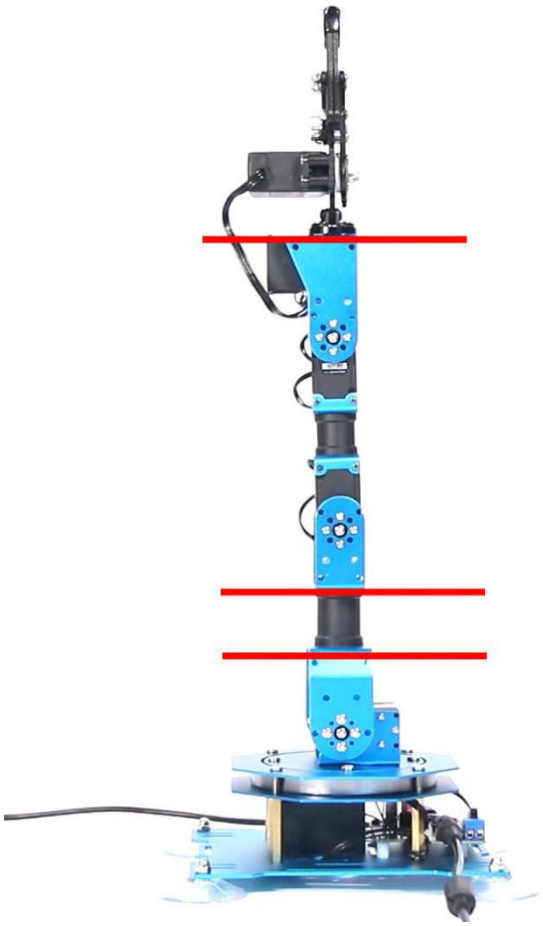
Lesson 5 Adjust Deviation

1. Whether the deviation needs to be adjusted

The robotic arm may have a small deviation after assembly. Please check it through the following steps to decided whether to adjust the deviation.

Step 1: Click “5.Appendix” to install PC software and turn on it.

Step 2: Click “Reset Servo” button on the PC software. If the robotic arm is facing upwards and the servo main shaft brackets are parallel to each other, there is no need to adjust the deviation. As show below:



For example, you need to adjust the deviation if the stance as below.

2. Why is there a deviation

The deviation usually cause in the following situations:

1) When the servo is in the middle position, the servo main shaft angle is rotated when the servo horn is installed, resulting in an angular deviation in the initial position.

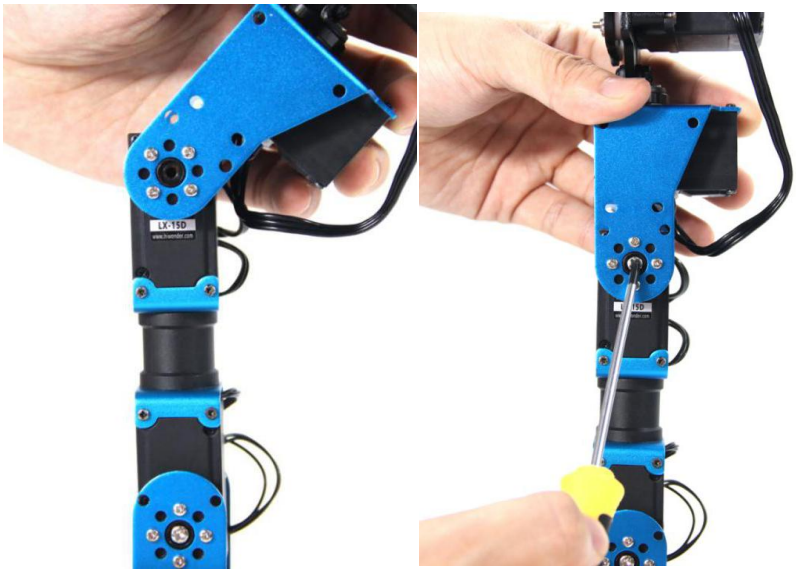
(The default servo angle is the middle position)

2) When the servo is installed with the servo horn, the main shaft angle is not rotated, but there is a small deviation in the direction or angle of the fixed to the bracket, resulting in a slight deviation.

