Lerdge-iX Calibration

Content

1. Adjust the engagement of the pulleys and the profiles

The assembly manual has already mentioned how to adjust the engagement of the pulley and the profile. It is better to check the engagement again before starting the real printing,

Pinch the sliders of X and Y axes with your hands in turn, shake the slider left and right in the movement direction of the slider, feel whether the slider still shakes relative to the profile, and adjust the eccentric nut on the slider according to the actual situation to eliminate the shaking. Make sure that the slider moves along the profile without shaking.

Note that there is a red marking line on the eccentric nut, which marks the maximum eccentric position. Rotate the eccentric nut to make the red line close to the profile side, which means the engagement of the pulleys and the profile becomes tighter; rotate the red line to the outside, which means the engagement becomes loose.

2. Adjust the tension of the blets

Check whether the belts of the X and Y axes are properly tight.

The Lerdge iX 3D printer drives the X-axis and Y-axis sliders to move through the belt. The tightness of the belt directly determines the accuracy of sliders movement. The too loose belt can cause the reversing resonance of the slider and fail to transmit precise motion, resulting in the strange texture or the loss of details on the surface of the print model. The too tight belt will increase the reversing resistance of motor, leading to reverse step loss and the wrong layer of print model. So, Lerdge iX has been designed the tension adjustment knobs for both X and Y axes belts: **Rotating the knob clockwise can tighten the belt, and rotating the knob counterclockwise can loosen the belt.**

Firstly, make sure that the X and Y axis motors are unlocked and can rotate freely when adjusting the belt. Then move respectively the X-axis slider back and forth by hand to observe the tightness of the connection between the belt and the sliders. At the same time, rotate the X-axis adjustment knob, until the belt is just not deformed well when the X-axis slider is reversing during the movement. And then it can be adjusted a little tighter on this basis, about one-tenth more of circle. Adjust the Y-axis belt tightness in the same way as above.

3. Adjust the parallelism of the X-axis cantilever and the print platform

Manually rotate the lead screw and move the X-axis cantilever, so that the nozzle on the X-axis cantilever is located 1~2mm above the printing platform. Then manually move the print head from the leftmost to the rightmost of the X-axis cantilever. At the same time, observe the change of the distance between the nozzle and the printing platform during the movement, then judge whether the X-axis cantilever is drooping or upturned relative to the printing platform in the X-axis direction.

Loosen the bolts connecting the X-axis profile and the Z-axis slider plate, and then adjust the X-axis

profile according to the above judgment, until the distance between the nozzle and the printing platform at any position is roughly the same when the print head moves in the X-axis direction. Here no precise adjustment is required, just adjust to be roughly the same. Then tighten the bolts connecting the X-axis profile and the Z-axis slider plate. And check the engagement of the Z-axis slider and the profile again (refer to Chapter 1).

4. Adjust the verticality and concentricity of the Z-axis lead screw

First, loosen the 4 fixing bolts of the Z-axis motor (just loosen it, not take it out!), so that the Z-axis motor can move slightly forward, back, left and right on the motor base. Manually rotate the lead screw, move the X-axis cantilever down to the bottom position (the nozzle basically touches the printing platform). At this time, refer to the Z-axis profile and observe whether the upper half of the lead screw is in the middle of the profile. Adjust the Z-axis motor so that the entire lead screw appears to be in the middle of the Z-axis profile and parallel to the edge of the profile. Then observe from the other side, make the lead screw parallel to the Z-axis profile surface.

At this time, keep the position of the motor and the lead screw, and then tighten the two screws of the Z-axis motor. Manually rotate the lead screw, lift the X-axis cantilever, and feel whether the rotational resistance of the lead screw is uniform during this process. If the resistance is uniform, lock the other two screws of the Z-axis motor close to the profile after raising the X-axis cantilever to a certain height. If the resistance is uneven, and it is tight in some positions and loose in other positions when the X-axis cantilever is lifted, which may be caused by the tilt of the lead screw. Repeat the above adjustment until the resistance of the lead screw rotation is uniform when the X-axis cantilever approaches the printing platform from above.

Note that when locking the Z-axis motor, do not tighten the screws too hard, which may deform the mica gasket and cause the Z-axis motor to move. It is strongly recommended to apply some grease to the lead screw.