

CONVEYOR BELT

INSTRUCTION MANUAL

Part Lists:



Hardware:

1. Conveyor Belt & Color Sensor * 1
2. uArm 30P Bottom Expansion Plate * 2
3. 12V Power Adapter * 1
4. USB Type C Cord * 2 & uArm Power Cord * 1
5. Target Object (Red& Green& Yellow Cube) * 1
6. Ultrasonic Sensor * 1
7. LCD * 1
8. Control Board * 1

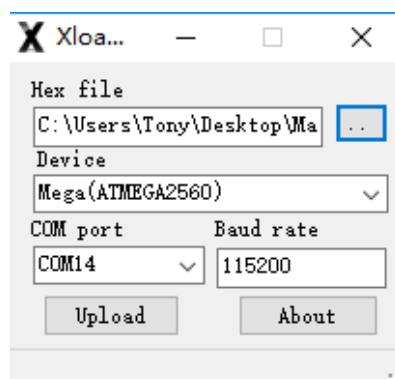
9. Material Slide * 1 & Line Finder * 1
10. Connection Plate * 1
11. uArm Swift Pro Stator * 2

Software:

1. [Arduino IDE](#)
2. [conveyor_belt.ino](#) for Arduino Mega 2560
3. [UArmSwiftPro_2ndUART.hex](#) for uArm

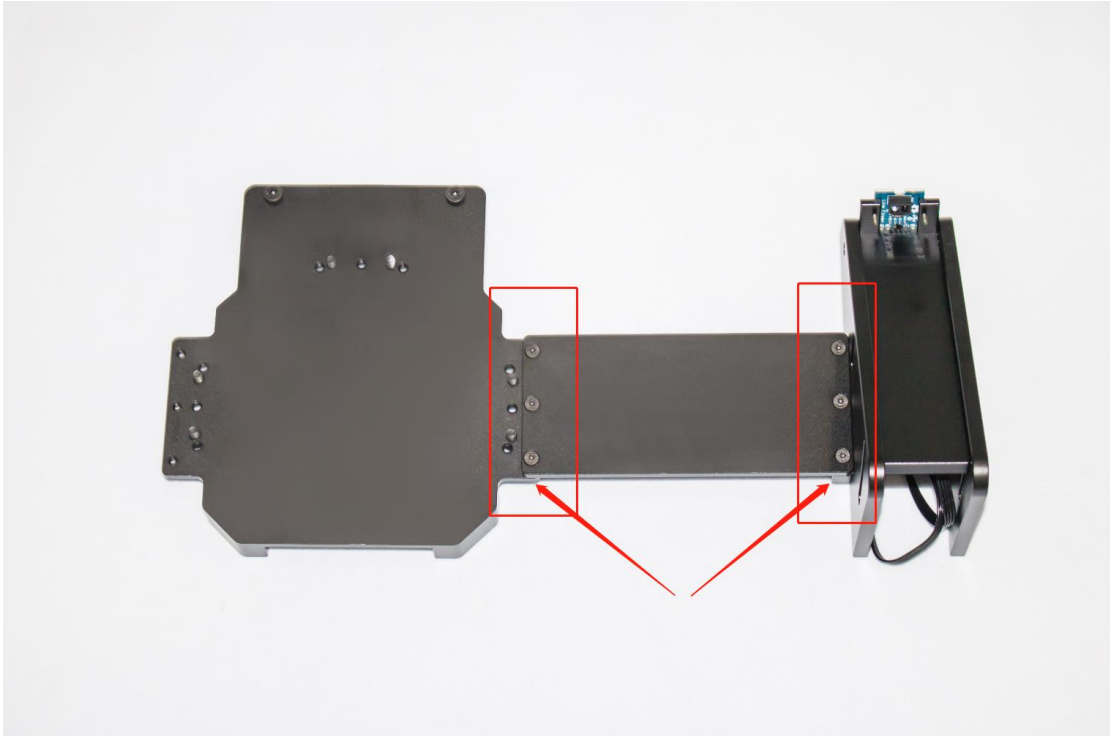
Software installation

1. Download the [hex](#) (UArmSwiftPro_2ndUART.hex)
2. Download and extract [XLoader](#).
3. Open XLoader and select your uArm's COM port from the drop down menu on the lower left.
4. Select the appropriate device from the dropdown list titled "Device".
5. Check that XLoader set the correct baud rate for the device: 115200 for Mega (ATMEGA2560).
6. Now use the browse button on the top right of the form to browse your hex file.
7. Once your hex file is selected, click "Upload" The upload process generally takes about 10 seconds to finish. Once completed, a message will appear in the bottom left corner of XLoader telling you how many bytes were uploaded. If there is an error, the total bytes uploaded will be shown instead. (Please check if the parameters are the same as shown in the picture below, except COM port may different)