Note that if the deviation is not adjusted, it maybe cause the robotic arm's movement to be restricted, which will affect some sports effects.

In addition, the deviation value is within 100 (within an angle of 30°), which belongs to the normal adjustable range. If the deviation is large, exceeding 100,

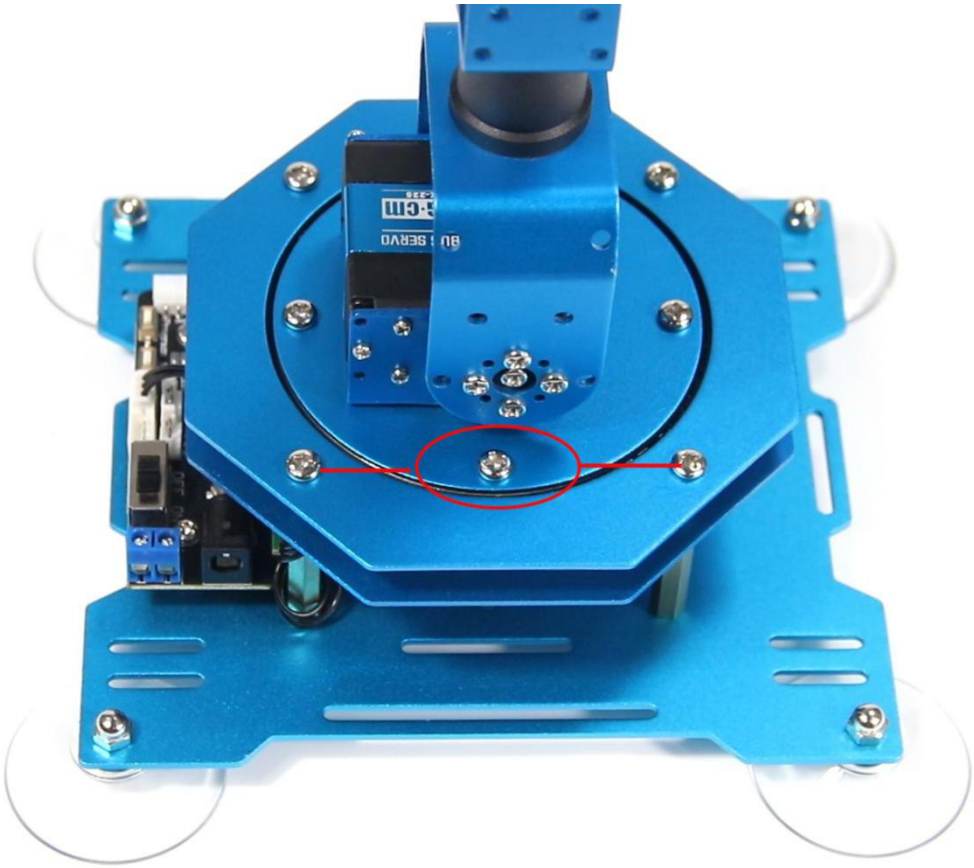
it will not be able to be adjusted by software. You need to remove the main shaft screw of the servo with large deviation, rotate it to the vertical attitude and install it again.



3.The standard of deviation adjustment

1) After the robotic arm is powered on and reset, the servo main shaft bracket must be parallel, that is, the screws in the vertical direction of the bracket where the servo is located should be in the same straight line.

2)When the robotic arm is placed shown in the figure below, close to the No.5 servo main shaft's inner ring screw should be kept in the middle of the two adjacent screws in outer ring.



