

Sample Probe Vertical Height Adjustment

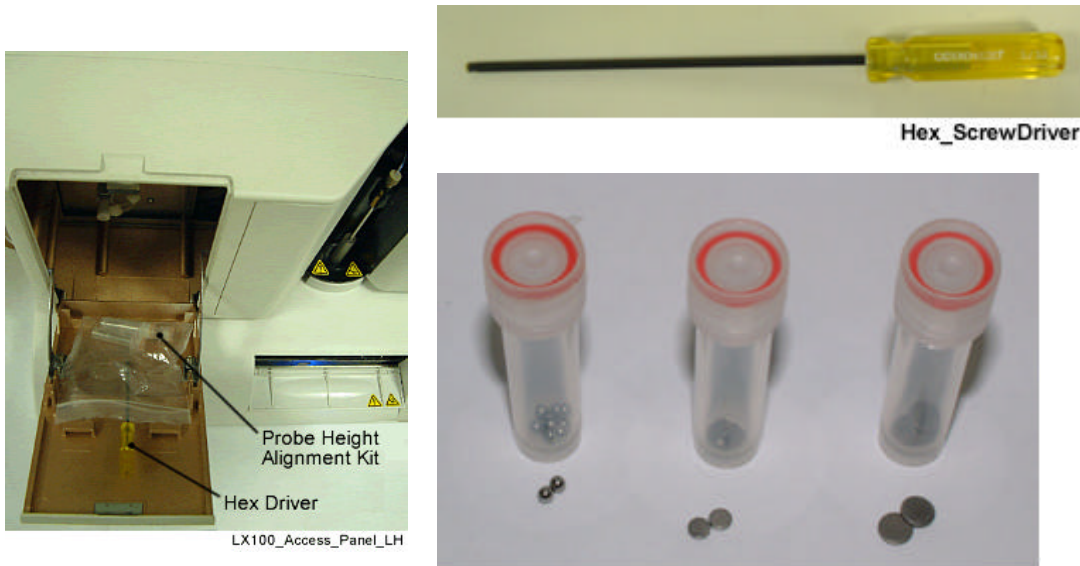
The height of the STarSystem Sample Probe can be adjusted to set precisely how far the probe goes into the well when sampling.

This height is preset when the Instrument is shipped. However 96 well plates can vary in size and well depth from different manufacturers and the probe height should be checked regularly to avoid any probe or plate damage, especially if the Instrument is moved or used by different Users.

The Probe height is critical to ensure correct Sample Acquisition.

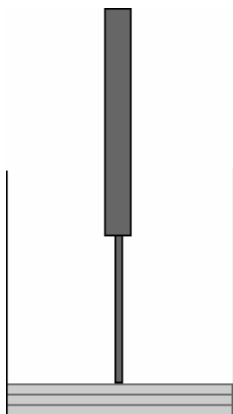
The probe tip must not touch the bottom of the well when fully down but must be far enough down inside each well to ensure correct sample aspiration to the required volume without aspirating air. The following items are supplied with the STarSystem and are located behind the left-most access panel on the front of the LX Detector:

A 3/32 inch hex-key (red or yellow handled) - (only with LX100 systems).



Probe Height Adjustment Kit - used as a probe height spacer and removed after adjustment.

Use one sphere to adjust the probe height for round bottom or V-bottom wells. For flat bottomed plates or Millipore filter-bottomed microtiter plates three disks should be used to adjust the sample probe height.



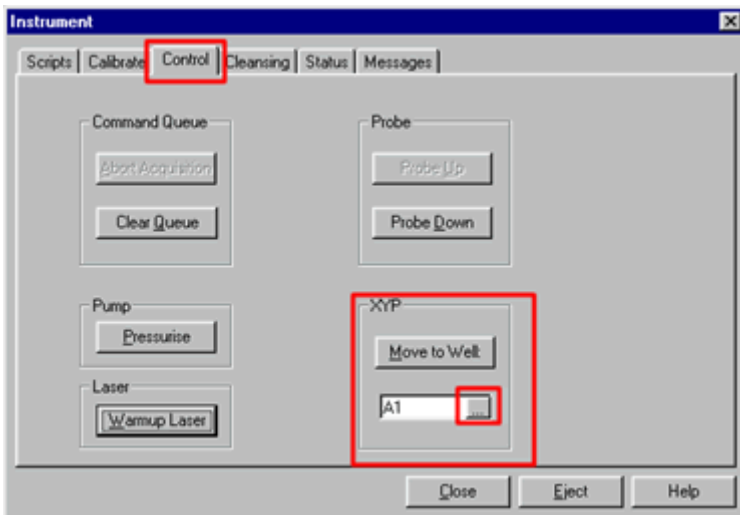
Note: using the probe height alignment disks or metal sphere to adjust the vertical distance between the tip of the sample probe and the bottom of the microtiter plate well will ensure that a consistent and reproducible probe height setting can be achieved. Using three disks to adjust probe height will result in the creation of a “dead” volume of approximately 30µl that can never be accessed by the sample probe. Users should ensure therefore that there is at least 30µl more volume in the well than the intended sample volume that is to be removed from the well during sample acquisition.