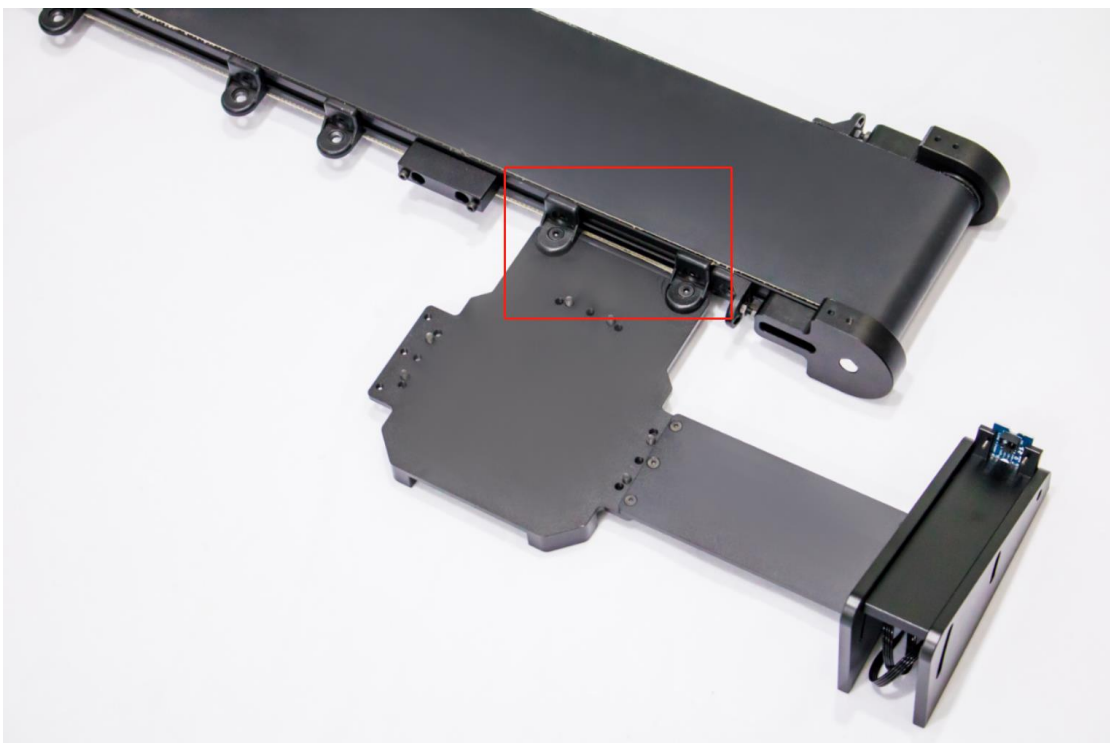
Hardware installation

1. Install the Material Slide



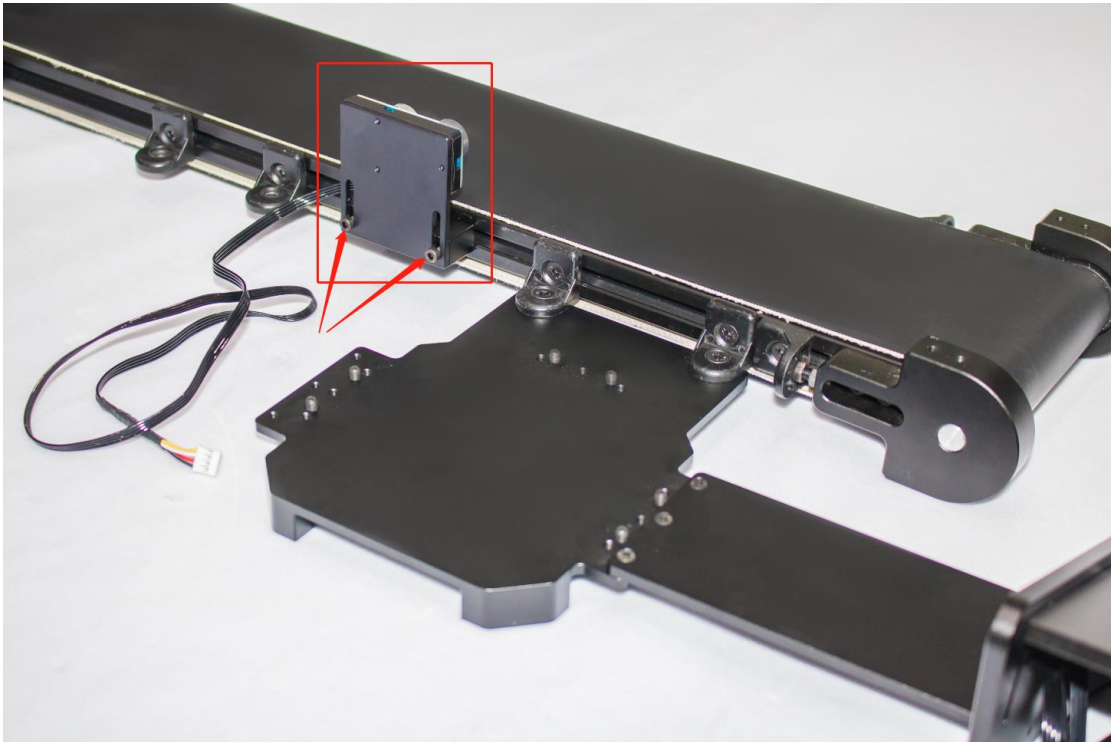
Use connection plate to connect the stator and material slide.

2. Install the uArm Stator (with Material Slide)



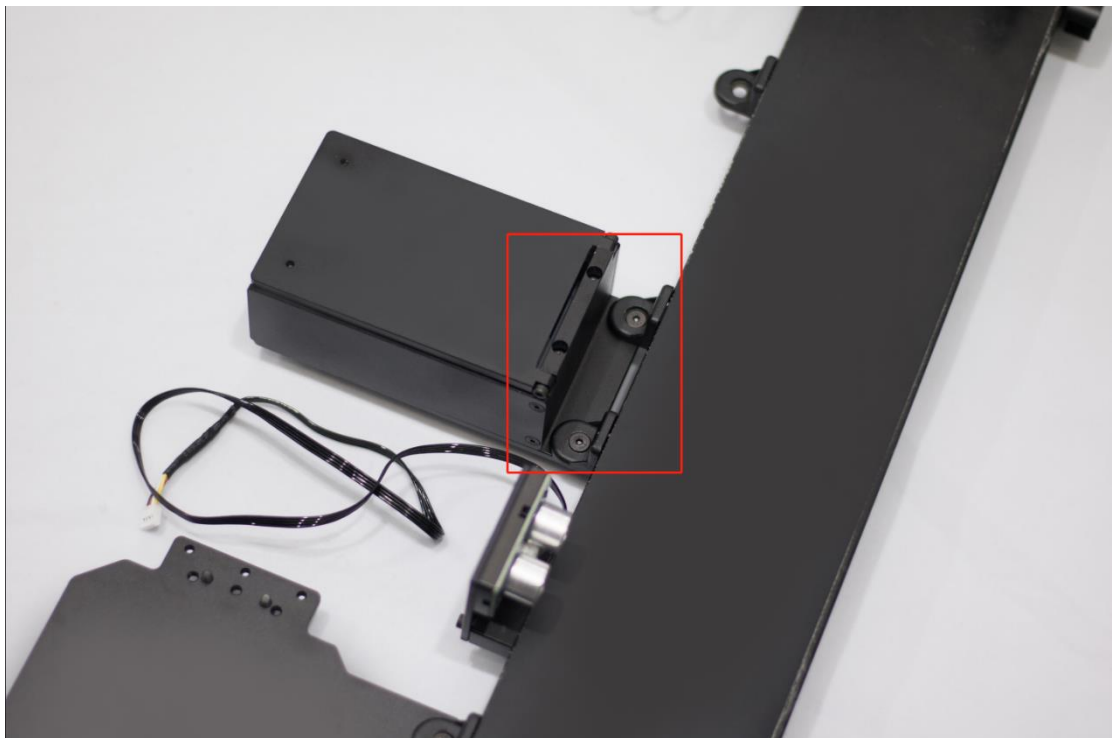
Fix the uArm stator on the conveyor belt.

