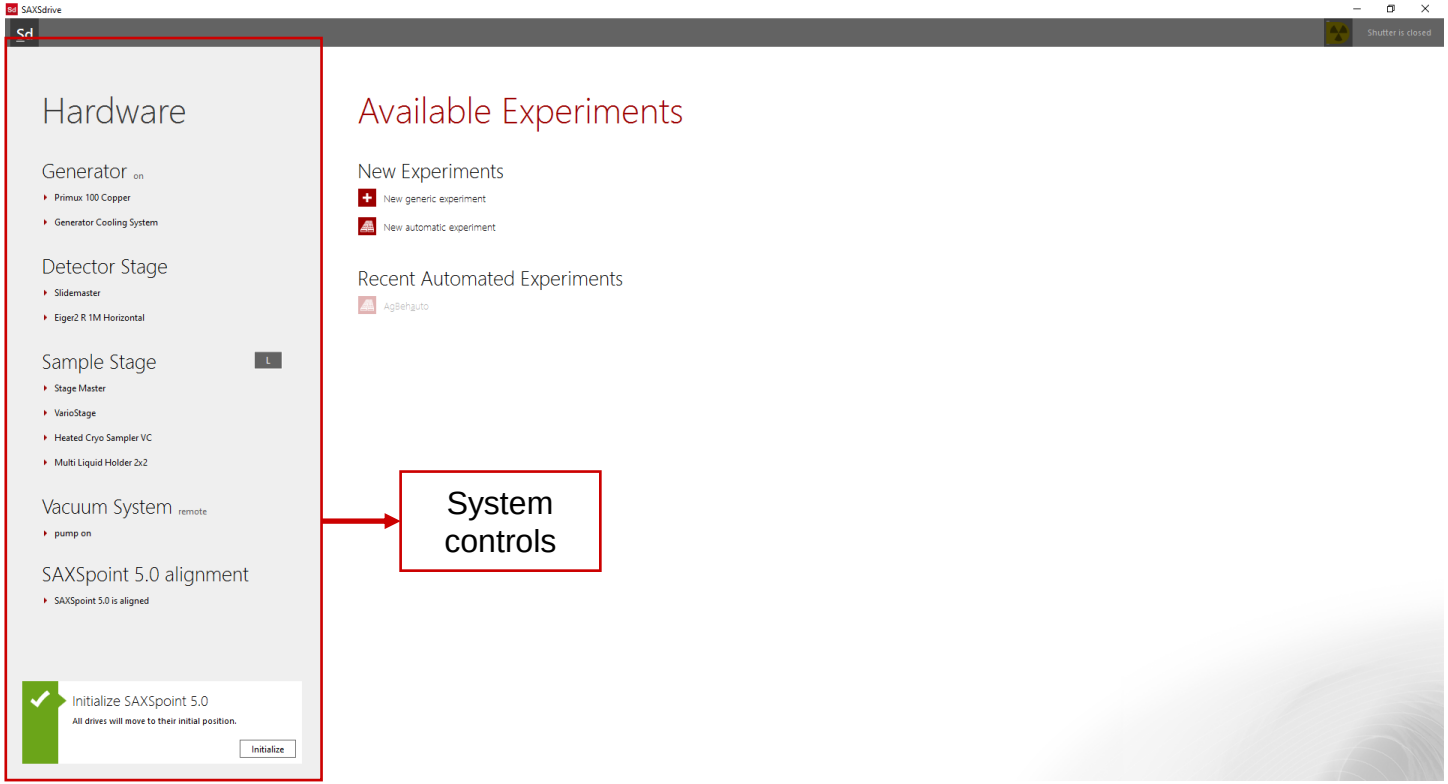
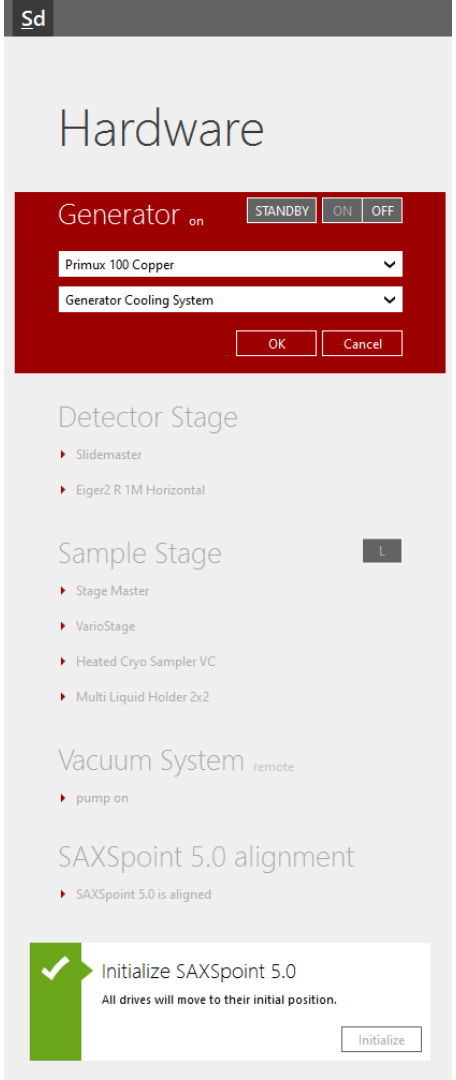
SOP

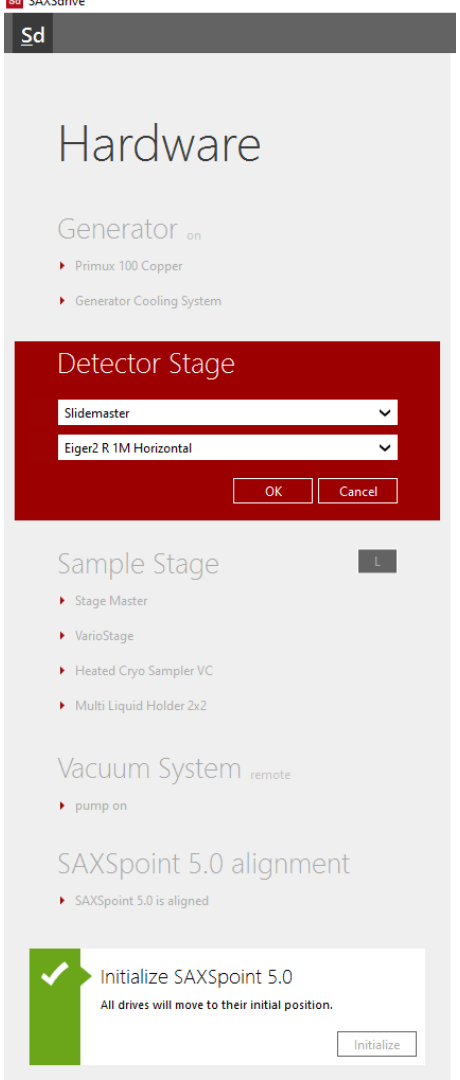


Open SAXSdrive software for system operation.
Image right shows SAXSdrive main window



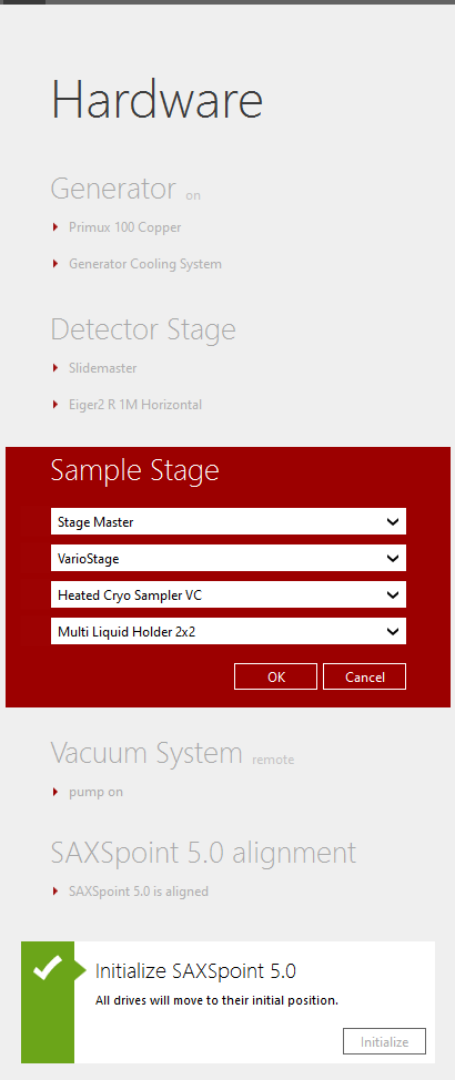
Anton Paar

Click on Generator Tab: Switch On/OFF the X-ray tube from here by clicking: “**ON**”/”**OFF**. Then click **OK**



