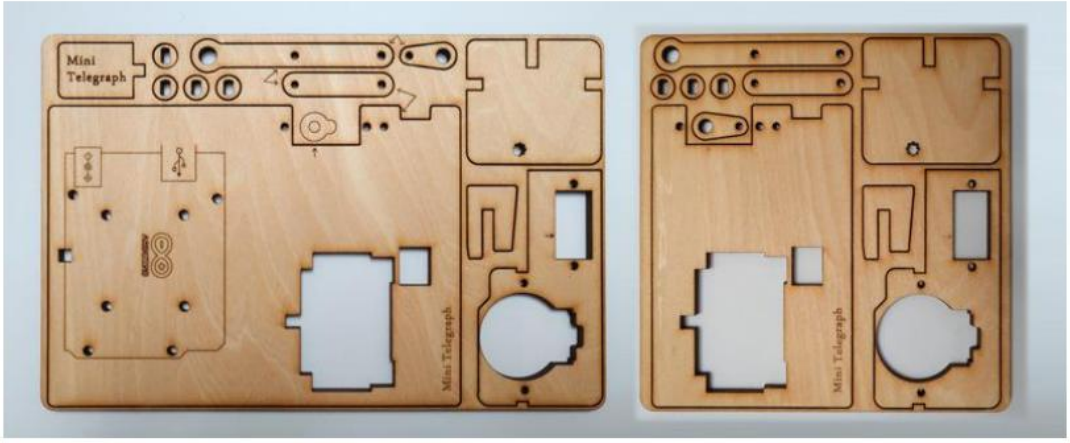
Mini Telegraph 2020

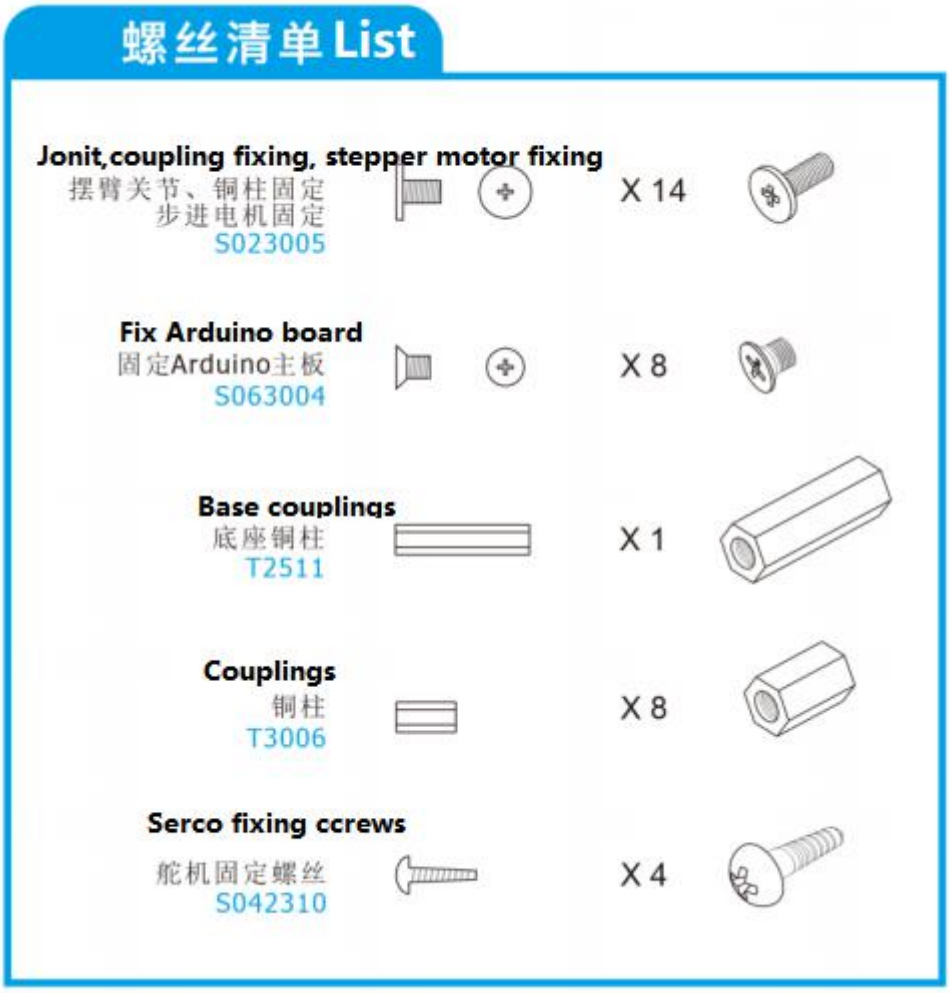
Installation and debugging instructions

1. Start



The versions of different configurations are not exactly the same, and will be mentioned separately in the manual. On the left is the standard version, on the right is the simplified version without

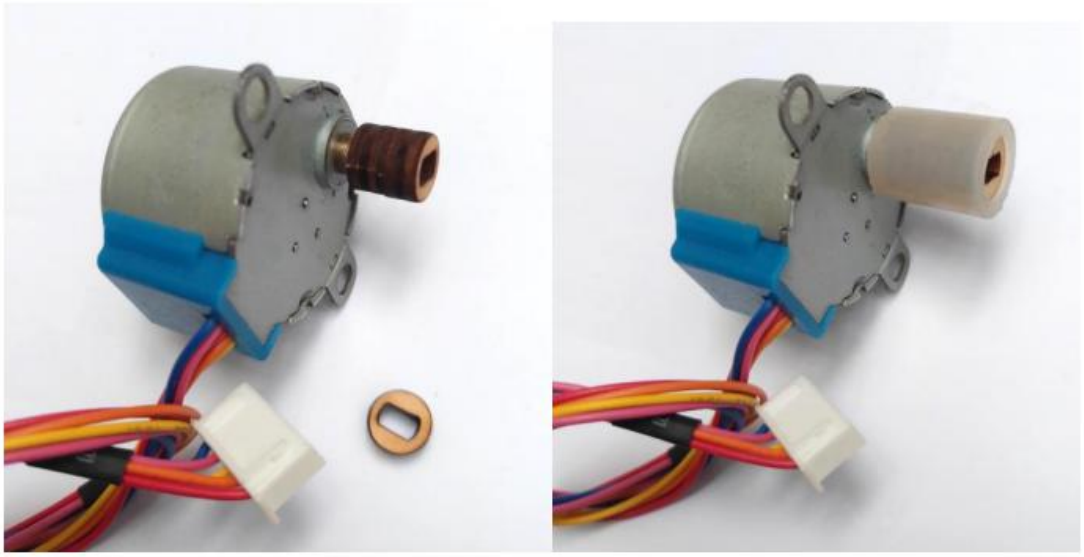
Arduino base and bracket, other parts are the same.



There are many types of screws in the accessory bag, please make sure to distinguish clearly before starting construction. There are several similar screws, the thickest one is solid

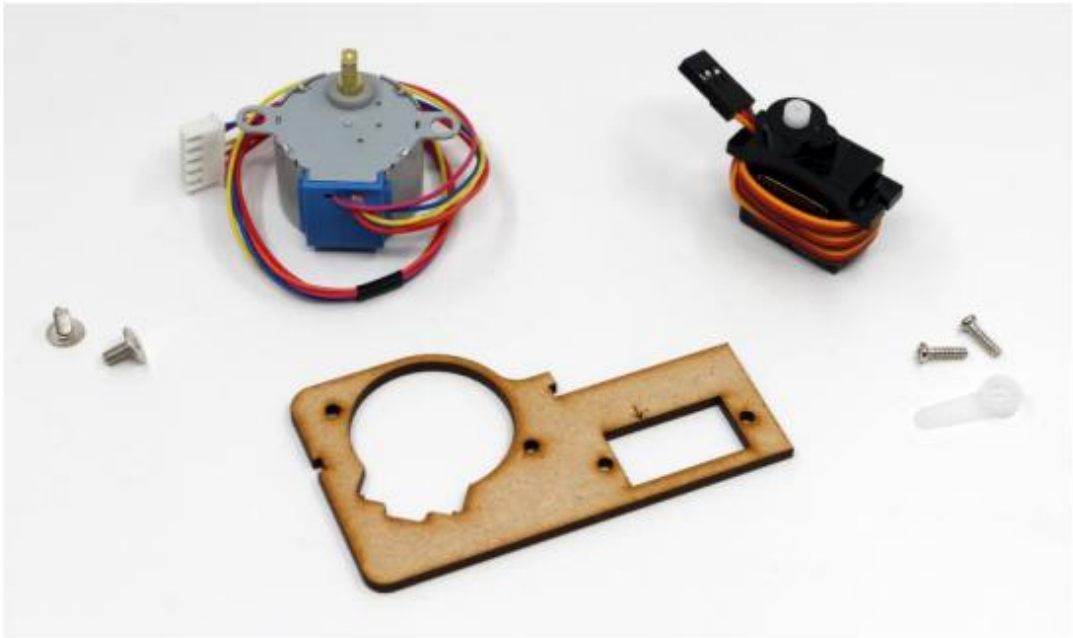
Fixed copper pillar (not provided in the simplified version)