To adjust the sample probe height (using the XYP and STarStation Software):

1. Display the STarStation Instrument Controls by selecting the Instrument Controls option from the **View** Menu, using the CTRL + I shortcut key sequence or clicking the Instrument Controls icon.




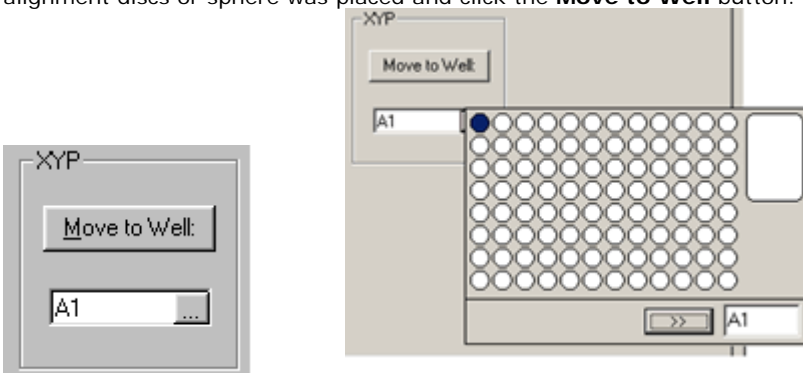
2. Select the Control Tab and Click the Eject button.



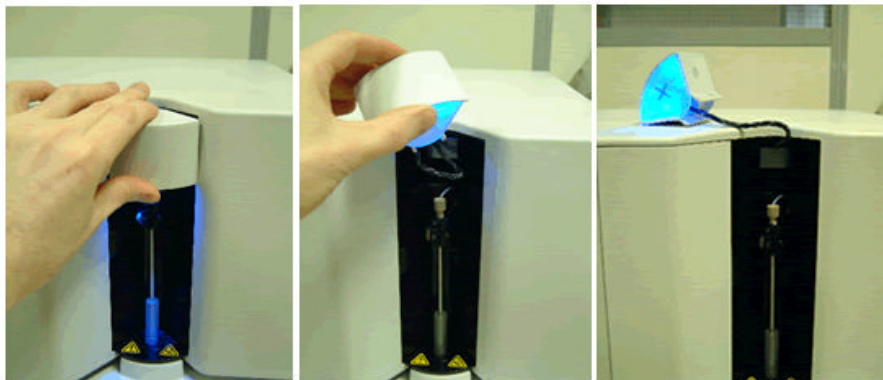
3. Place the appropriate spacer in a chosen well on the Plate, - e.g. a well in row H closest to the end of the plate and which can readily be observed when opening the door on the XY platform plate holder.
 - One sphere for round bottomed plate.
 - Three disks for flat bottomed well.
4. Replace the Plate on the XY Platform plate holder and click the **Retract** button.



5. Click the  (ellipsis) button in the **XYP** window of the Control Tab and select the well in which the alignment discs or sphere was placed and click the **Move to Well** button.

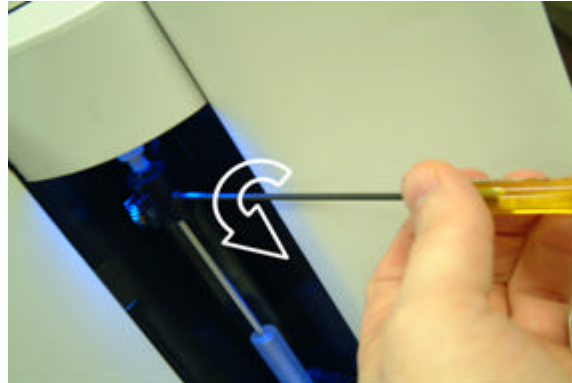


6. It may be necessary to remove the light housing located above the Sample probe to allow access to the Sample Probe assembly.



Removing_The_LX100_Light_Housing

7. Loosen the Hex Lock screw on the probe arm with the Hex key (LX100 Systems) or loosen the adjustment screw (LX200 systems).



8. Temporarily hold the door of the XY platform open.

CAUTION, do not place hands inside the XYP, beyond the entrance to the XYP plate carriage and keep face well away from the XYP entrance also.

9. On the Instrument Controls dialog, click the **Probe Down** button.

10. When in the down position, the probe tip should be just resting on the adjustment spacer with the probe arm in its fully down position. If the vertical position of the sample probe tip, when it is in the "down" position, is too low relative to the microplate the sample probe will push the plate and the microplate tray. Use the thumb wheel (LX100 systems) or move the probe in the adjustment slider (LX200 systems) to adjust the probe sample tip up or down with respect to the sample arm.

11. Tighten the locking screw with the hex-key.

12. Operate the **Probe Up** and **Probe Down** buttons several times to check the alignment within the probe guide and that the probe height set is correct. Ensure that the plate does not bounce or plunge by looking through the XY plate door. Ensure smooth operation of the probe within the probe guide.

13. Click the **Probe Up** button and then click on the **Eject** button to remove the Plate.

14. Remove the Spacers from the Plate Well and re-stow these and the Hex key.