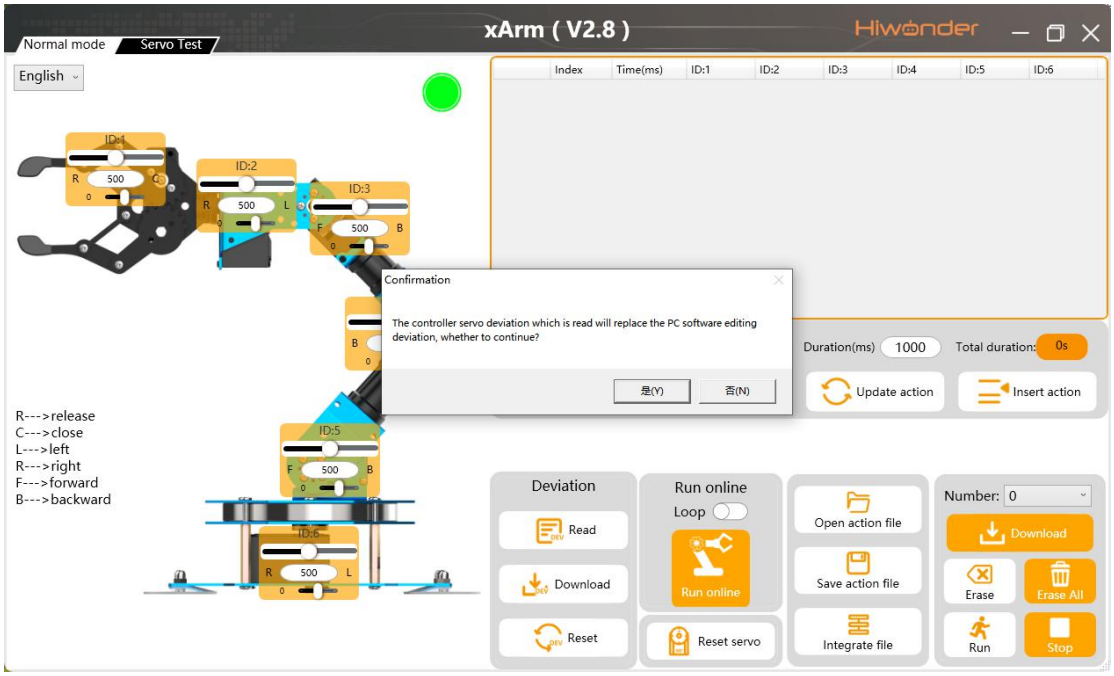
4. How to adjust

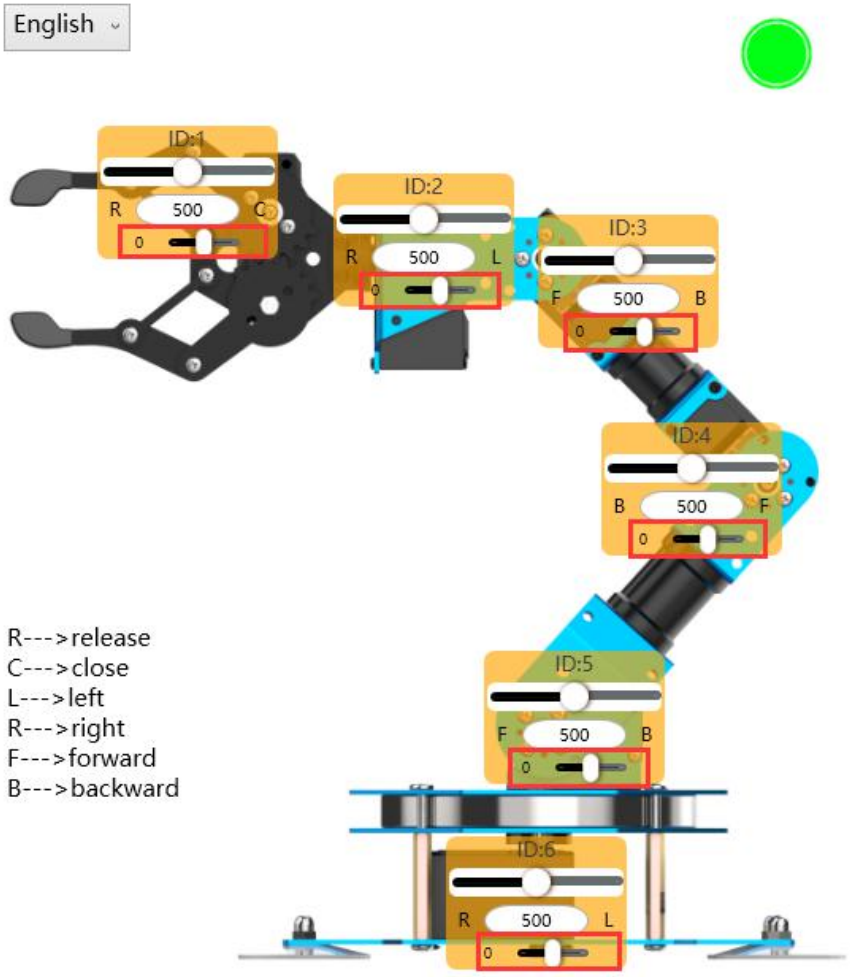
4.1 Small deviation adjustment

Small deviation means that the deviation value is less than 100 (the deviation angle is less than 30°). This lesson take the following picture as an example to adjust ("Servo Reset" operation has been performed)

Step1: Observe the attitude of the servo at each position of the robotic arm. It can be seen that only the No.3 servo deviation value needs to be adjusted.