Anton Paar

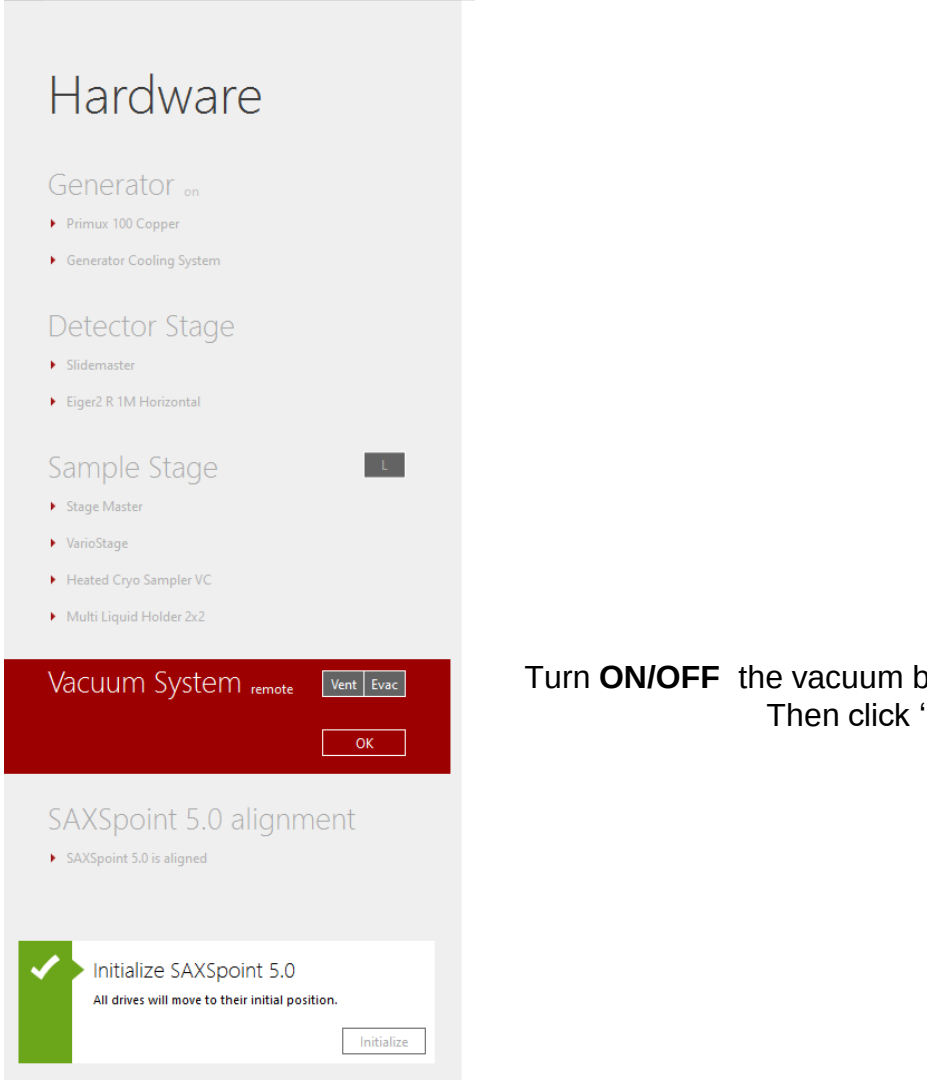
Shows detector mode: Always be in Eiger 1M Horizontal.
Don’t change anything here



Anton Paar

Do the correct stage and holder selection.
Select the correct stage and holder combination as mounted
Click “OK”

Note: Always Turn OFF Stage Controller before Mounting/dismounting the stage



Turn **ON/OFF** the vacuum by clicking **Vent/Evac**
Then click ‘OK’

Hardware

Generator on

- Primux 100 Copper
- Generator Cooling System

Detector Stage

- Slidemaster
- Eiger2 R 1M Horizontal

Sample Stage L

- Stage Master
- VarioStage
- Heated Cryo Sampler VC
- Multi Liquid Holder 2x2

Vacuum System remote

- pump on

SAXSpoint 5.0 alignment

- SAXSpoint 5.0 is aligned

Initialize SAXSpoint 5.0

All drives will move to their initial position.