2. Start with the smallest part

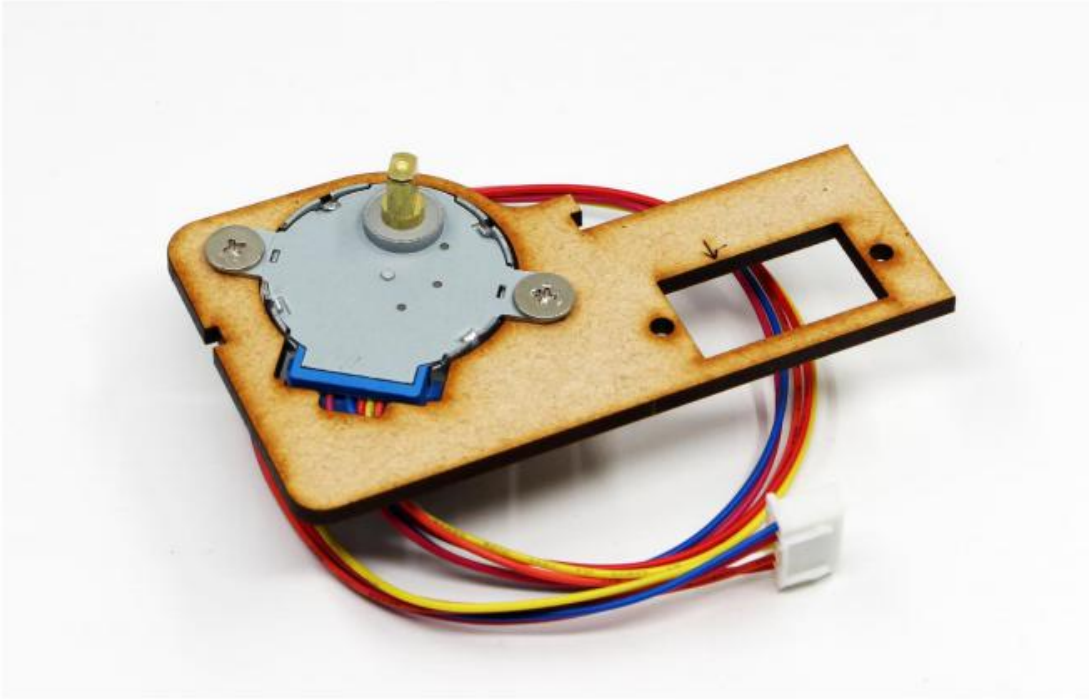


Remove the 3 small shafts and put the silicone stick in the screw pack on the small ring. Set it together on the stepper motor spindle.

3. Officially started



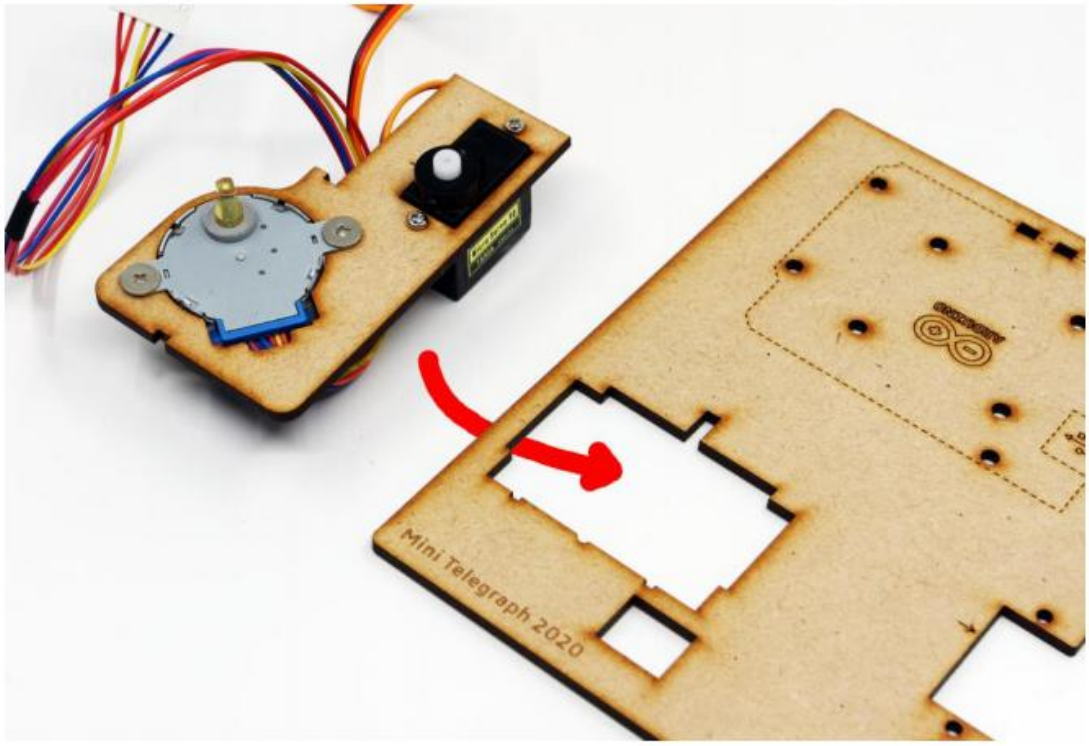
Fix the stepper motor on the bracket. The bracket screw hole can be tightened directly.



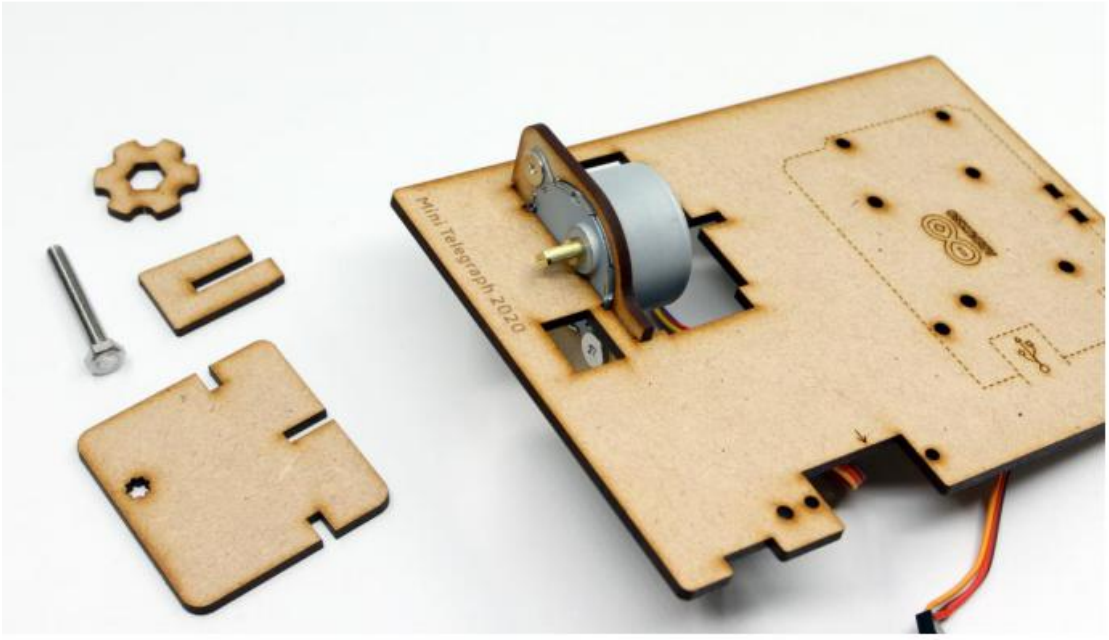
The position of the stepper motor and the bracket may need to be fine-tuned according to the tightness of the paper later, and the screws do not need to be tightened too tightly.

Install the steering gear to the bracket and pay attention to the direction of the main shaft of the steering gear. And install the plastic swing arm of the steering gear on the main shaft of the steering gear.

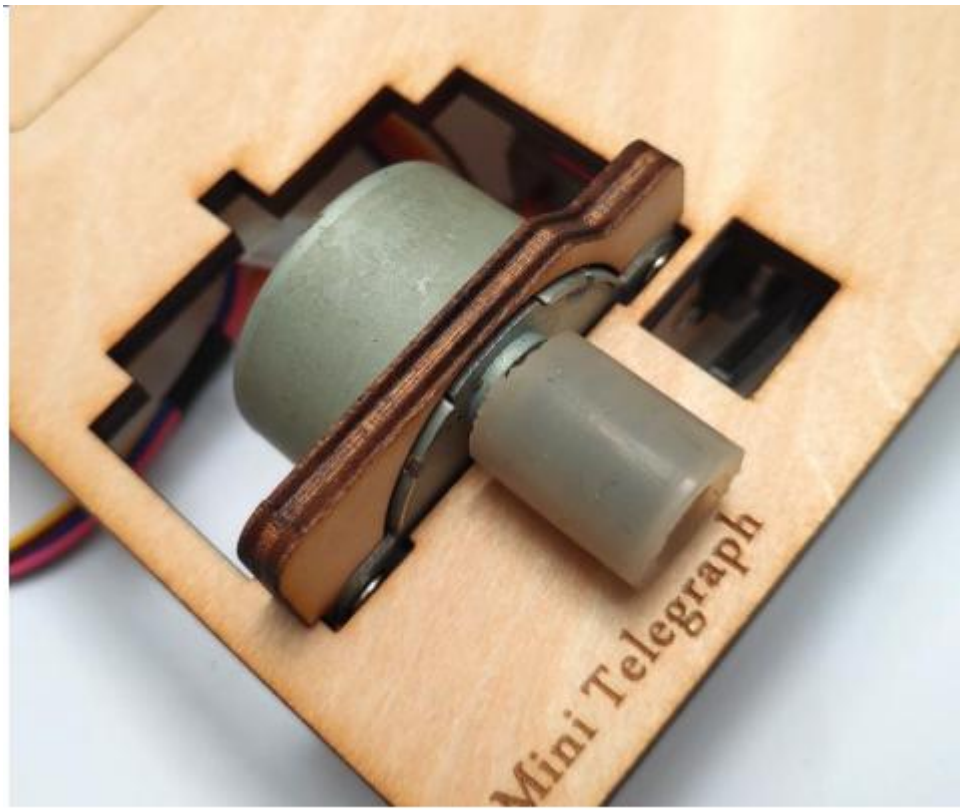
4、



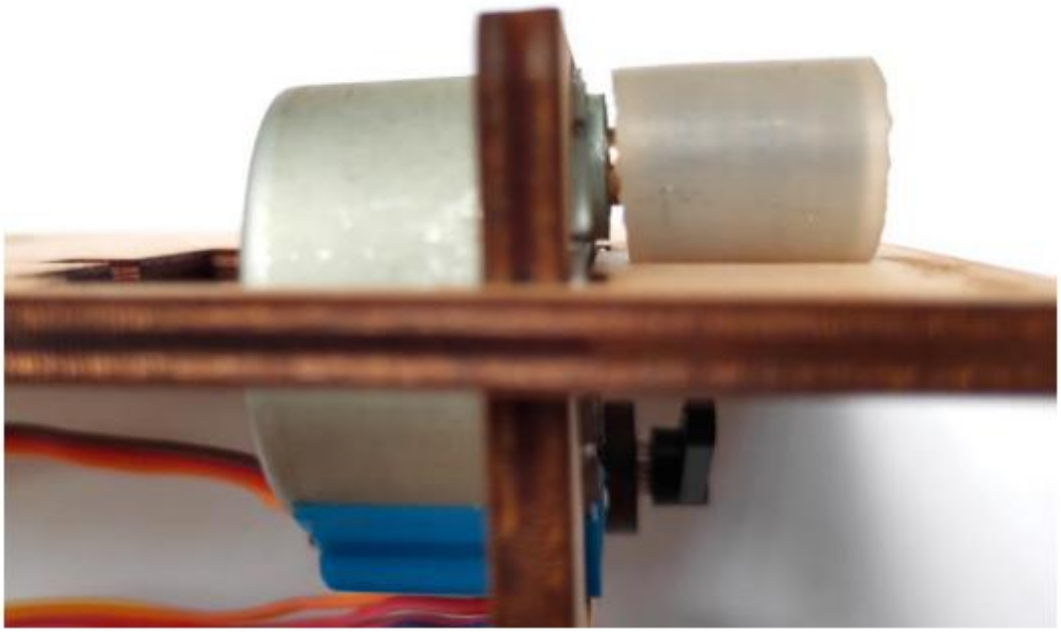
The bracket part comes through from below