3. Install Ultrasonic Sensor



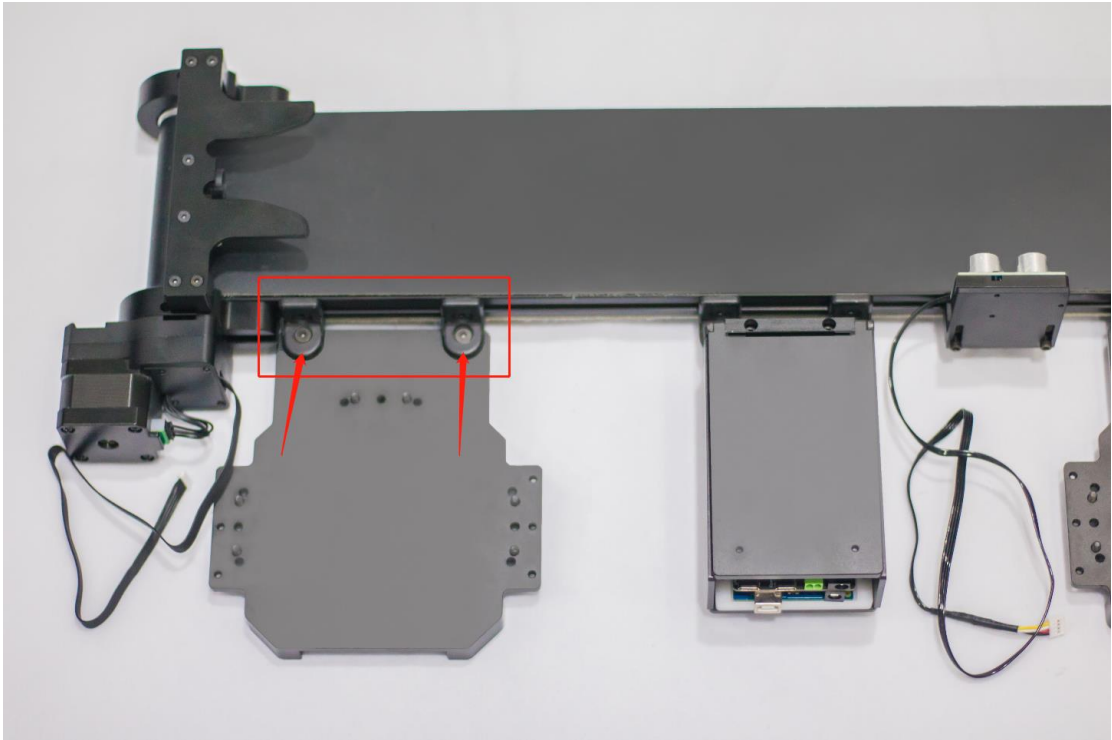
Fix the ultrasonic sensor on the conveyor belt.

4. Install Main Control Board



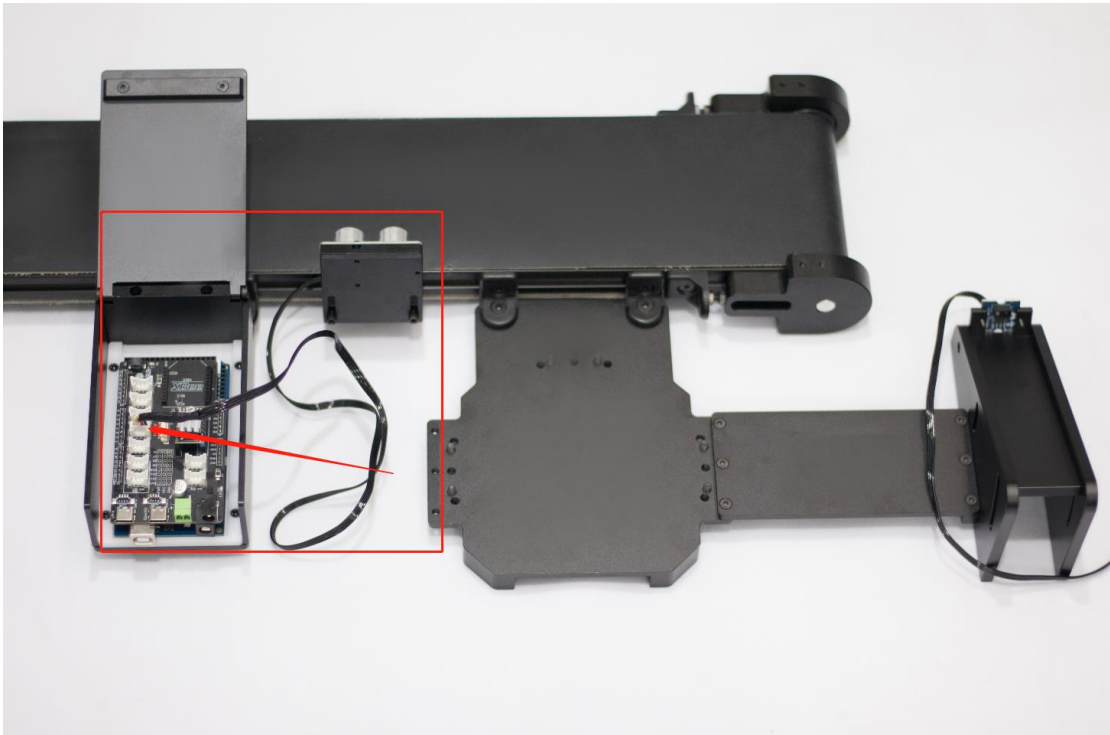
Fix the main control board on the base of the conveyor belt.