Initialize

Available Experiments

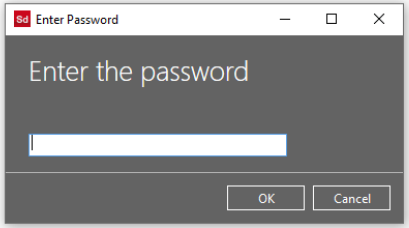
New Experiments

New generic experiment

New automatic experiment

Recent Automated Experiments

AgBehauto

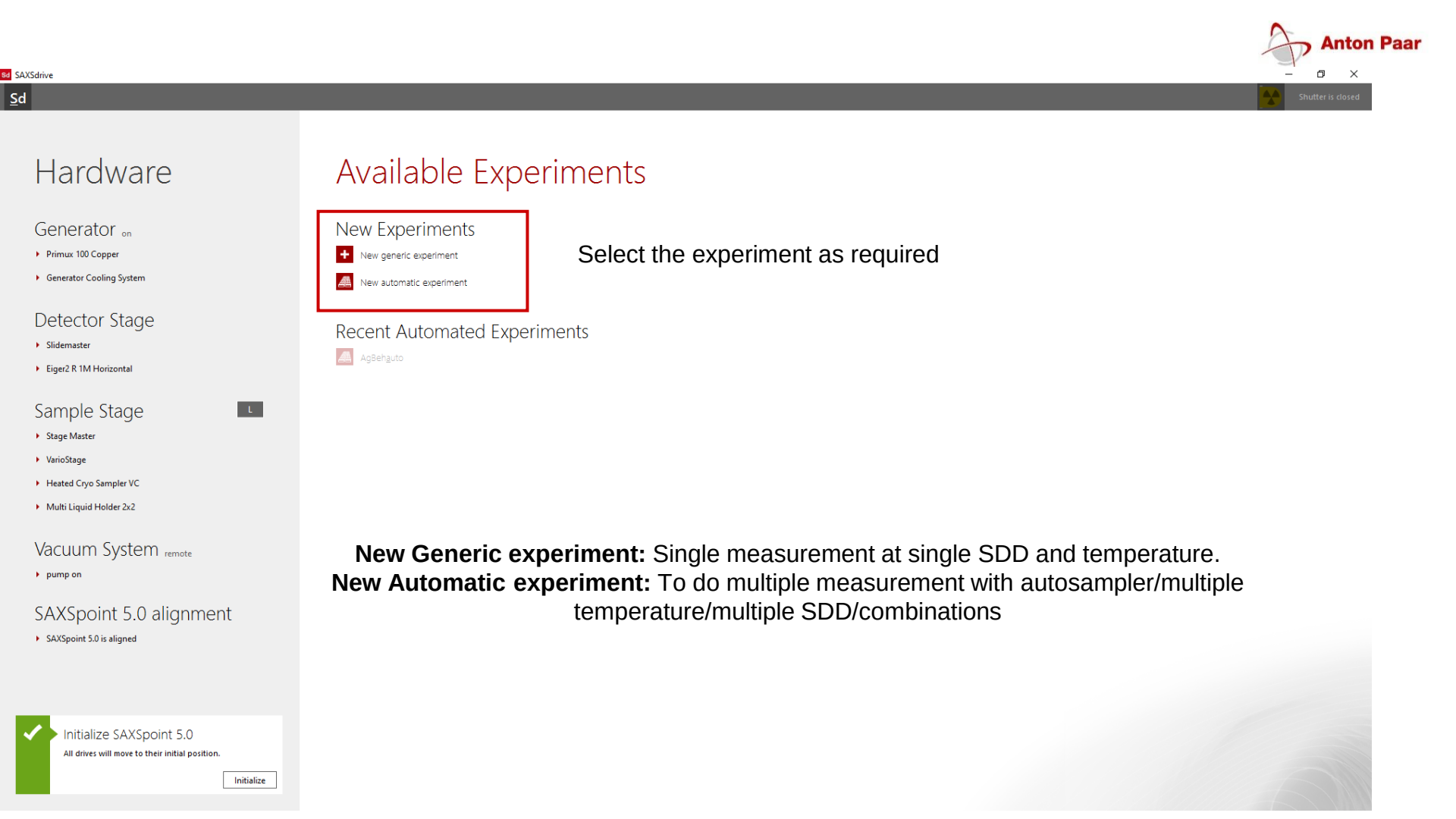


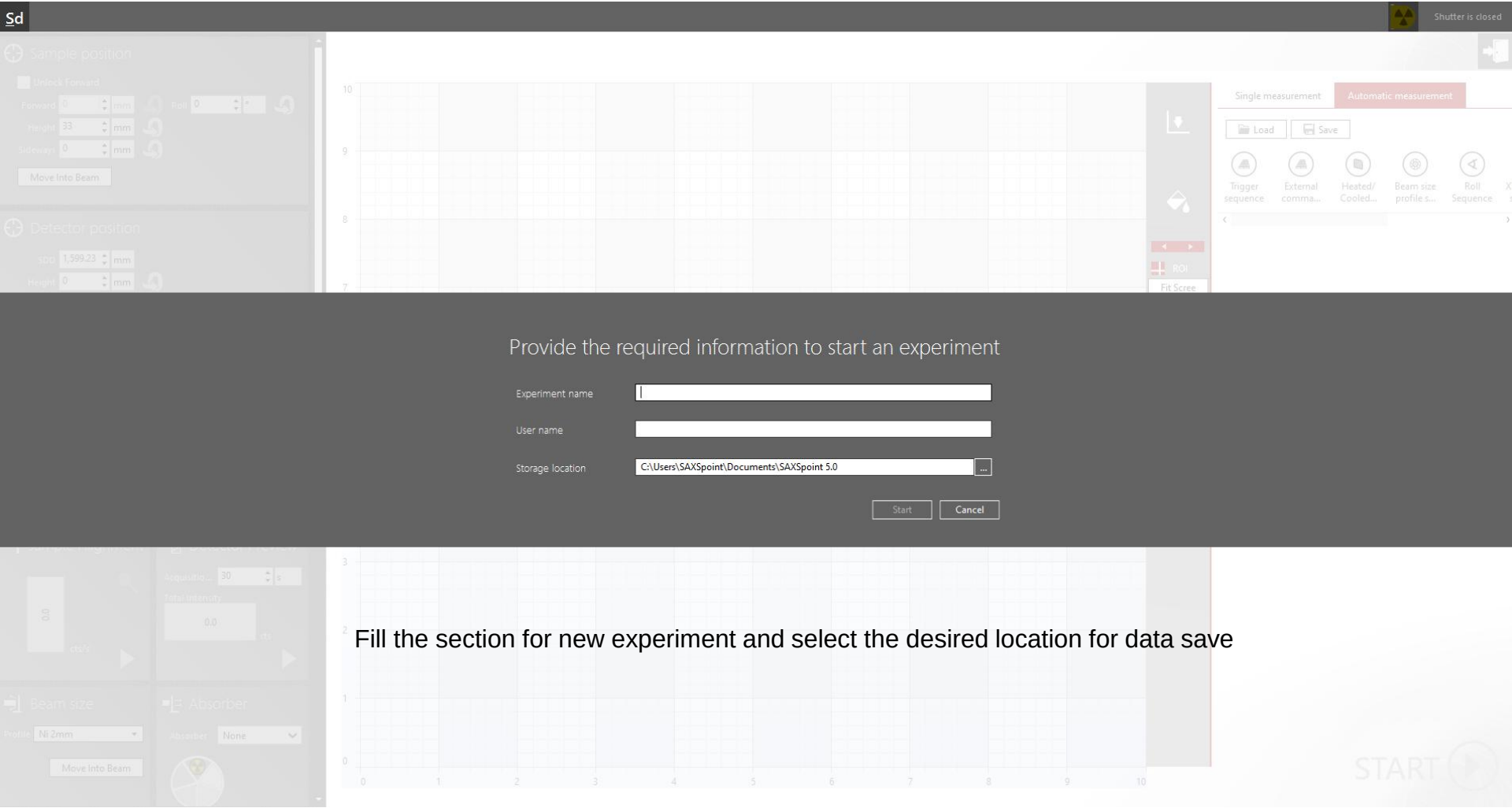
Click “**SAXSpoint 5.0 alignment” given PO-UP** for password to enter alignment wizard.

Password: 2012

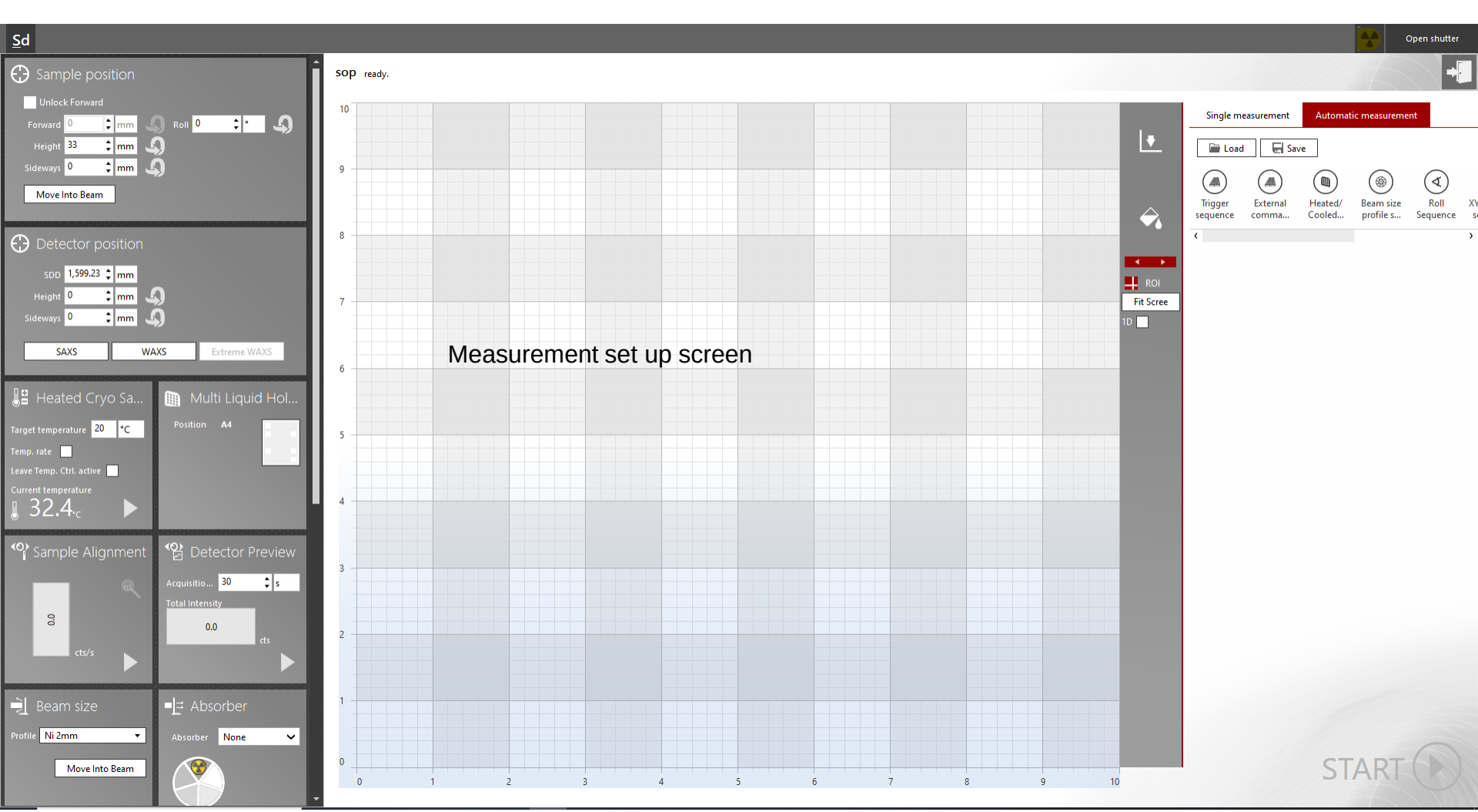
Note: Beamstop alignment will be only need to be done when beam size needs to be changed. Follow beam stop alignment process.