Step2: Click “Read Deviation” and click "Continue" button in the deviation prompt that pops up.





Step 3: Click the ID 3 servo deviation adjustment area, and drag the slider to make the ID3 servo bracket and the ID4 bracket screws direction the the same line.

Hold down the mouse and click the slider multiple times with the left button

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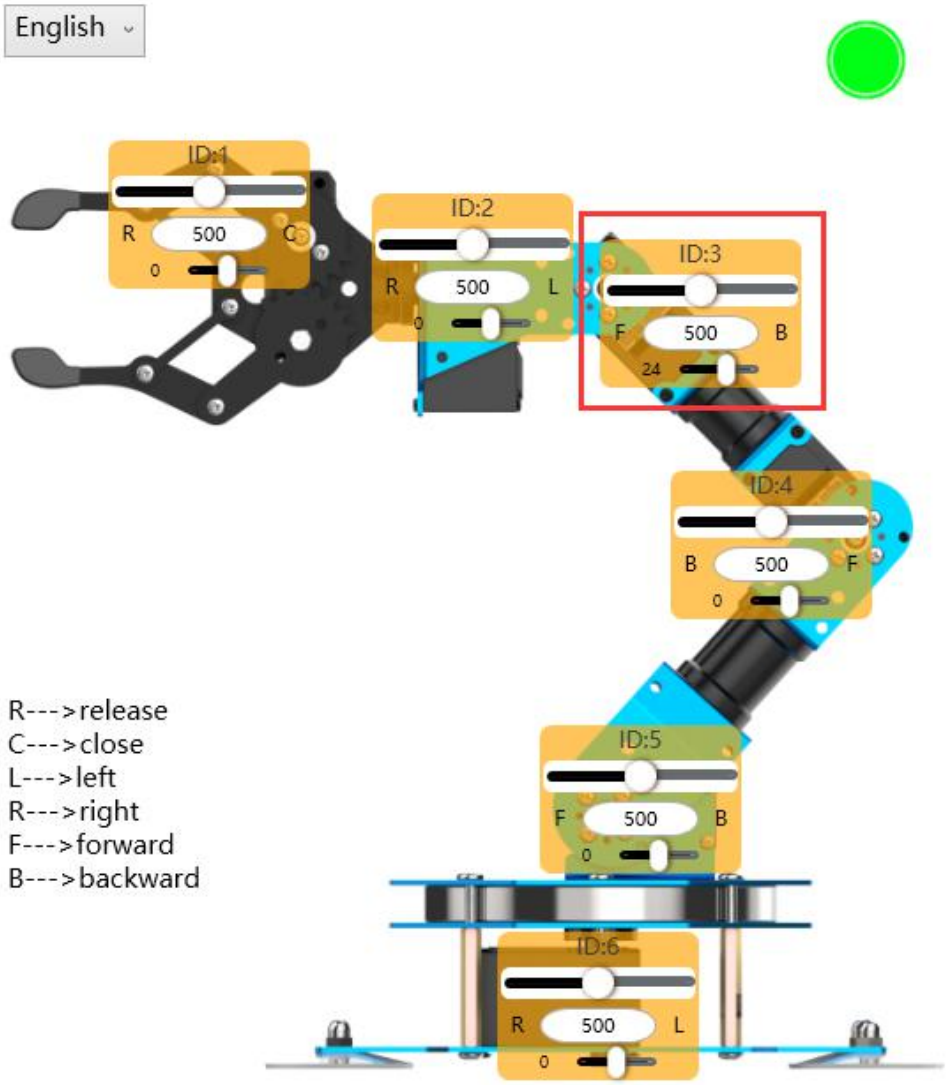