5. Install the uArm Stator



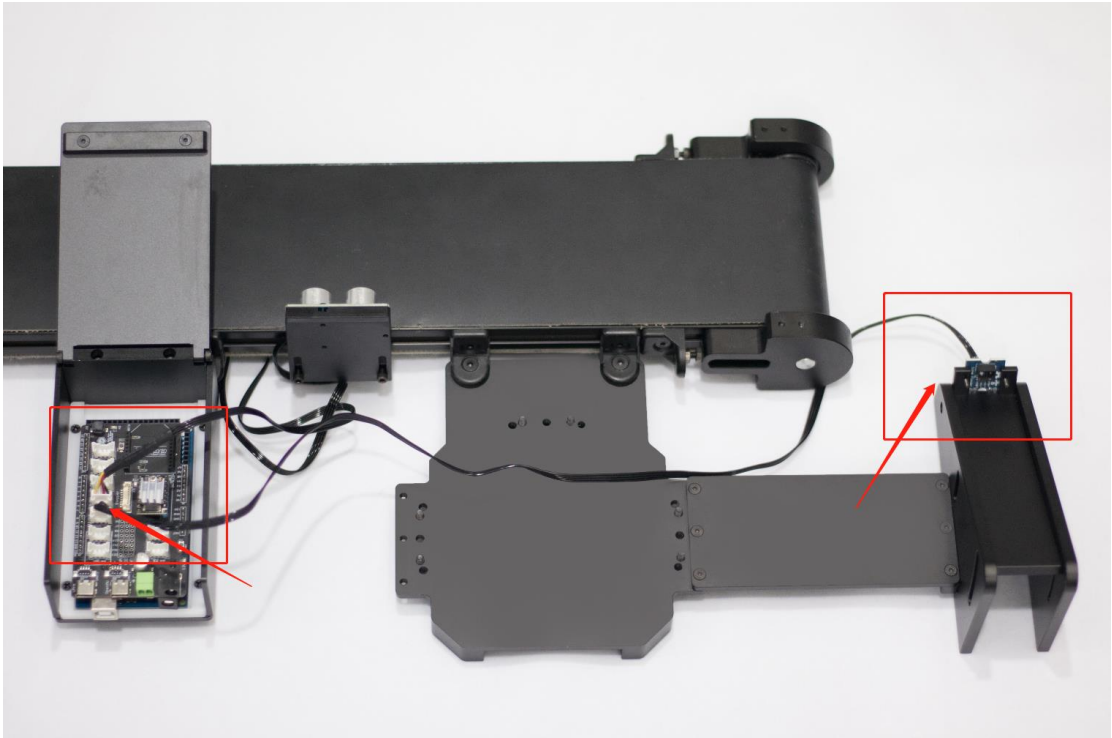
Fix another stator on the conveyor belt.

6. Connect Ultrasonic Sensor



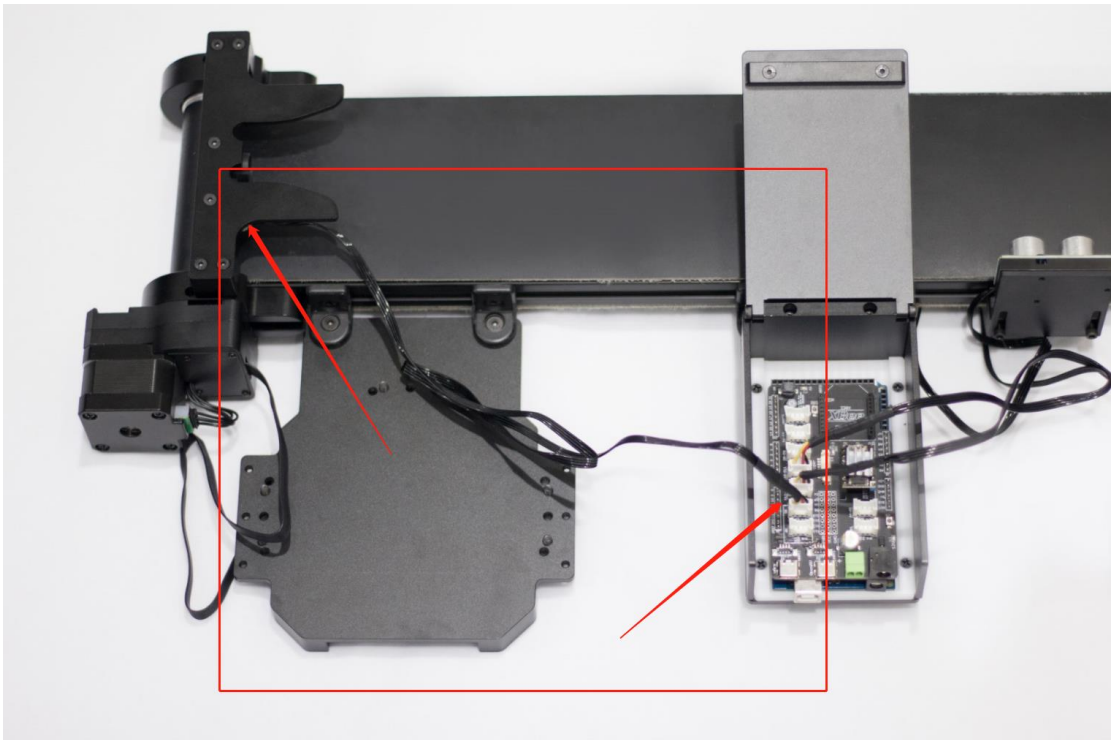
Insert the ultrasonic sensor cord into D10-D11 of the main control board.