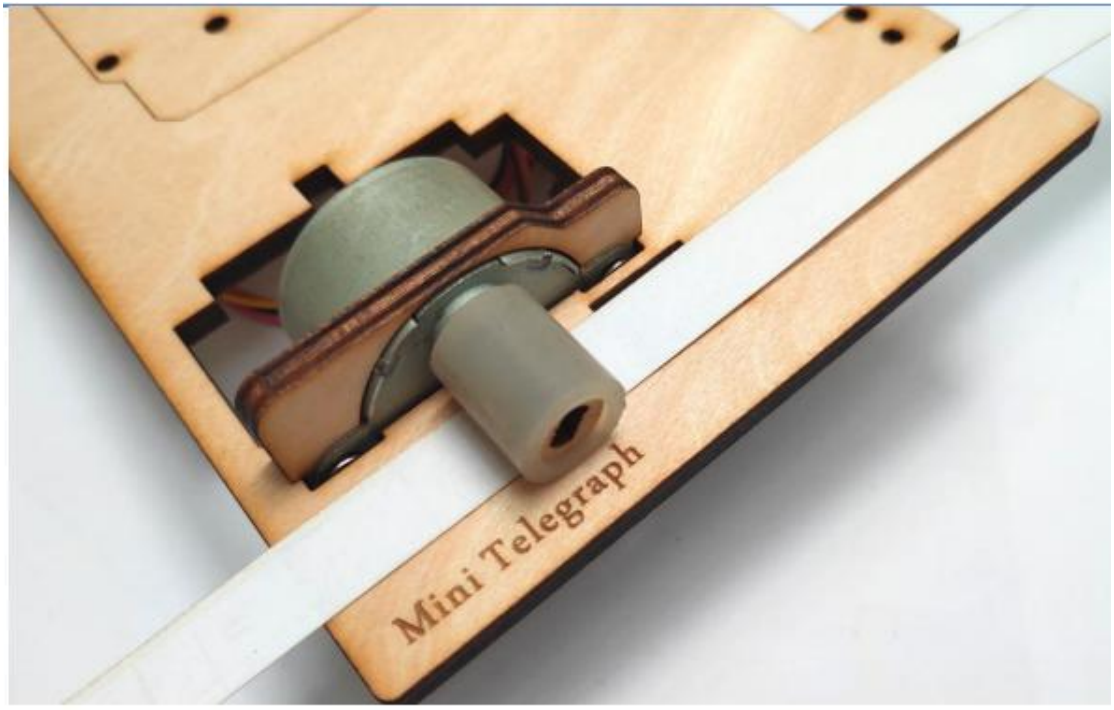
Push forward, click into place OK.



Insert the roller paper wheel and check the gap between the roller wheel and the bottom plate.



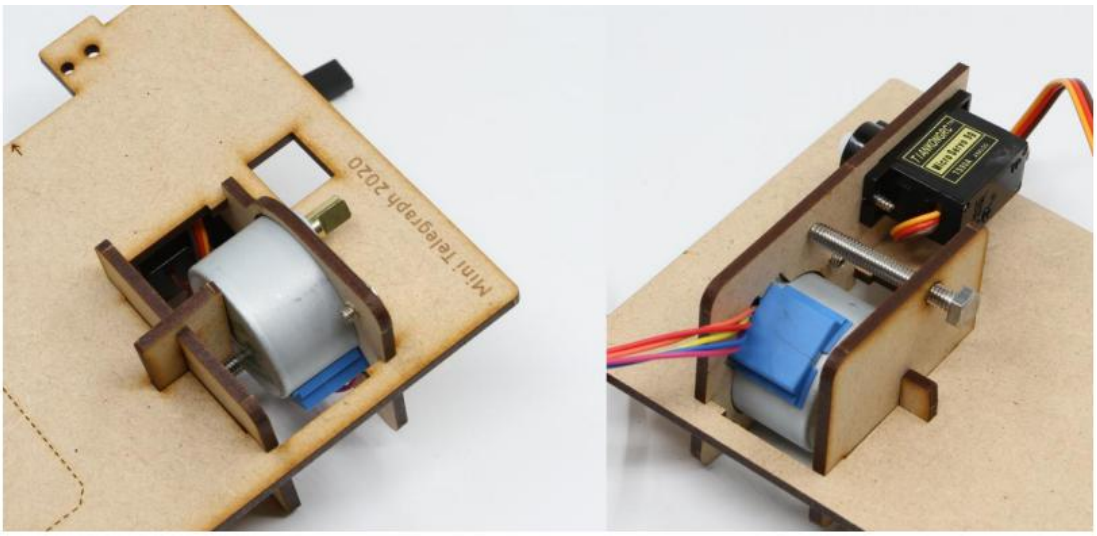
If it is too tight, loosen the fixing screw of the stepper motor, adjust the motor upward a little



Can put a piece of paper to try. Feel the paper and the silicone wheel touch slightly. In the later stage, there are fixing parts to be reinforced, so there is no need to

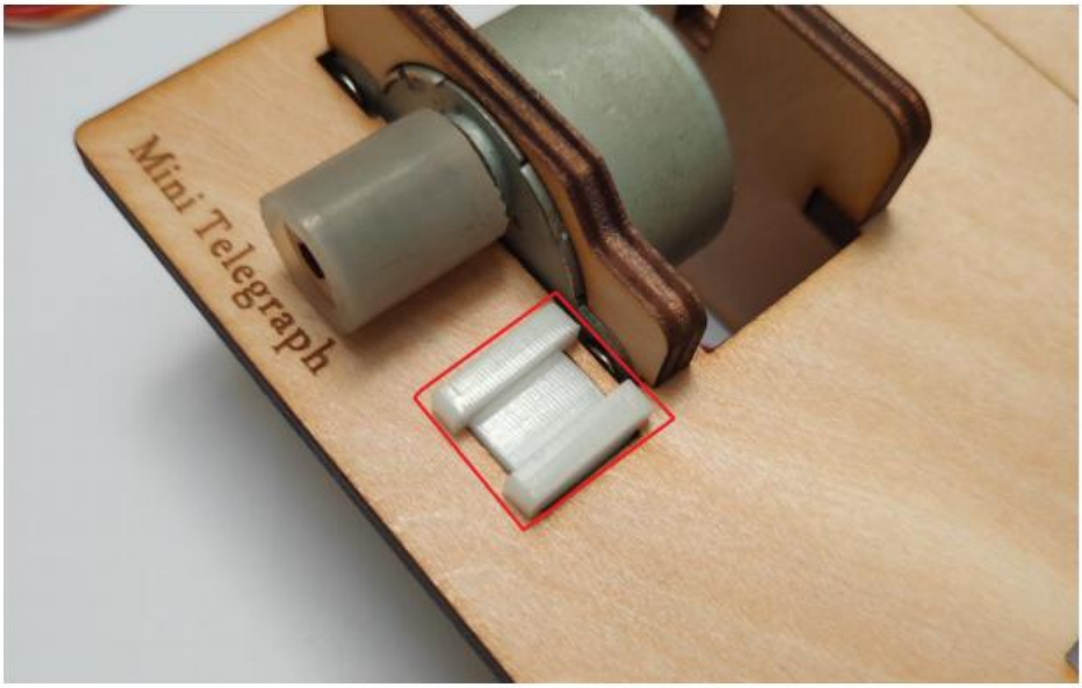
Wheel compression (if too much pressure, too much friction, it may cause the stepper motor to fail to rotate).

The screws of the motor fixing plate can be tightened with this part to save effort.

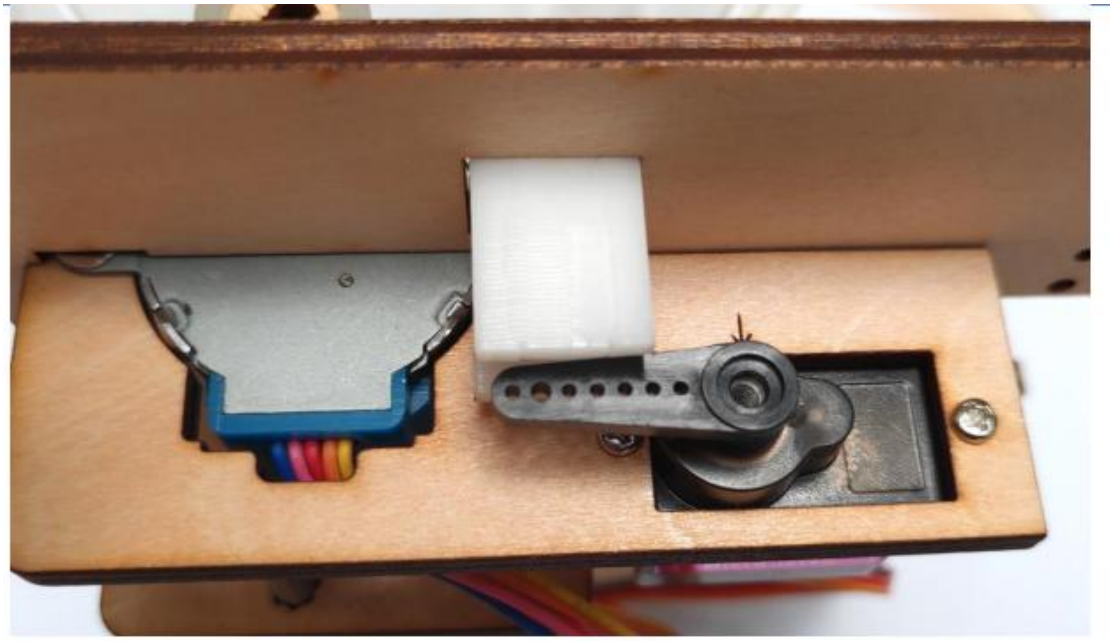


The screws do not need to be tightened, just support them slightly, be careful not to press the motor wires.