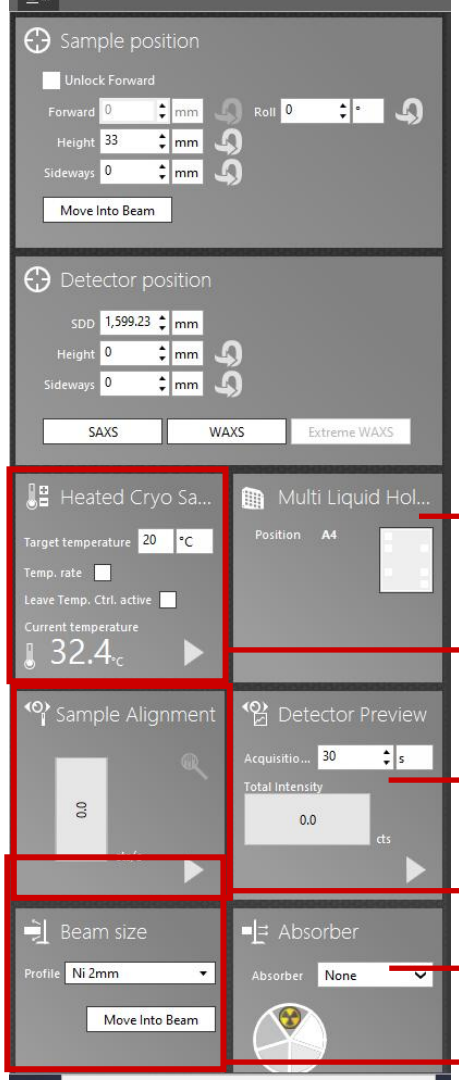
Quick Alignment in general will not required unless screw gauge of mirror optics disturbed.


Anton Paar
SAXSdrive
Sd
Shutter is closed
Hardware
Generator on
Primux 100 Copper
Generator Cooling System
Detector Stage
Slidemaster
Eiger2 R 1M Horizontal
Sample Stage
L
Stage Master
VarioStage
Heated Cryo Sampler VC
Multi Liquid Holder 2x2
Vacuum System remote
pump on
SAXSpoint 5.0 alignment
SAXSpoint 5.0 is aligned
Initialize SAXSpoint 5.0
All drives will move to their initial position.
Initialize
Available Experiments
New Experiments
New generic experiment
New automatic experiment
Recent Automated Experiments
AgBehauto
Select the experiment as required
New Generic experiment: Single measurement at single SDD and temperature.
New Automatic experiment: To do multiple measurement with autosampler/multiple temperature/multiple SDD/combinations



Fill the section for new experiment and select the desired location for data save


Sd
Open shutter
Sample position
Unlock Forward
Forward 0 mm
Roll 0 °
Height 33 mm
Sideways 0 mm
Move Into Beam
Detector position
SDD 1,599.23 mm
Height 0 mm
Sideways 0 mm
SAXS
WAXS
Extreme WAXS
Heated Cryo Sa...
Target temperature 20 °C
Temp. rate
Leave Temp. Ctrl. active
Current temperature
32.4 °C
Multi Liquid Hol...
Position A4
Sample Alignment
0.0
cts/s
Detector Preview
Acquisitio... 30 s
Total Intensity
0.0
cts
Beam size
Profile Ni 2mm
Move Into Beam
Absorber
Absorber None
sop ready.
Measurement set up screen
ROI
Fit Scree
1D
Single measurement
Automatic measurement
Load
Save
Trigger sequence
External comma...
Heated/ Cooled...
Beam size profile s...
Roll Sequence
START



Change sample position in X,Y, Z (forward) direction.
Note: Autosampler don't click "Move into the beam"
AgBeh: Heigh: -20, Sideways: 10

Change detector position and SDD
Click "SAXS"/WAXS" to move to "SAXS/WAXS" position

To select desired sample position in multi-sample holder (A1/A2/…D5)