7. Connect Line Finder



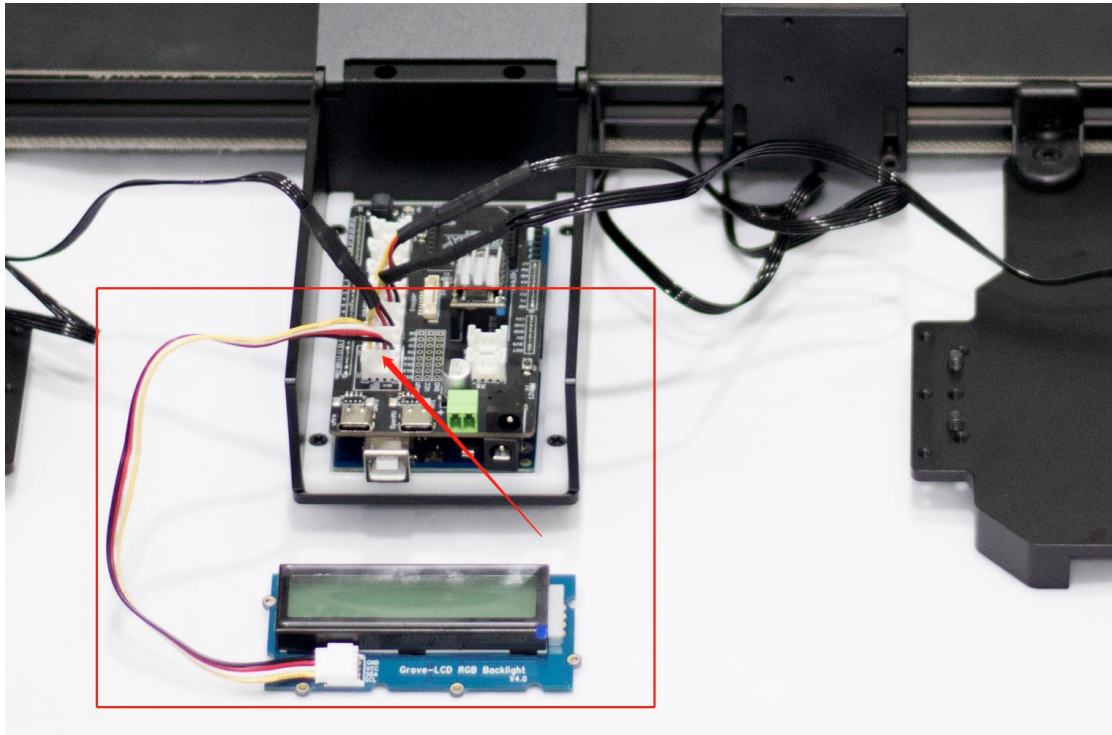
Insert the line finder cord into D12-D13 of the main control board.

8. Connect color sensor



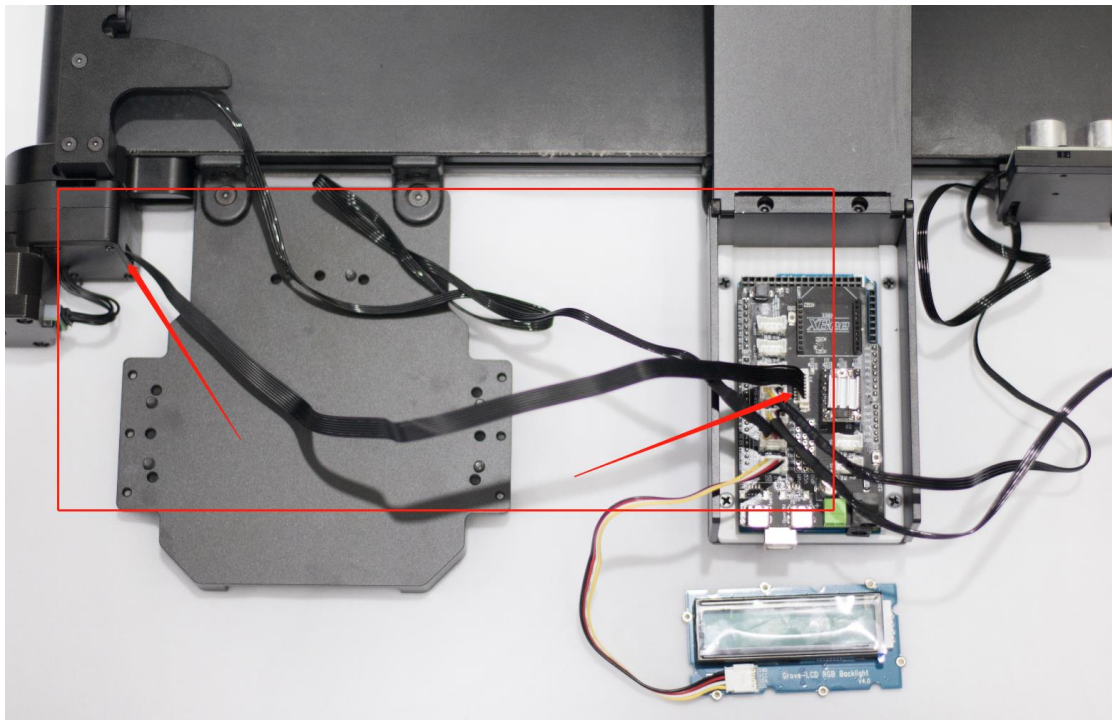
Insert the color sensor cord into the IIC of the main control board.

9. Connect LCD



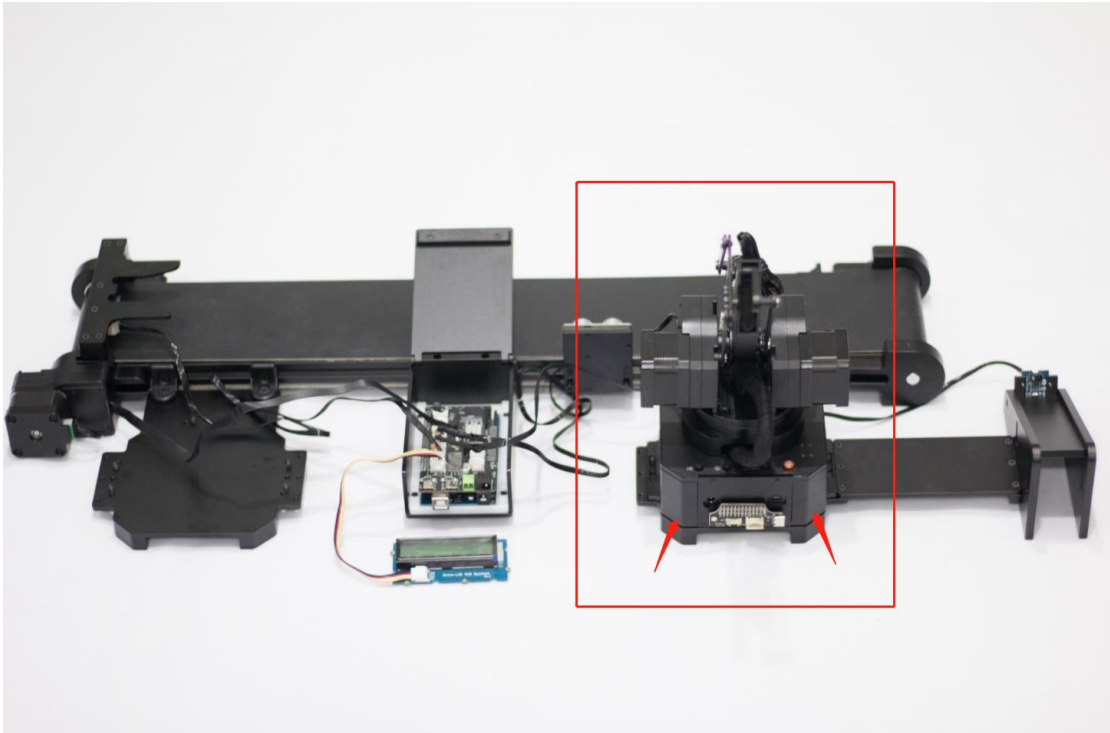
Insert the LCD cord into the IIC of the main control board.