The upper latch also does not need to be pressed tightly, and the tightness of the paper depends on the paper feeding situation.



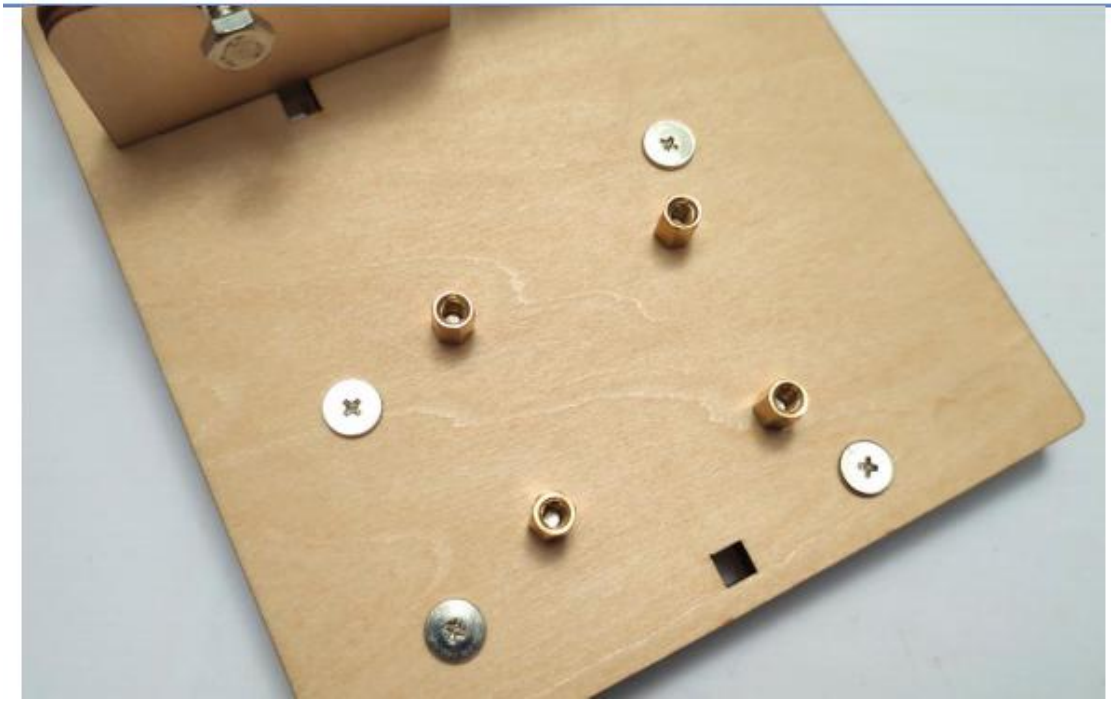
The typing mechanism can be installed, check the tightness, and it should be able to fall freely without obvious friction. If there is obvious friction You can polish the white slider appropriately.



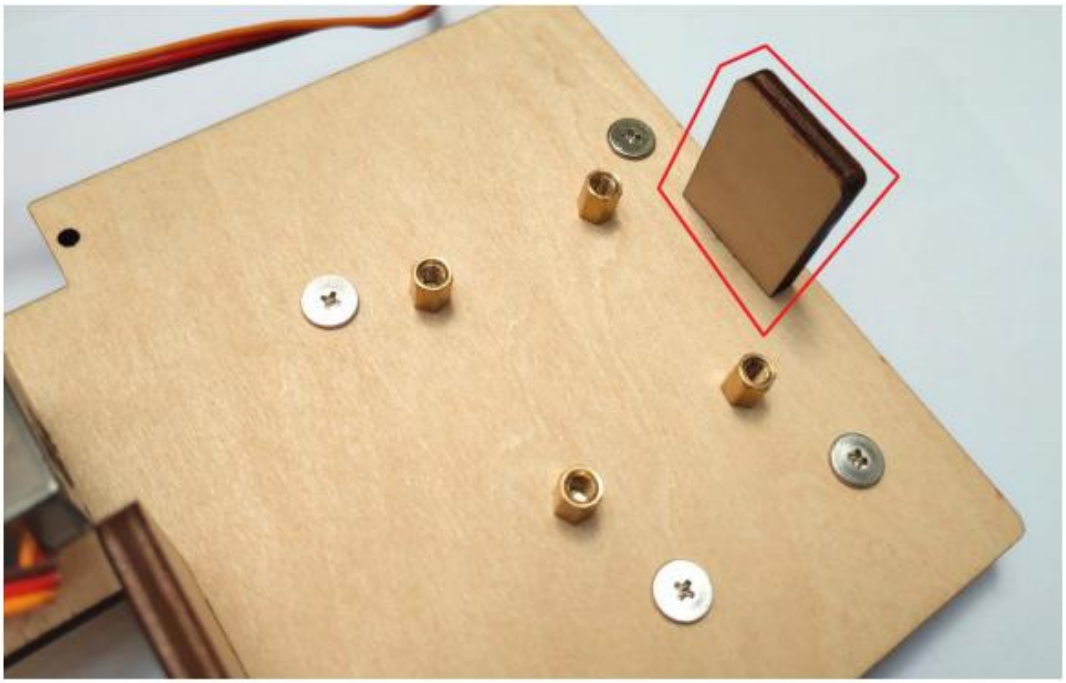
The typical position of the steering gear and the slider, this position needs to be adjusted later in the program. The slider needs to be taken out before debugging the program.

4. Take a short break (skip for short version)

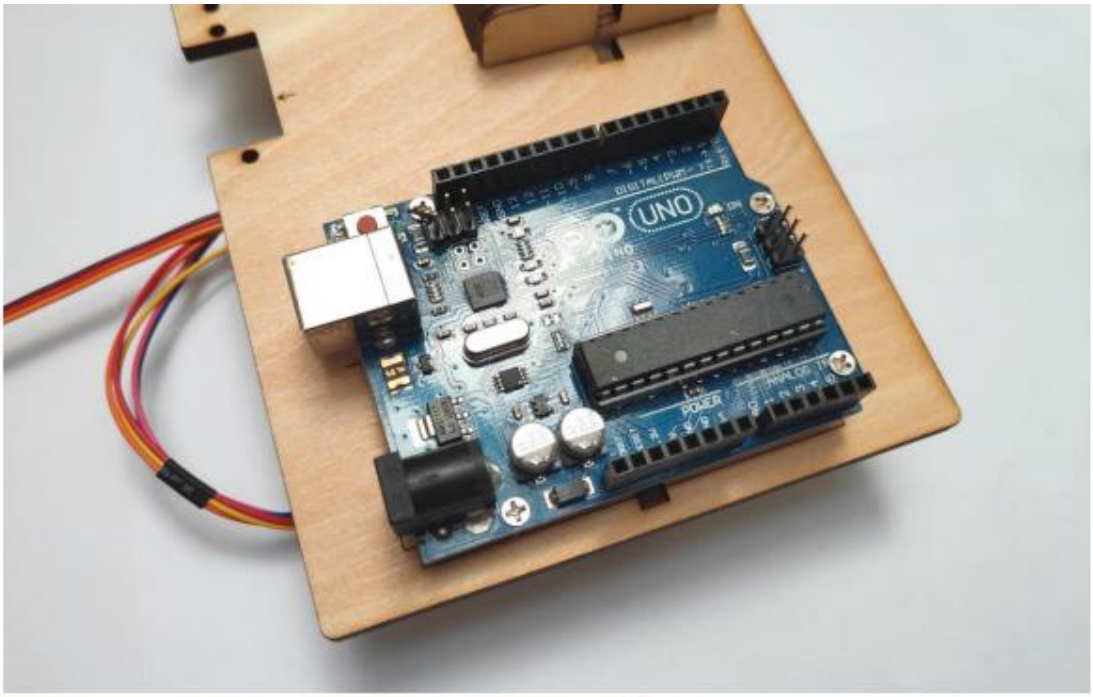
Install copper posts to fix the motherboard.