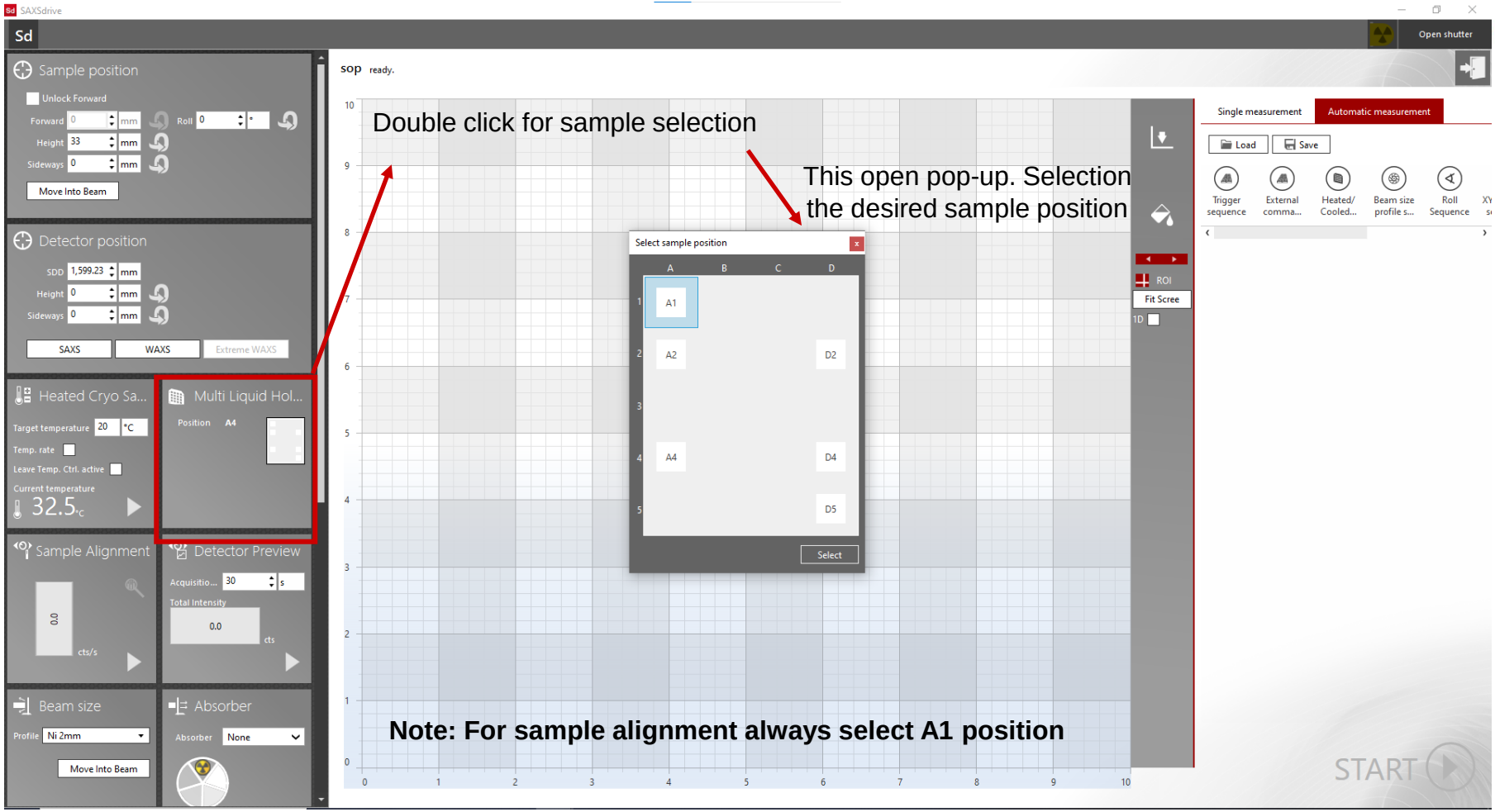
To set sample temperature

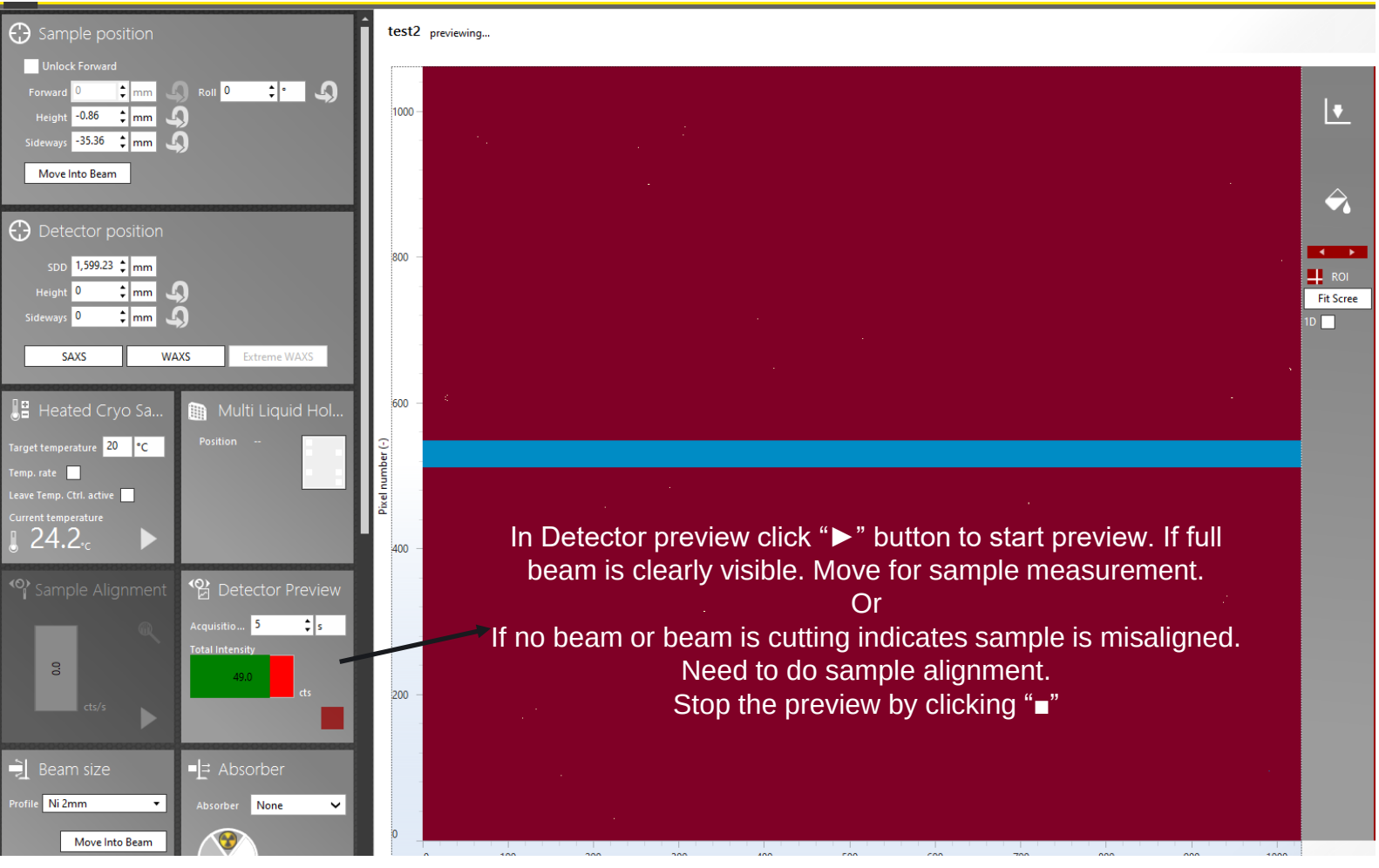
For seeing scattering preview

For doing sample alignment

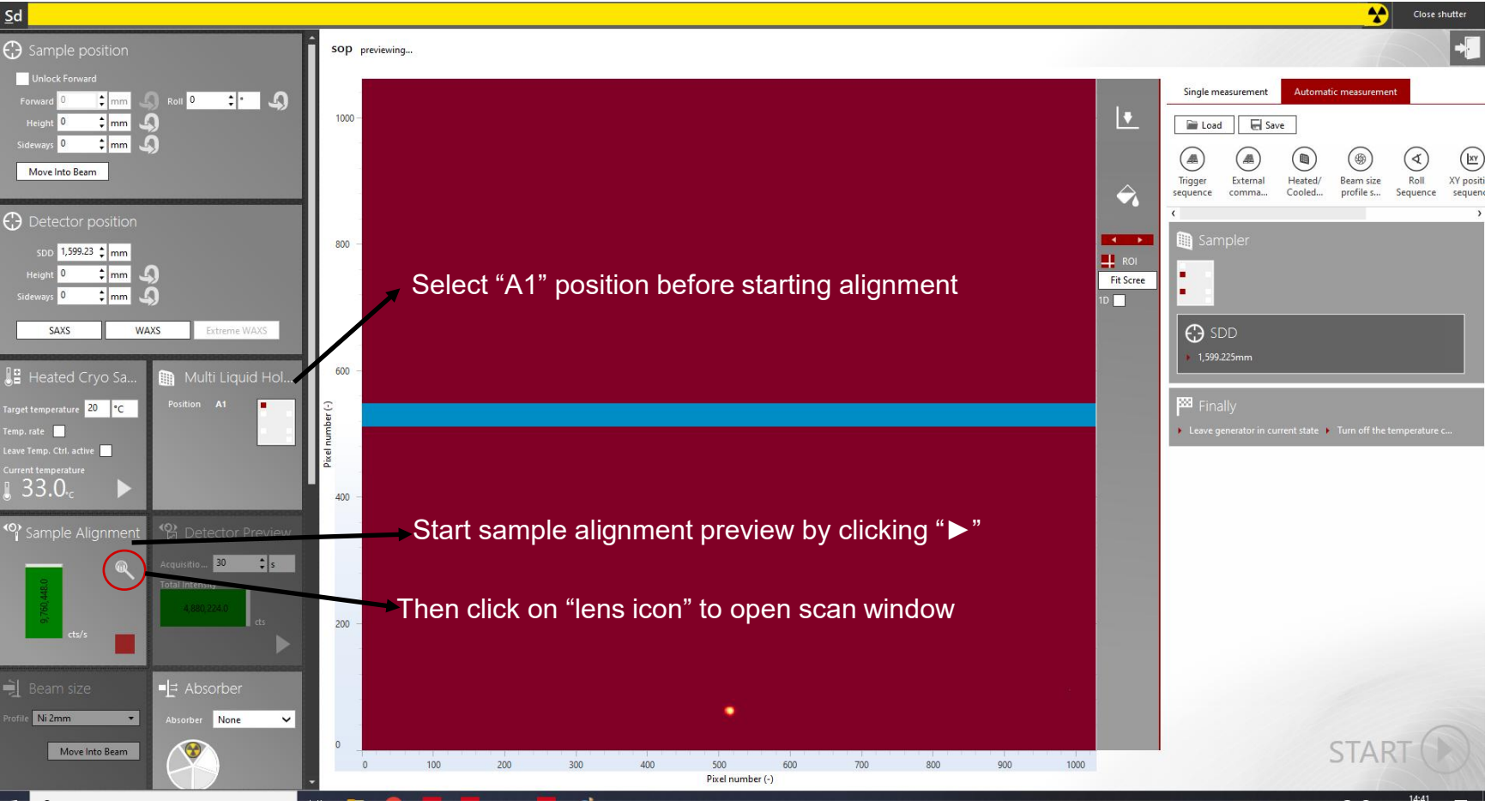
Select absorber

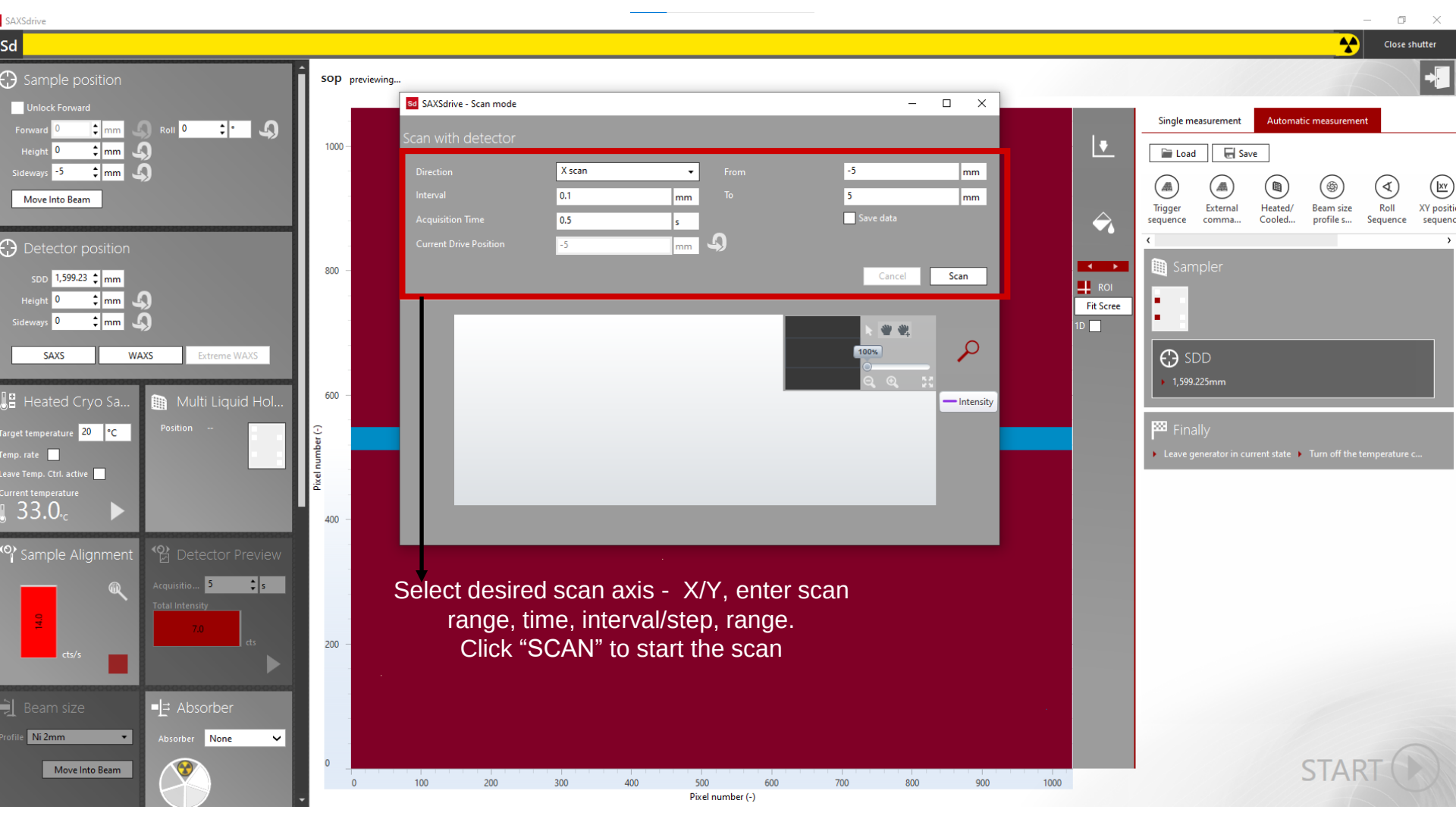
Beam stop/size selection. Click "Move into beam" after selection

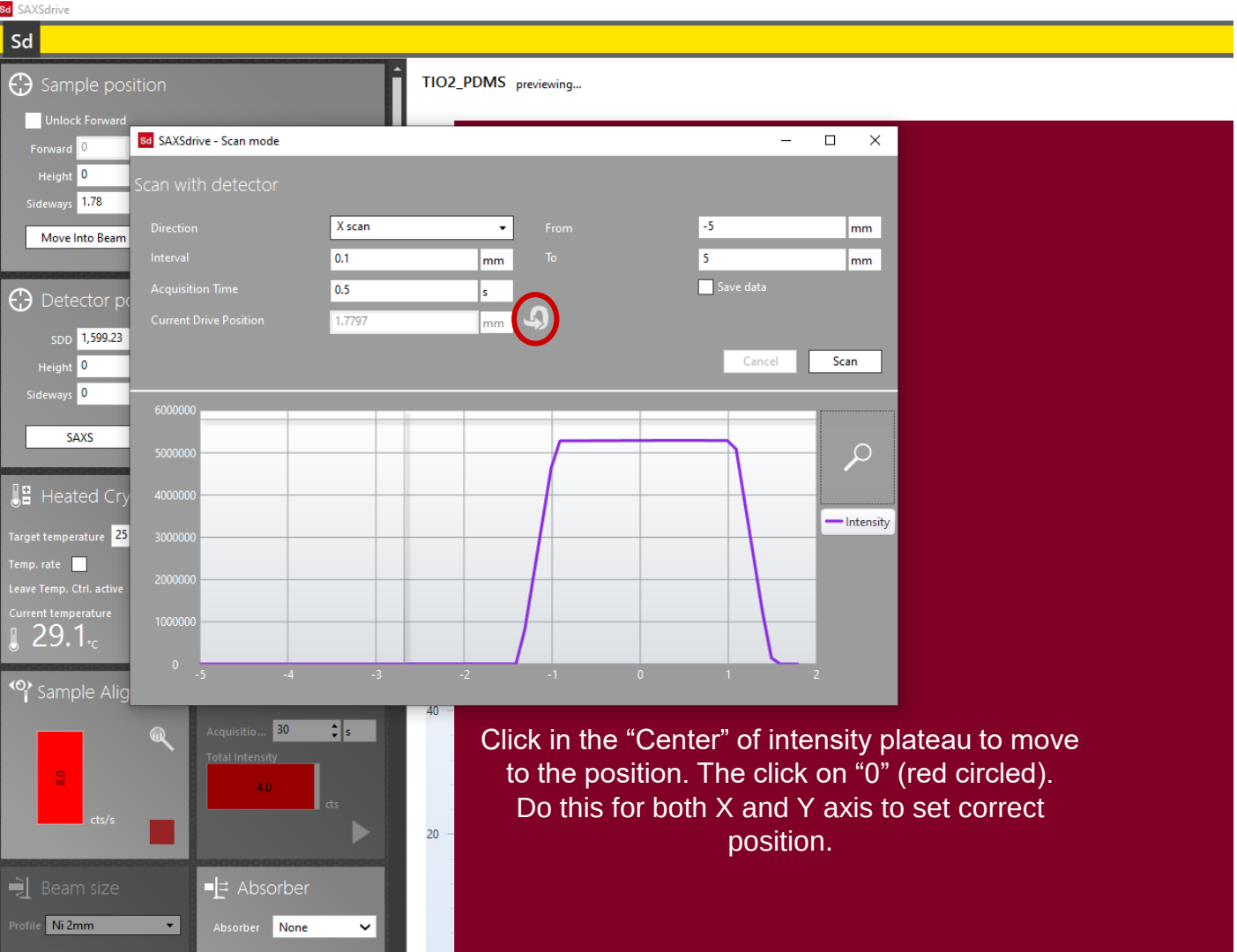

Sd
Open shutter
Paar
Sample position
Unlock Forward
Forward
Roll
Height
Sideways
Move Into Beam
Detector position
SDD
Height
Sideways
SAXS
WAXS
Extreme WAXS
Heated Cryo Sa...
Target temperature
Temp. rate
Leave Temp. Ctrl. active
Current temperature
32.5
Multi Liquid Hol...
Position
A4
Sample Alignment
Detector Preview
Acquisitio...
Total Intensity
Beam size
Profile
Ni 2mm
Move Into Beam
Absorber
None
sop
ready.
Double click for sample selection
This open pop-up. Selection the desired sample position
Select sample position
A
B
C
D
A1
A2
D2
A4
D4
D5
Select
Single measurement
Automatic measurement
Load
Save
Trigger sequence
External comma...
Heated/ Cooled...
Beam size profile s...
Roll Sequence
ROI
Fit Scree
1D
START
Note: For sample alignment always select A1 position


Sample position
Unlock Forward
Forward 0 mm
Roll 0 °
Height -0.86 mm
Sideways -35.36 mm
Move Into Beam
Detector position
SDD 1,599.23 mm
Height 0 mm
Sideways 0 mm
SAXS
WAXS
Extreme WAXS
Heated Cryo Sa...
Target temperature 20 °C
Temp. rate
Leave Temp. Ctrl. active
Current temperature
24.2 °C
Multi Liquid Hol...
Position --
Sample Alignment
0.0
cts/s
Detector Preview
Acquisitio... 5 s
Total Intensity
49.0
cts
Beam size
Profile Ni 2mm
Move Into Beam
Absorber
Absorber None
test2 previewing...
Pixel number (-)
1000
800
600
400
200
0
ROI
Fit Scree
1D
In Detector preview click “►” button to start preview. If full beam is clearly visible. Move for sample measurement.
Or
If no beam or beam is cutting indicates sample is misaligned. Need to do sample alignment.
Stop the preview by clicking “■”