Step4: After adjustment, click “Download deviation” to save the deviation to the controller.

Step5: Click “Servo Reset” again and observe whether the robotic arm deviation adjustment is consistent with the 3. The target of deviation adjustment. If they are consistent, it means the deviation has been successfully adjusted. If they are inconsistent, return to step 1 and then follow the step to make fine adjustments.

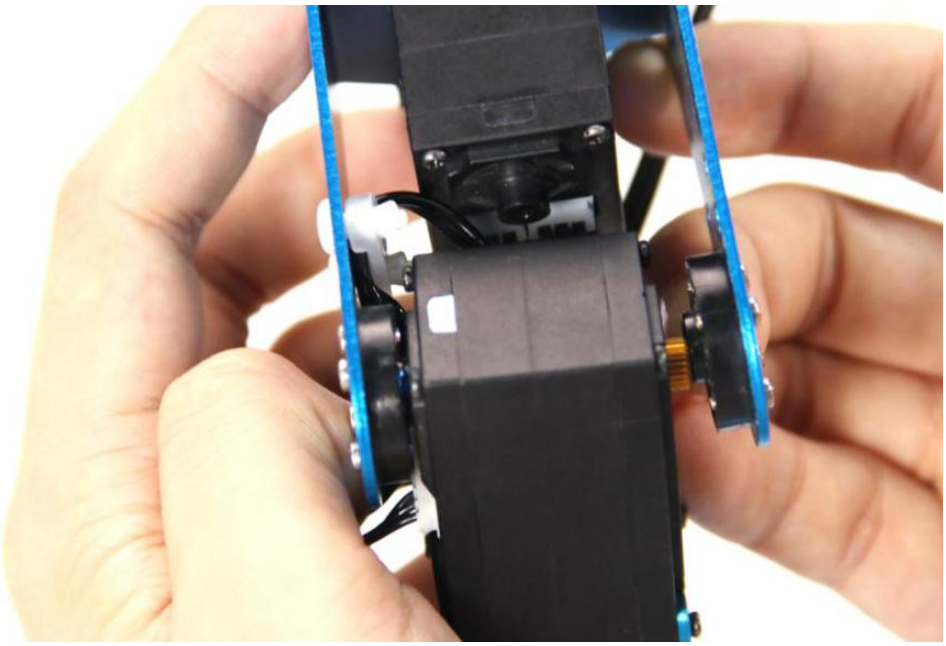
4.2 Large deviation adjustment

Large deviation means that the deviation value is greater than 100 (the deviation angle is grater than 30°). This lesson take the following picture as an example to adjust (“Servo Reset” operation has been performed)

Step1: Observe the attitude of the servo at each position of the robotic arm. If No.3 servo has a large deviation,so it needs to be re-installed once.

Step 2: Remove the main servo horn screw of the No.3 servo, and slightly open the servo bracket to separate the servo main shaft from the bracket.

Note: When you move the bracket, do not exert to much force to avoid bracket deformation.



Step 3: Rotate the No.3 servo bracket so that the No.3 servo screws are in the same line as the screw on the No.4 and No.5 servo bracket below, and stop turning.

Step4: Install the bracket back to the No.3 servo main shaft and tighten the screws.

Step5: Click “Servo Reset” and observe whether the robotic arm deviation adjustment is consistent with the 3.The target of deviation adjustment. If they are consistent, it means the deviation has been successfully adjusted. If there is small deviation, then follow 4.1 Small deviation adjustment method to make adjustments.