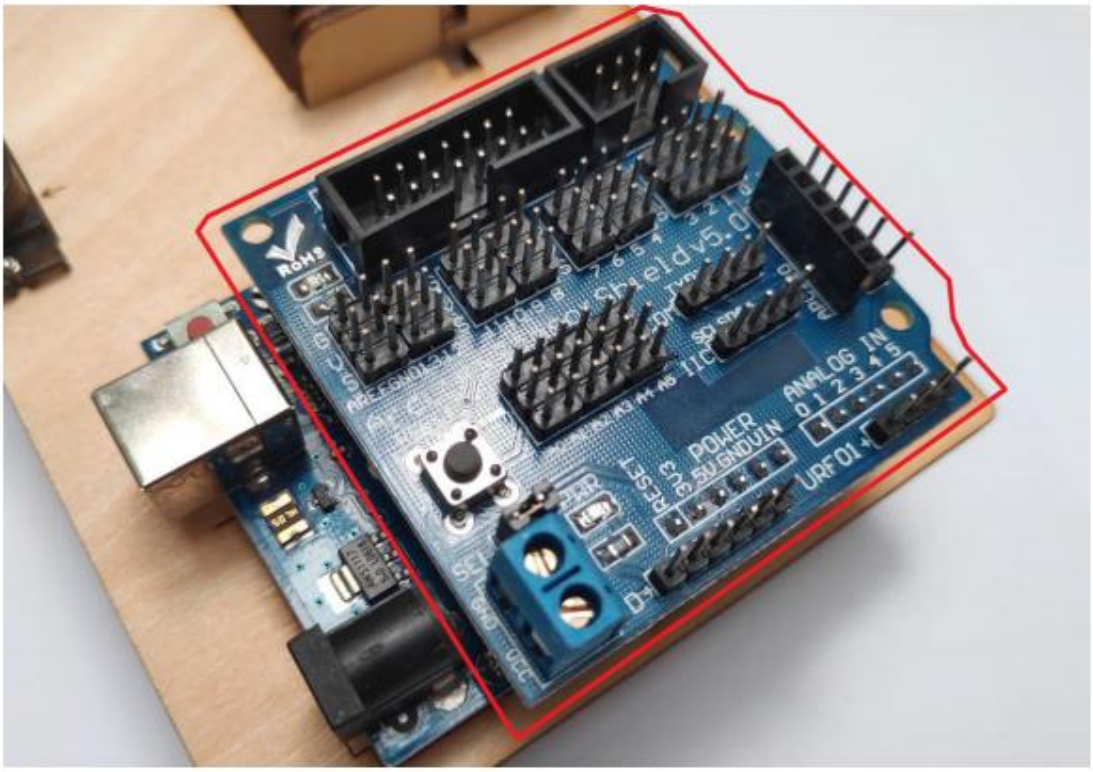


The Arduino is on the top, and the stepper motor control board is on the bottom.

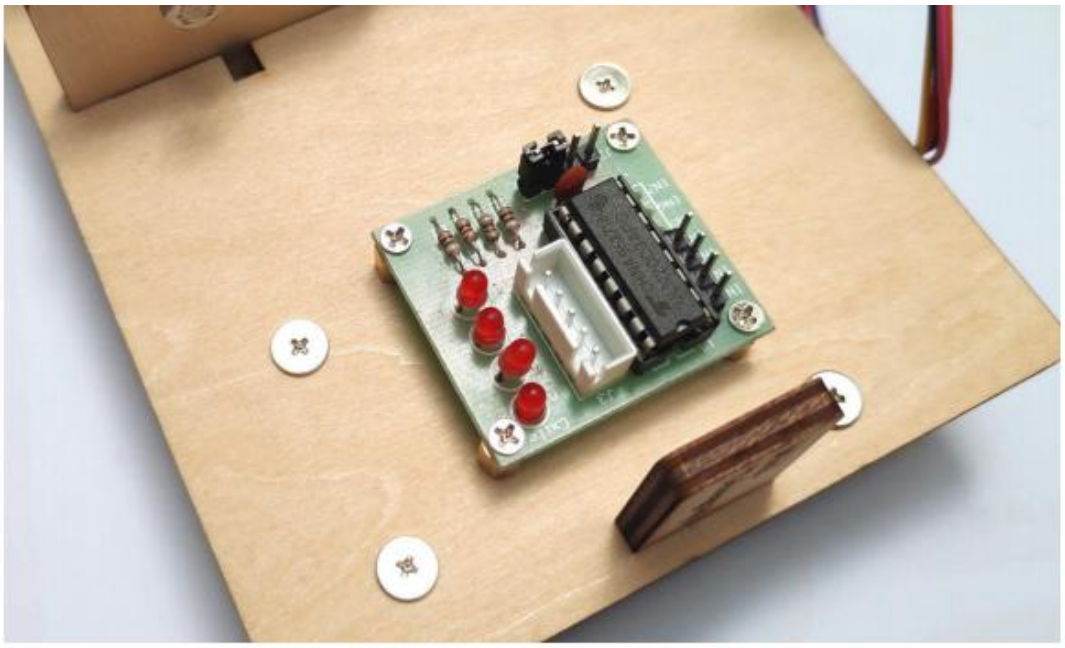


The legs are installed in the square holes.

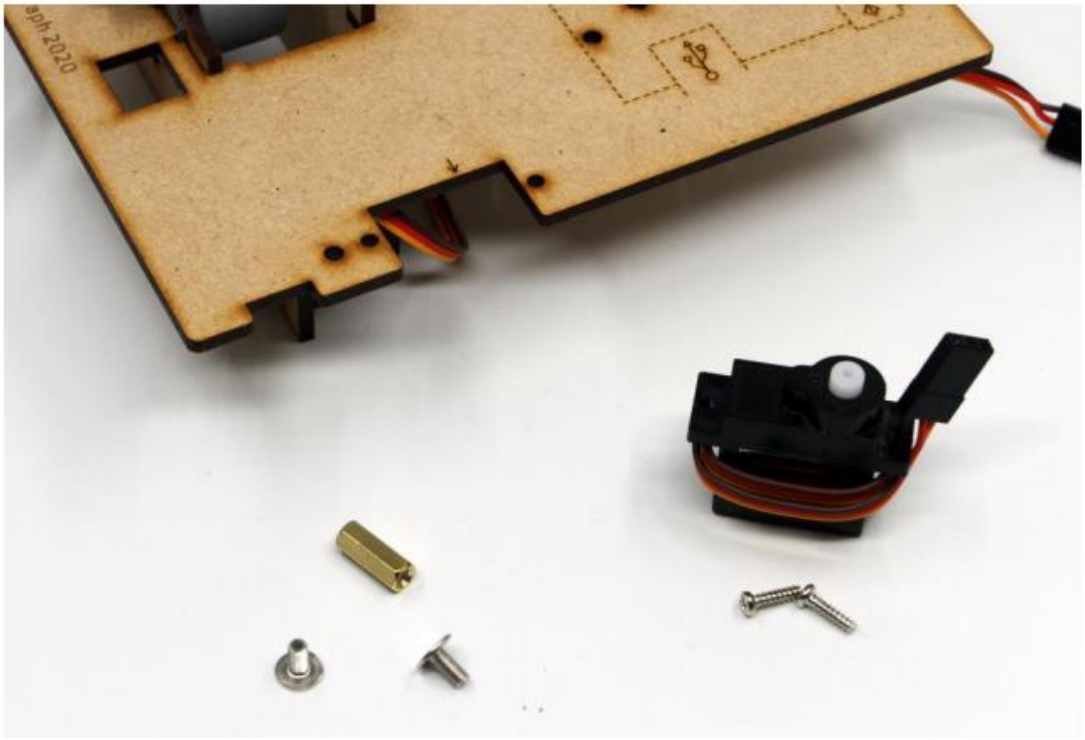

UNO
POWER
ANALOG IN


RoHS
Shield v5.0
POWER
ANALOG IN
0 1 2 3 4 5
URF01

The shield board is inserted on the Arduino main board, pay attention to whether the pins below are aligned.



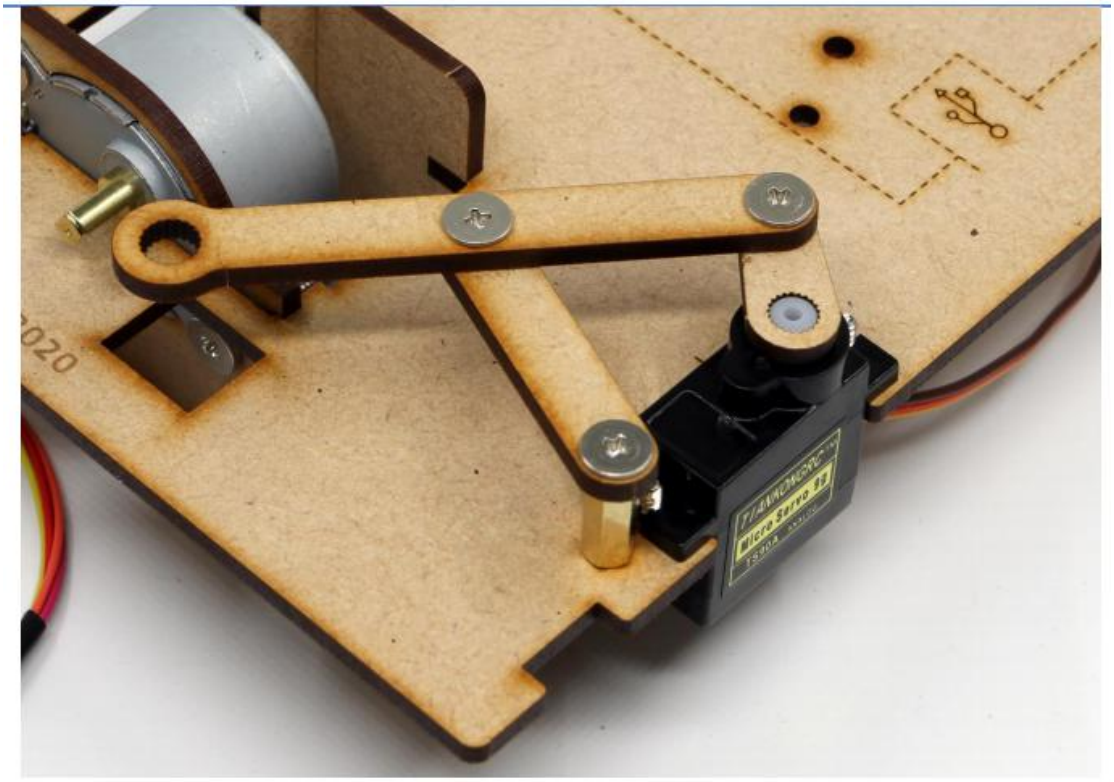
5. Finally



At this position, the steering gear is relatively close to the copper column. You can fix the copper column first and then fix the steering gear.


TIANKONGRC™
Micro Servo 9g
TS90A ANALOG
舵机在上
螺丝从下向上固定

Fix the swing arm, but do not tighten the screws. Allow each part to maintain a freely rotating state.