10. Connect Conveyor Belt

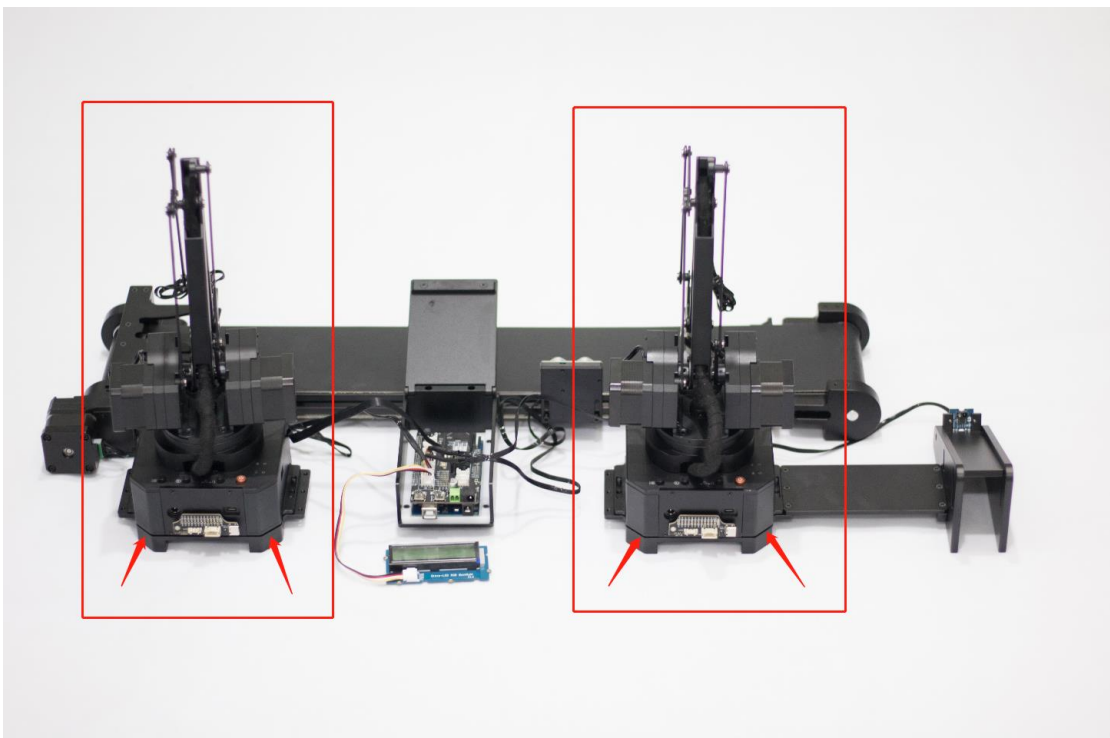


Insert the conveyor belt cord into the motor drive of the main control board.

11. Install uArm Swift Pro

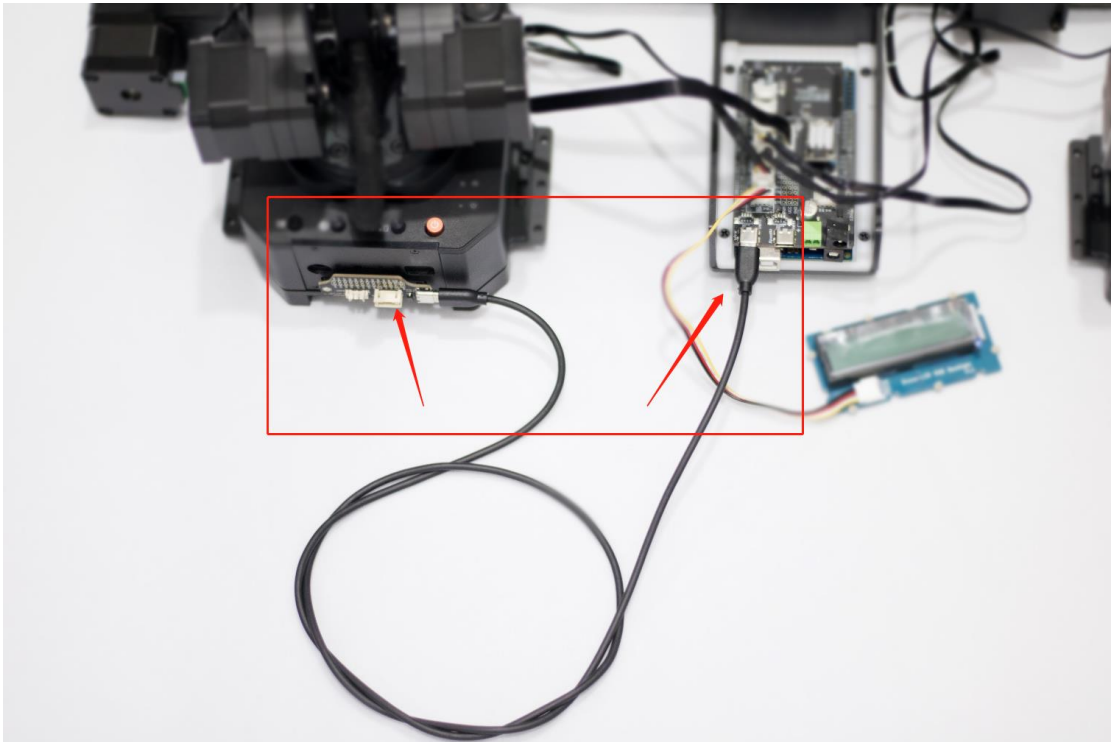


Place uArm Swift Pro on the stator tightly.