Sample Alignment

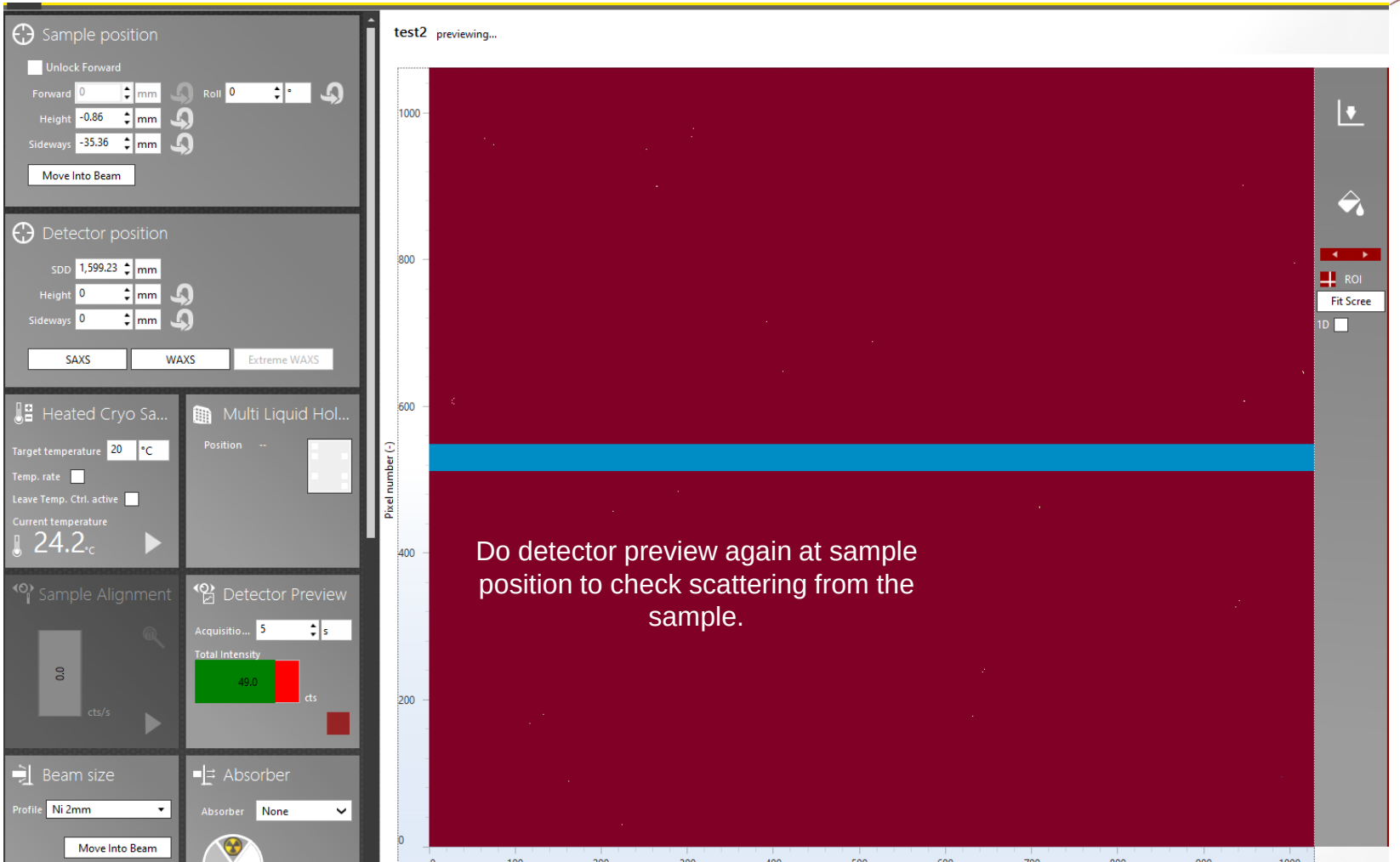


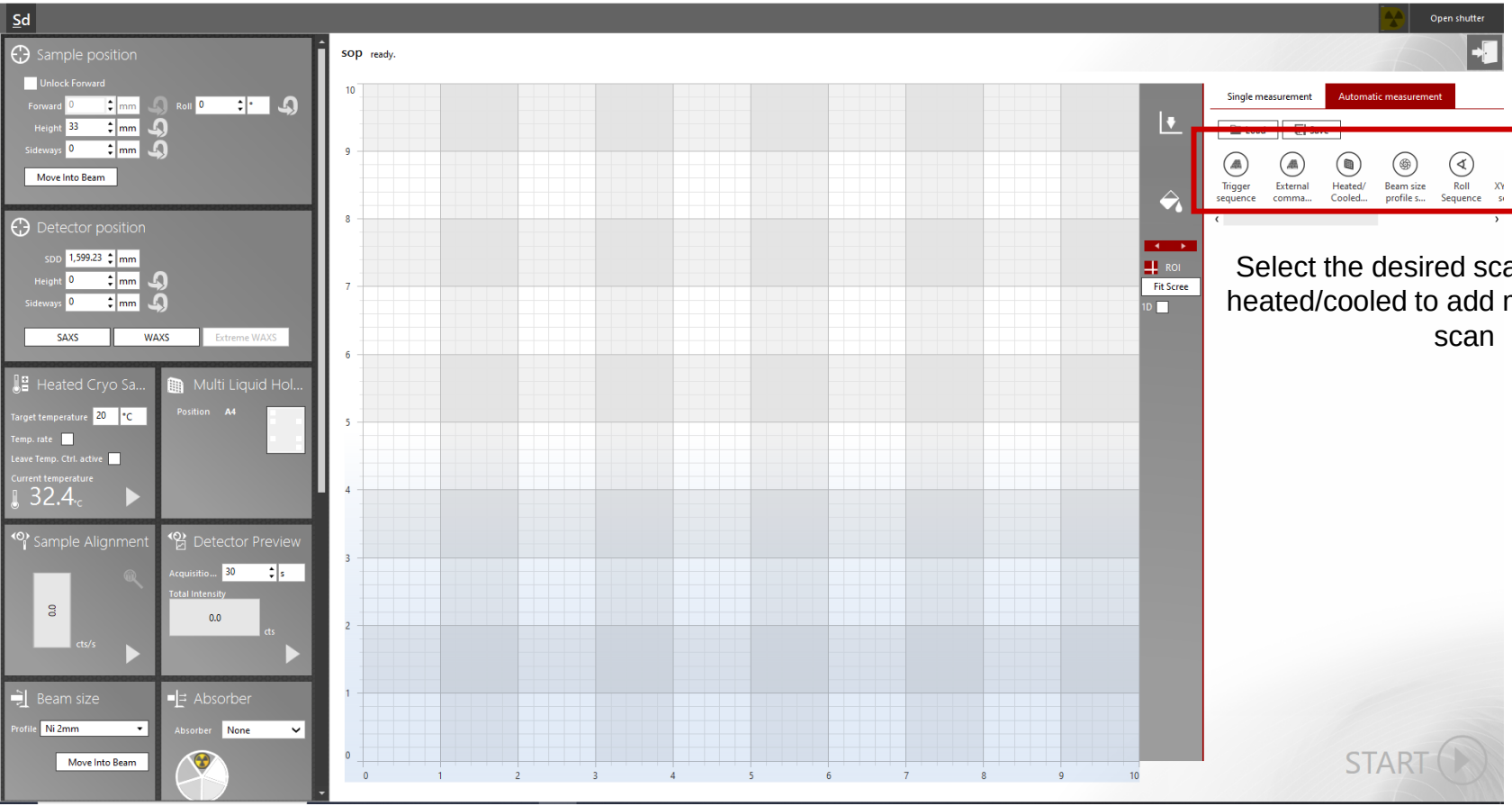

SAXSdrive
Close shutter
Sample position
Unlock Forward
Forward
Roll
Height
Sideways
Move Into Beam
Detector position
SDD 1,599.23
Height
Sideways
SAXS
WAXS
Extreme WAXS
Heated Cryo Sa...
Target temperature 20 °C
Temp. rate
Leave Temp. Ctrl. active
Current temperature
33.0
Multi Liquid Hol...
Position
Sample Alignment
14.0
cts/s
Detector Preview
Acquisitio... 5 s
Total Intensity
7.0
cts
Beam size
Profile Ni 2mm
Move Into Beam
Absorber
Absorber None
sop previewing...
SAXSdrive - Scan mode
Scan with detector
Direction X scan
Interval 0.1 mm
Acquisition Time 0.5 s
Current Drive Position -5 mm
From -5 mm
To 5 mm
Save data
Cancel
Scan
100%
Intensity
Pixel number (-)
Pixel number (-)
Select desired scan axis - X/Y, enter scan range, time, interval/step, range.
Click “SCAN” to start the scan
ROI
Fit Scree
1D
Single measurement
Automatic measurement
Load
Save
Trigger sequence
External comma...
Heated/ Cooled...
Beam size profile s...
Roll Sequence
XY positio sequenc
Sampler
SDD
1,599.225mm
Finally
Leave generator in current state
Turn off the temperature c...
START