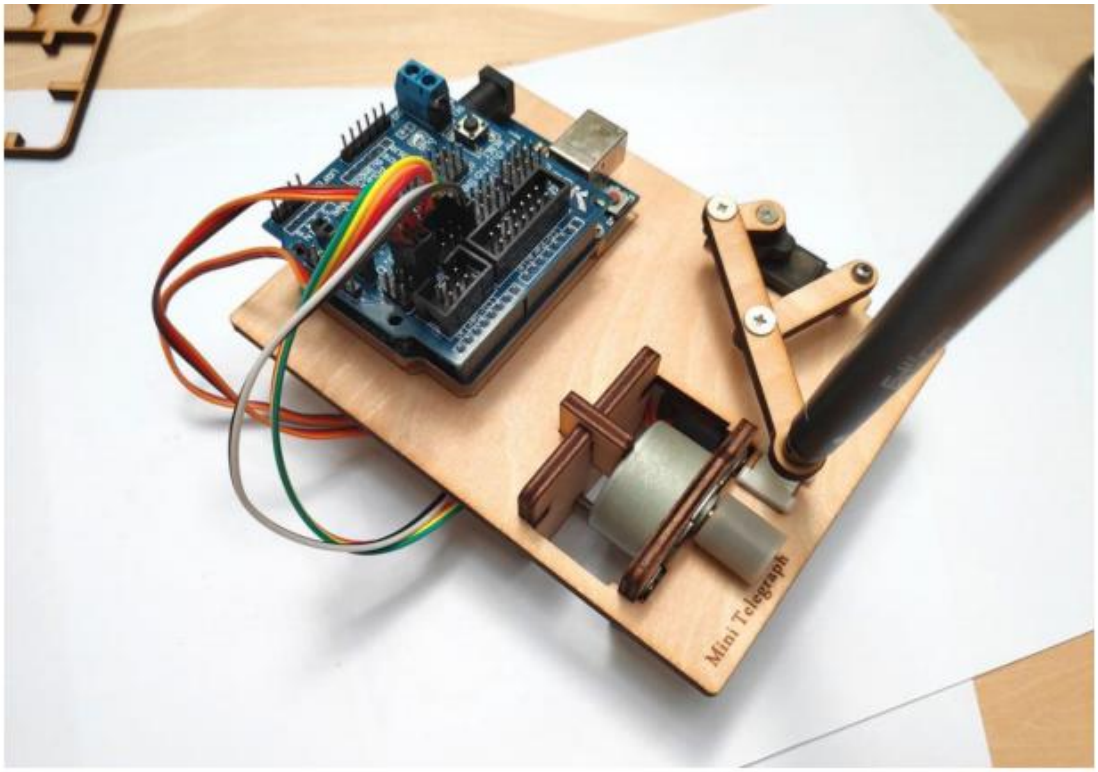
It is recommended to run the program for adjusting the position of the servo first, and then insert the swing arm into the main shaft of the servo. Because when the servo is not powered

Sometimes, it’s impossible to know its position. After the power is turned on, the steering gear arm may turn to a far position, and the parameters need to be adjusted.

trouble. (Master steering gear can ignore this operation)

Load a piece of paper to test it. After adjusting the position of the roller, the paper can be rolled in by itself. The tail is a card holding the paper

The buckle must be inserted into the groove of the bottom plate.



6. Wiring

Shield (Shield, expansion board) is inserted into

On the Arduino UNO, the shield pins are aligned

The UNO cable hole is enough. The role of the shield is similar

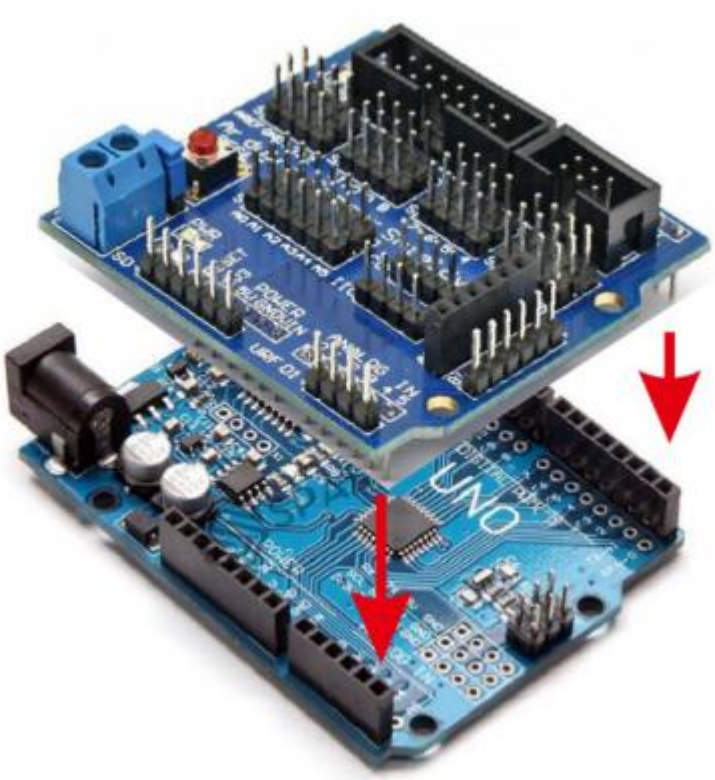
The wiring board can be easily connected to the steering gear and other equipment.

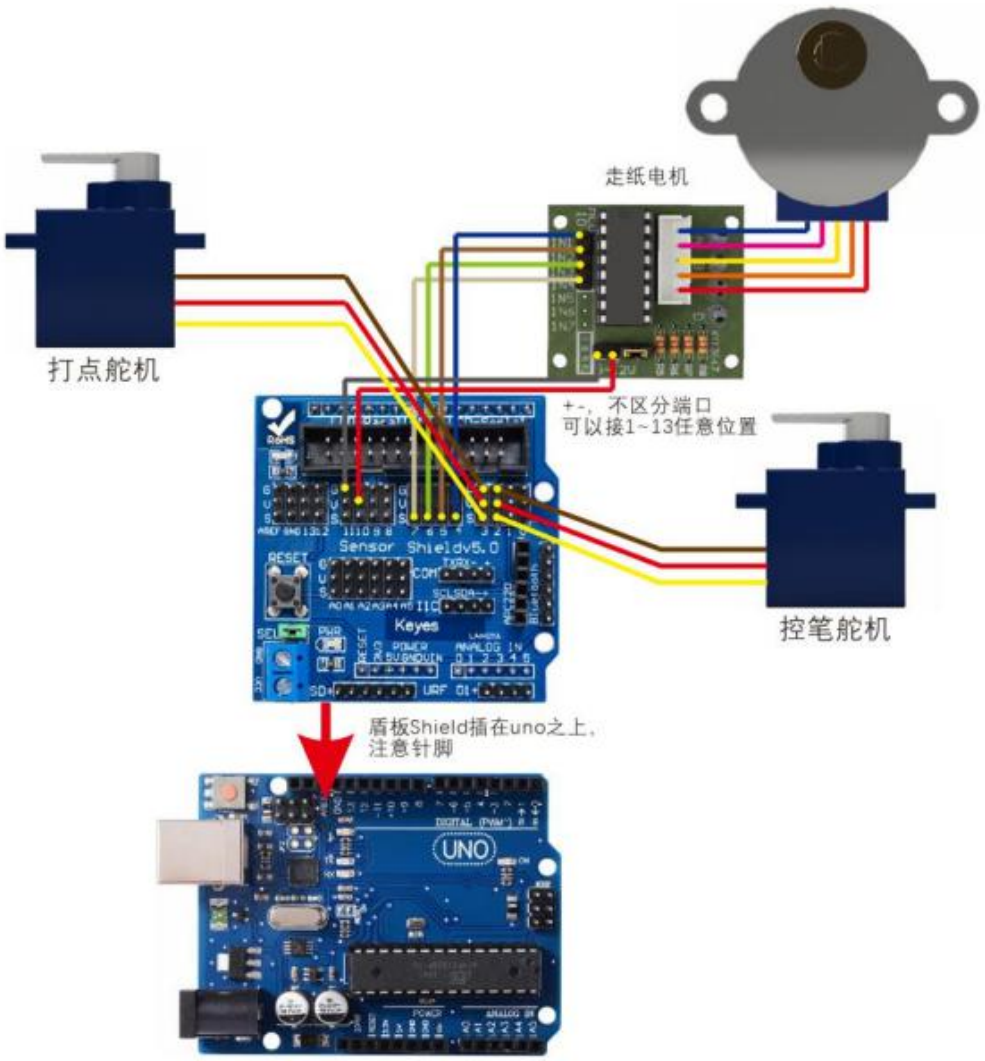
Shield pin number and UNO port one pair

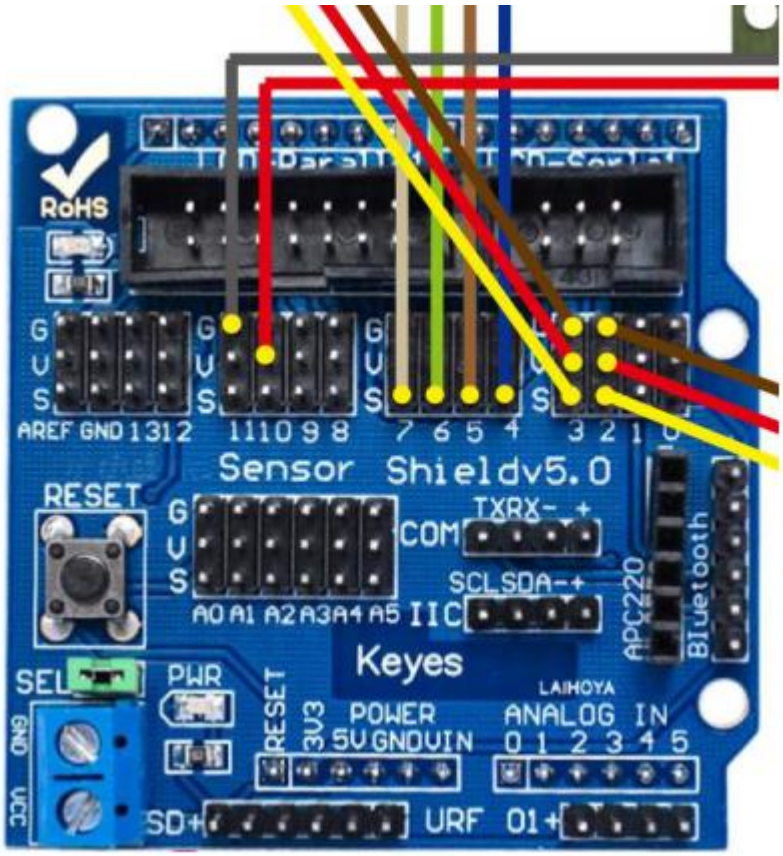
should. Each port has a GND (short for

G), VCC (V) and S signal connectors. no

Breadboard wiring is very convenient




走纸电机
打点舵机
+-，不区分端口
可以接1~13任意位置
控笔舵机
Sensor Shieldv5.0
Keyes
盾板Shield插在uno之上，
注意针脚
UNO