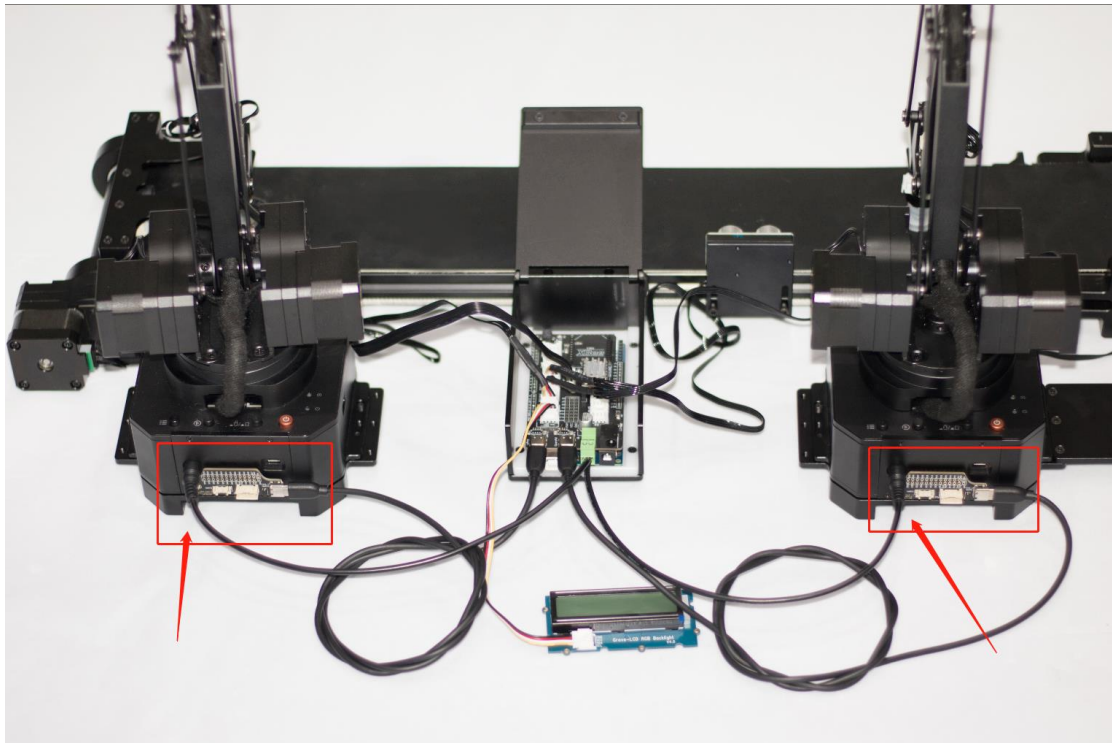
Place the other uArm Swift Pro the same way.

12. Connect the COM of uArm Swift Pro



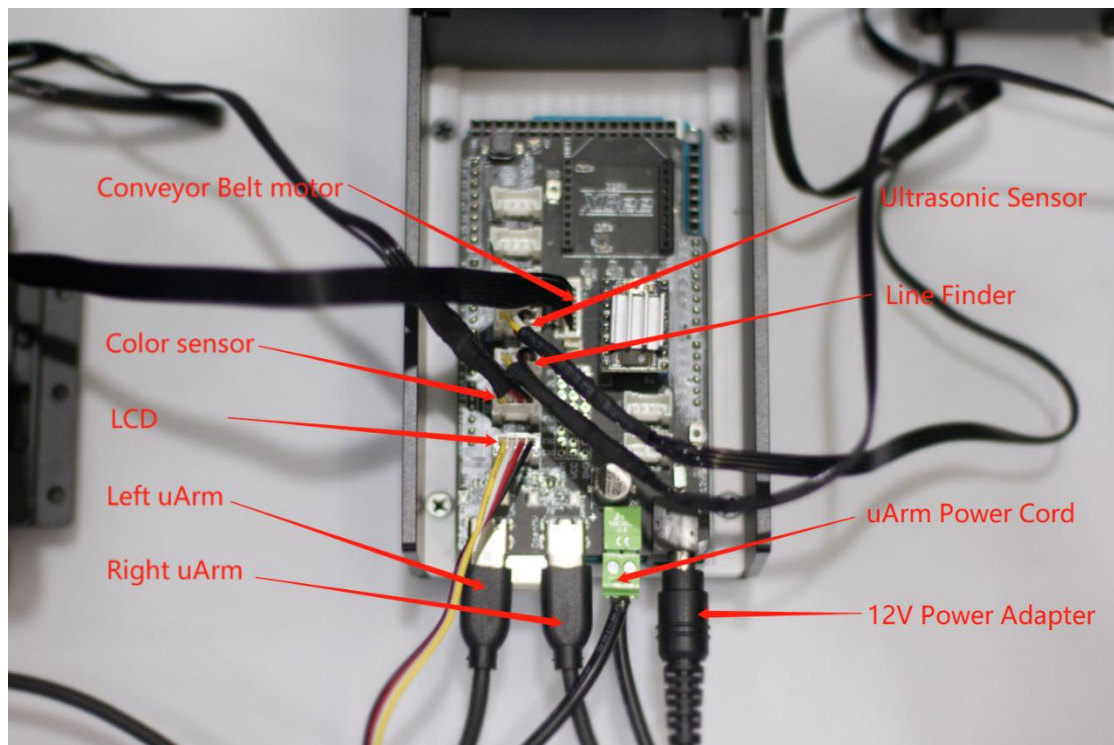
Use TYPE-C cord to connect uArm Swift Pro and control board.