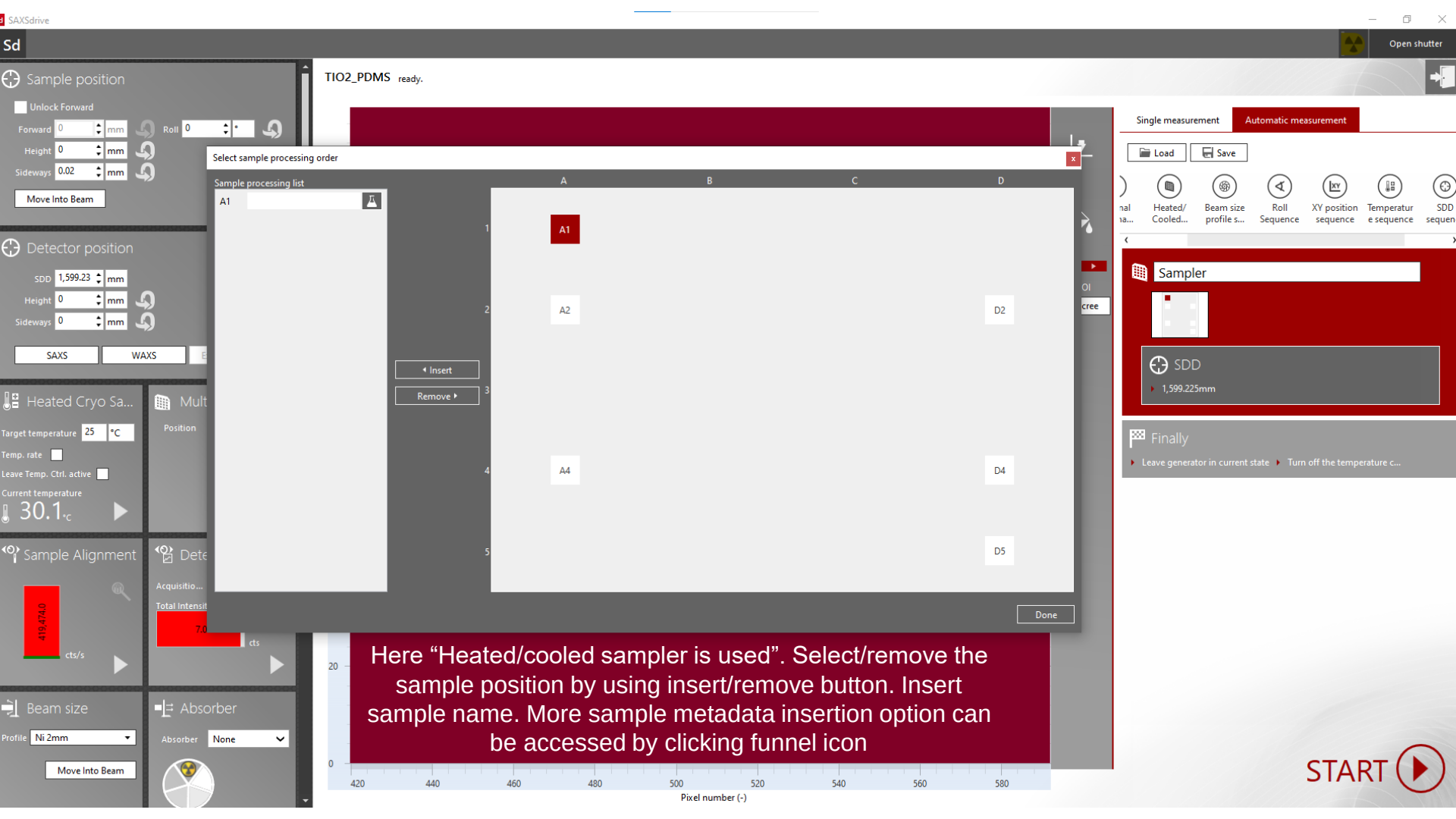
Click in the “Center” of intensity plateau to move to the position. The click on “0” (red circled). Do this for both X and Y axis to set correct position.

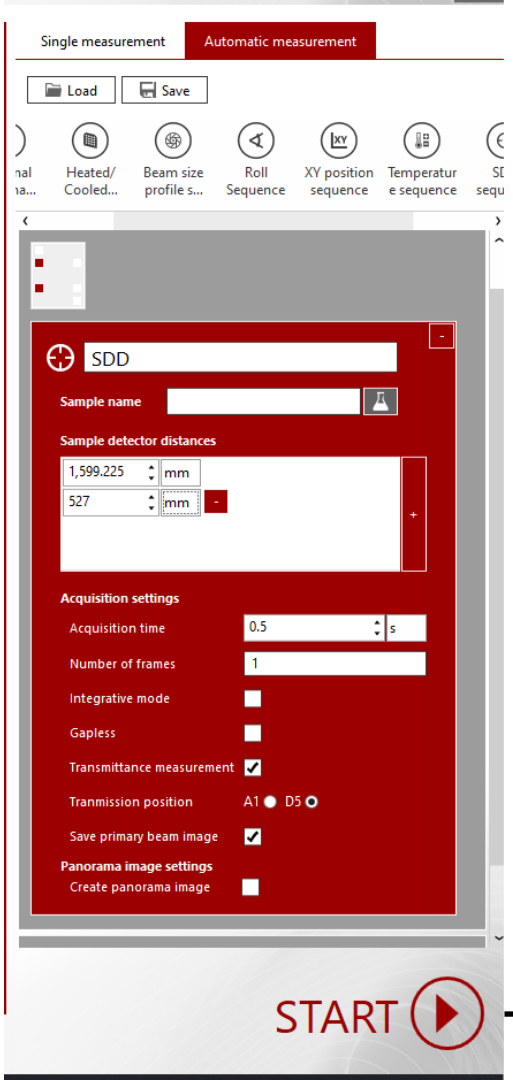
Note: Sample position zero should be done for A1 sample position only.


Sample position
Unlock Forward
Forward 0 mm
Roll 0 °
Height -0.86 mm
Sideways -35.36 mm
Move Into Beam
Detector position
SDD 1,599.23 mm
Height 0 mm
Sideways 0 mm
SAXS
WAXS
Extreme WAXS
Heated Cryo Sa...
Target temperature 20 °C
Temp. rate
Leave Temp. Ctrl. active
Current temperature
24.2 °C
Multi Liquid Hol...
Position --
Sample Alignment
0.0
cts/s
Detector Preview
Acquisitio... 5 s
Total Intensity
49.0
cts
Beam size
Profile Ni 2mm
Move Into Beam
Absorber
Absorber None
test2 previewing...
Pixel number (-)
1000
800
600
400
200
0
Do detector preview again at sample position to check scattering from the sample.
ROI
Fit Scree
1D



Select the desired scan for example heated/cooled to add multiple sample scan


SAXSdrive
Open shutter
Sample position
Unlock Forward
Forward
Roll
Height
Sideways
Move Into Beam
TIO2_PDMS ready.
Single measurement
Automatic measurement
Load
Save
Heated/ Cooled...
Beam size profile s...
Roll Sequence
XY position sequence
Temperatur e sequence
SDD sequen
Sampler
SDD
1,599.225mm
Finally
Leave generator in current state
Turn off the temperature c...
Select sample processing order
Sample processing list
A1
A
B
C
D
A1
A2
A4
D2
D4
D5
Insert
Remove
Done
Detector position
SDD 1,599.23 mm
Height 0 mm
Sideways 0 mm
SAXS
WAXS
Heated Cryo Sa...
Target temperature 25 °C
Temp. rate
Leave Temp. Ctrl. active
Current temperature
30.1 °C
Mult
Position
Sample Alignment
419,474.0
cts/s
Dete
Acquisitio...
Total Intensit
7.0
cts
Beam size
Profile Ni 2mm
Move Into Beam
Absorber
Absorber None
Here “Heated/cooled sampler is used”. Select/remove the sample position by using insert/remove button. Insert sample name. More sample metadata insertion option can be accessed by clicking funnel icon
Pixel number (-)
START



After sample selection. Click parameter. In this example it is SDD. Insert desired SDD values. One can do multiple SDD scan one go using this.

Insert other parameters such as acquisition time, number of frames etc.

Insert more measurement options for doing all type of measurements in one measurement plan. Note: measurement tree follows from top to down so correct sequence should be inserted.

→ Click “**START**” to begin the measurement