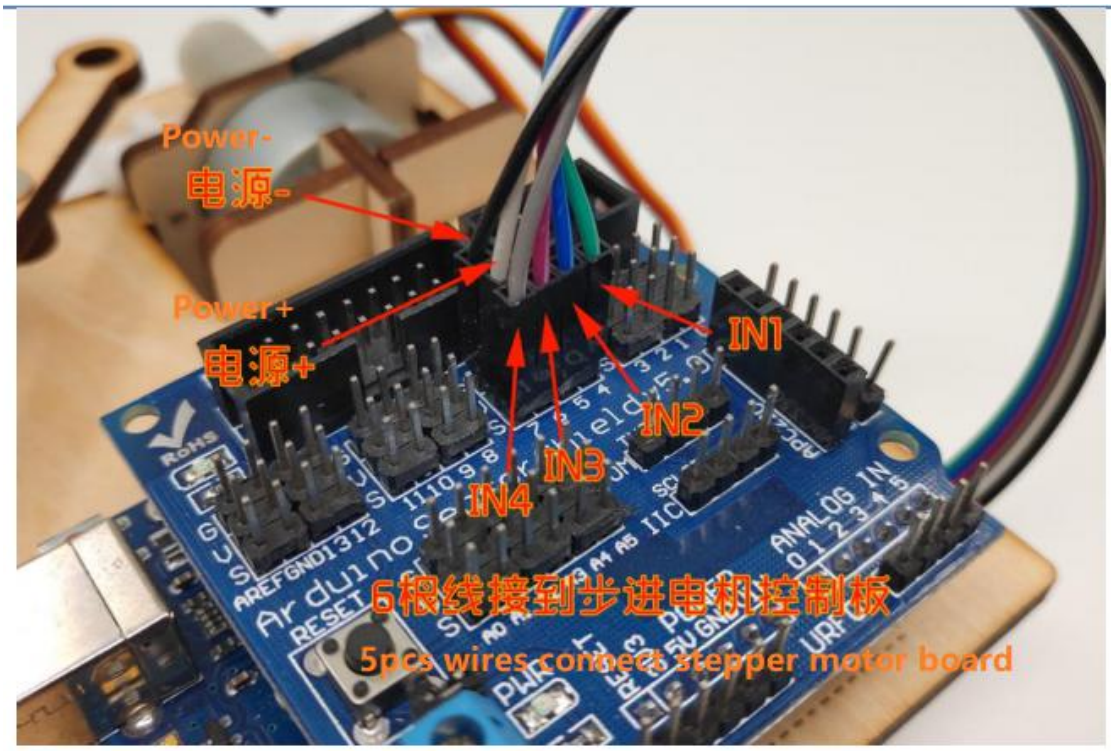


(Shield) Enlarged view of center position

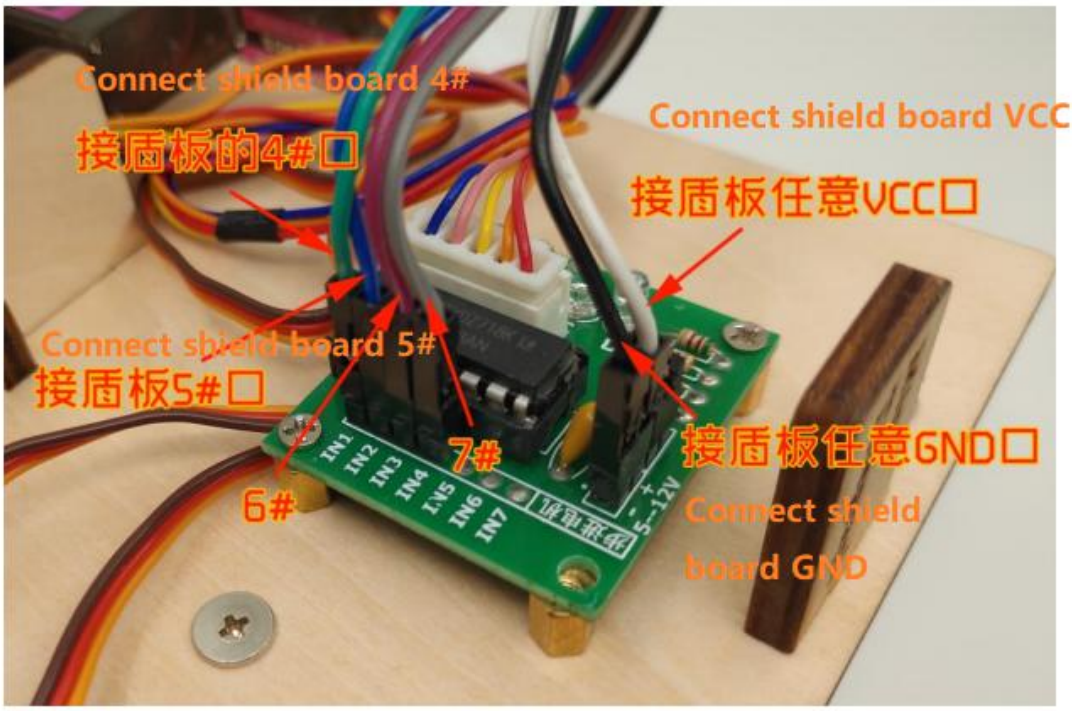
For the wiring position in the program, the VCC of all devices is connected to the power supply +, GND is connected to the power supply -, and the shield plate is directly connected to the corresponding
Port is fine

Pen steering gear 2# for writing (brown GND of the steering gear, red VCC, yellow is the signal) Dotted paper lifting steering gear 3#

Paper feeding stepper motor: 4 signal lines In1, In2, In3, In4 correspond to Arduino 4#, 5#, 6#, 7#, and +-di
The two wires of the power supply can be connected to any Vcc + (V) and Gnd-(G) pins on the shield board. Stepper motor to control
The wiring of the board is a special line plug, and the foolproof port can be inserted into it. The Bluetooth module TX corresponds to Arduino's RX 0# port, and the module RX is to Arduino TX 1# port (must be
Fork, if it is tx-tx, rx-rx cannot communicate) After the Bluetooth module is connected, the program cannot be flashed. You must first remove the Bluetooth module to flash the program normally. (The signal line of some Bluetooth modules is 3.3v and cannot be directly connected
The R and TX ports of Arduino need a step-down resistance of about 1KΩ, and the built-in protection circuit can be directly inserted in the shop.)