13. Connect the Power Supply of uArm Swift Pro



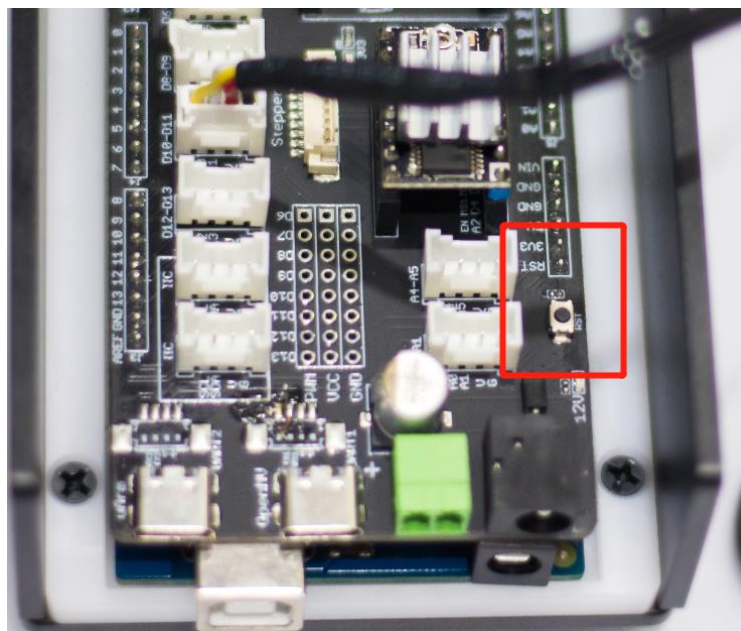
Link the two uArm Swift Pro to the power terminal.

14. Overview



Operation

1. Press the uArm power button
2. Use 12V power adapter to power up the whole system
3. Press the reset button of the control panel to reset the system



4. Place the color cube on the material slide and wait for uArm to pick it up.

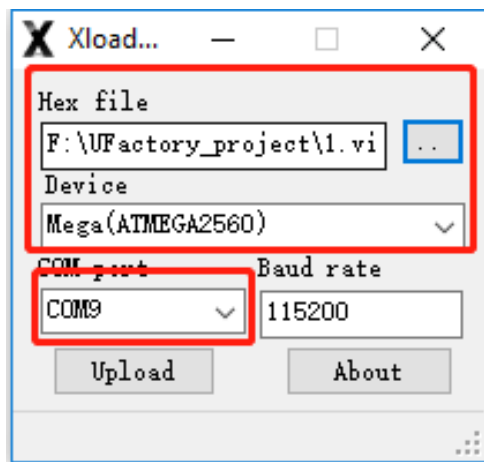
Video

<https://www.youtube.com/watch?v=bnhiZaNqpz8>

Firmware Reset

In the first step, a special firmware for the conveyor belt is added to the uArm Swift Pro. uArm cannot be controlled using uArm Studio. If you want to control uArm using uArm Studio, please follow the following steps to restore the firmware:

1. Connect the uArm Swift Pro to your computer, open XLoader (xloader.russemotto.com/), and load swiftpro3.2.0.hex (http://download.ufactory.cc/firmware/SWIFTPRO3.2.0.hex?attname=)
2. Click the "upload" button to upload the hex to uArm Swift Pro.



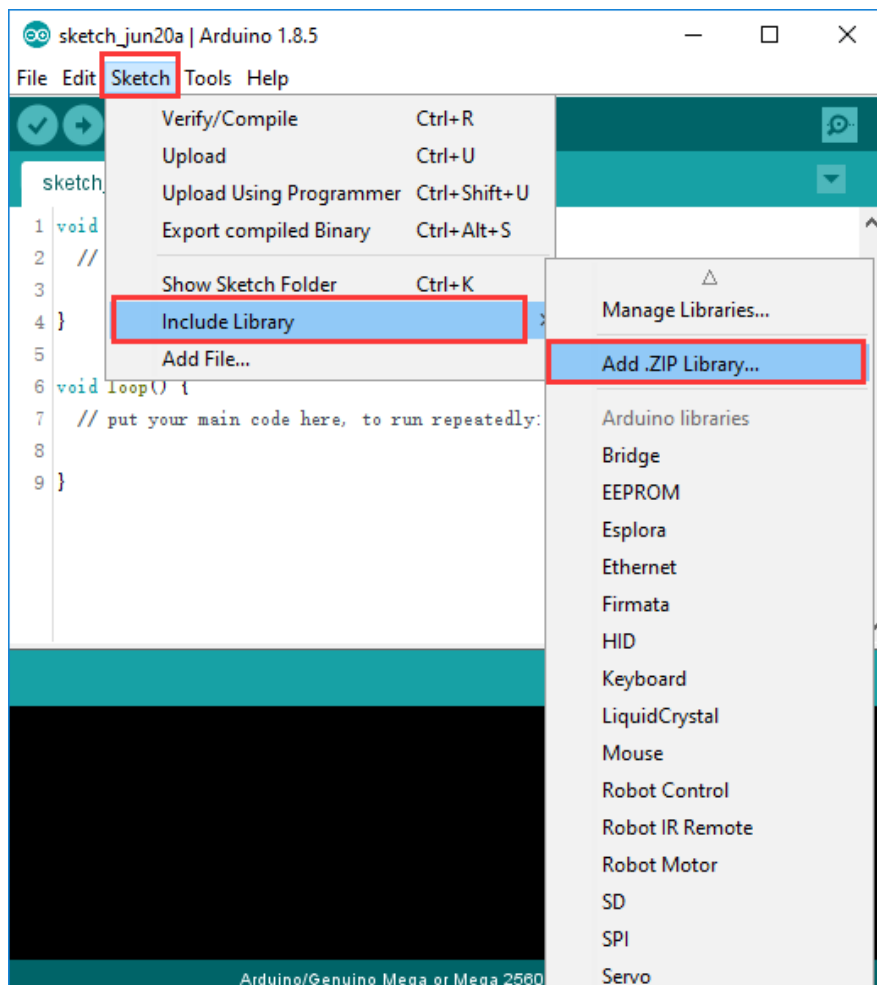
Note

The firmware Arduino Mega2560 has been set before it shipped. If the firmware need to be re-written, please refer to the following steps:

- (1) Download firmware: conveyor_belt.ino for Arduino Mega 2560
- (2) Connect Mega2560 to the computer via USB cable.



- (3) Download External libraries (<https://github.com/uArm-Developer/ConveyorBelt-Examples/tree/master/lib>) and import the library.



- (4) Open firmware in the Arduino IDE and send the firmware to Arduino Mega2560 with the parameters.