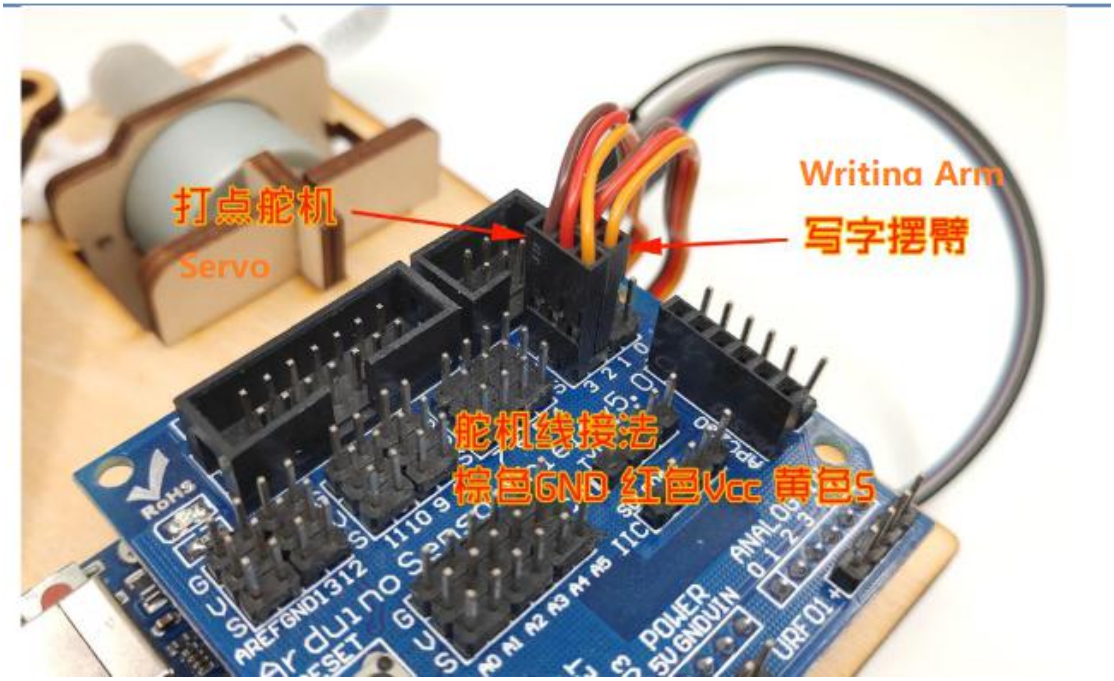


Stepper motor 4 signal 2 power cord connection

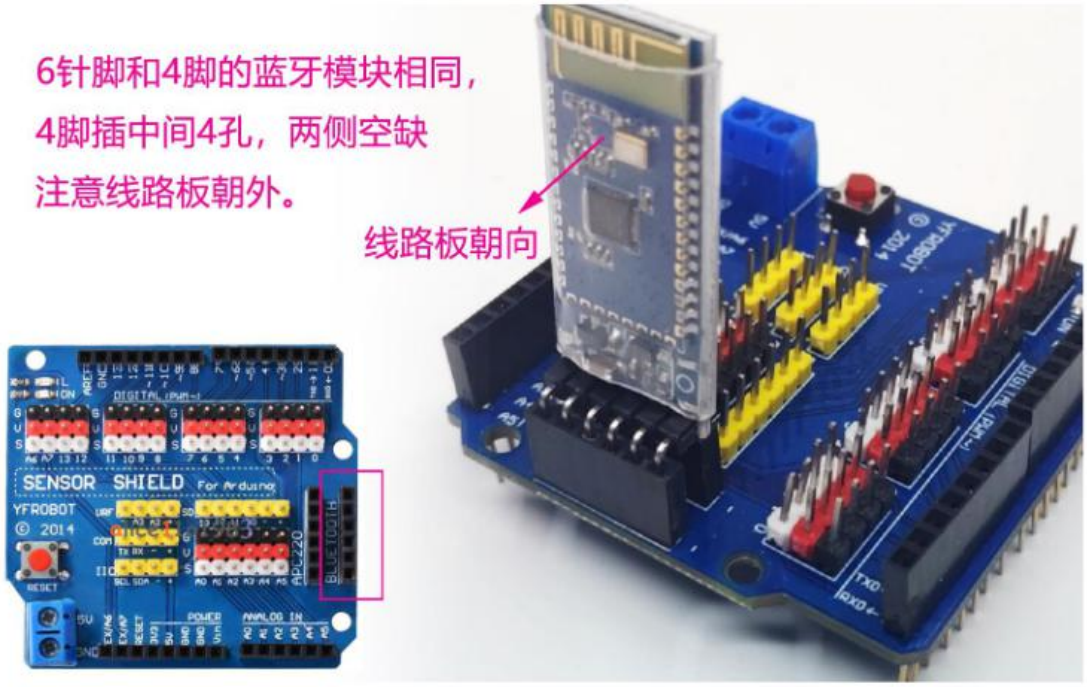


Stepping motor control board wire connection. The colors are just used to

be white or red VCC +, black GND -, and other colors are used for signals.



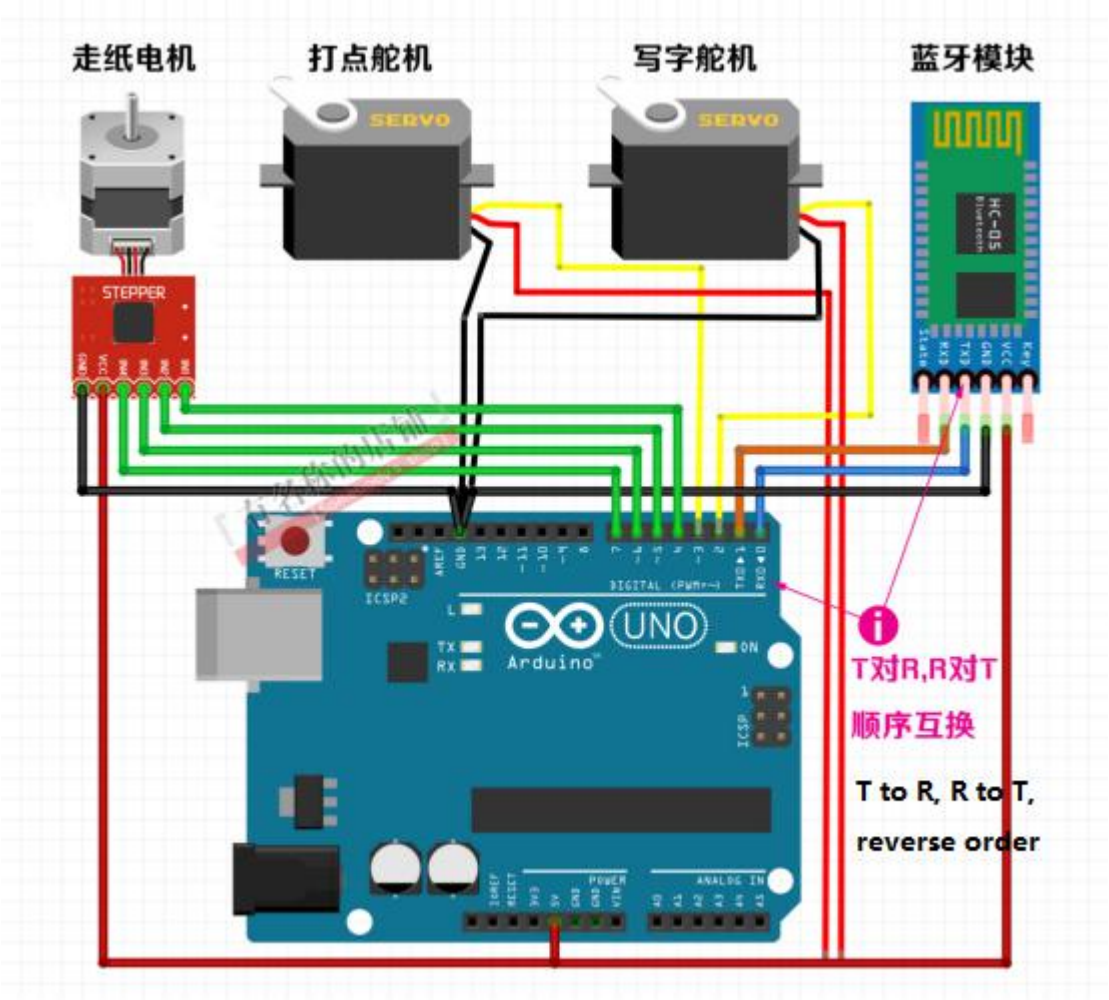
The wiring position of the servo, brown connects to GND, yellow connects to signal S, red in the middle VCC

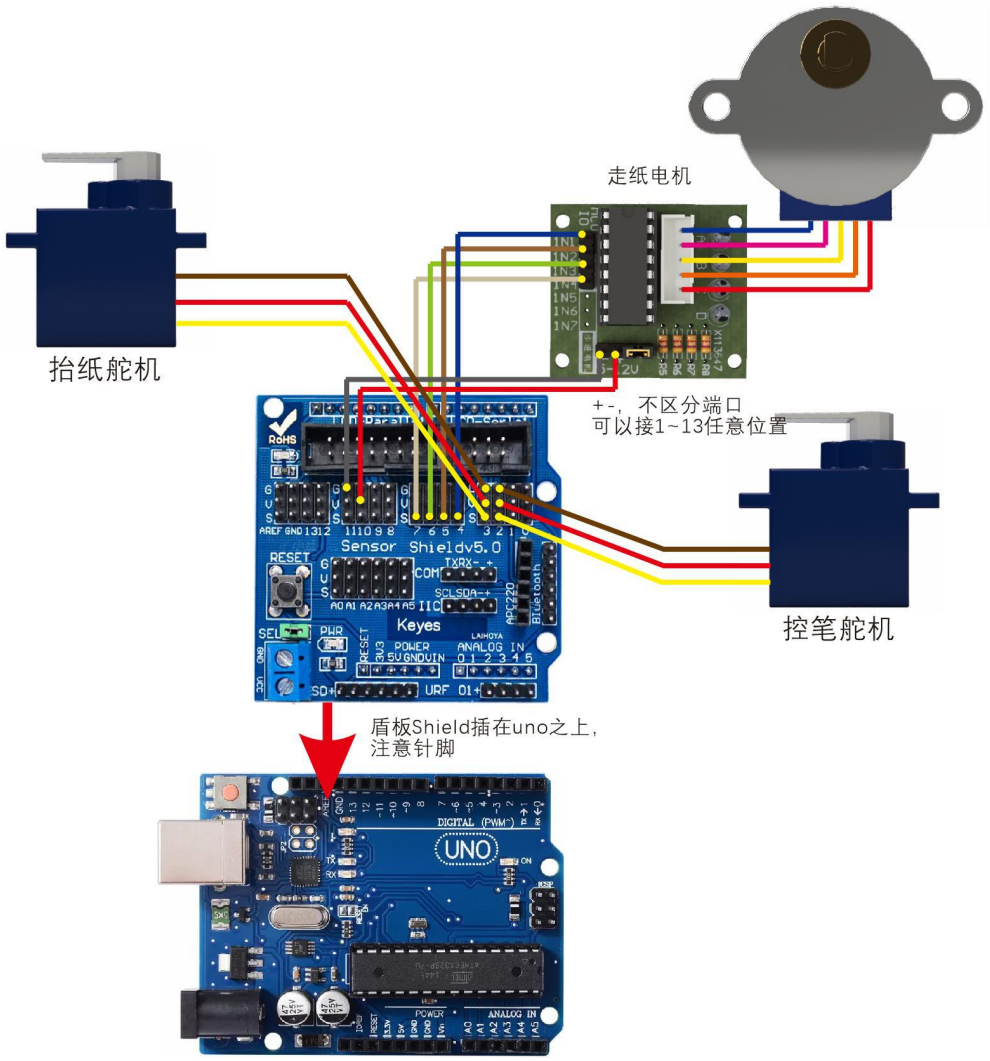


The Bluetooth interface of the shield board separately leads out the power supply and RX, TX and other interfaces, which does not conflict with the previous wiring method. Students who have a shield can directly plug in the Bluetooth interface of the shield. The Bluetooth module must be connected after flashing the program, otherwise the Bluetooth module occupies the serial port and the program cannot be flashed.

For the color shield version, the Bluetooth module can be plugged directly into the Bluetooth interface of the shield. Note that the circuit board faces outwards, and the 4-pin Bluetooth module is fully compatible with the 6-pin. Just insert the middle 4 holes on both sides. Ordinary shield board, because the Bluetooth interface is a pin that cannot be inserted directly (the 6-hole interface is APC220, do not confuse it), you can use DuPont cable to connect. The Bluetooth module is a physical replacement for the USB serial port, so there is no need to modify the program. There are many kinds of Bluetooth communication software in mobile APP, most of which can be used directly. As long as the mobile phone is connected to the module, the text can be sent directly with the App. For example, apps such as BluetoothTerminal or SerialBluetooth can be used. After connecting to Bluetooth, some software will automatically send some text due to communication needs, so the telegraph may print some text (mostly the name of the Bluetooth module) after it is connected, and it does not affect the use

Wiring


走纸电机
打点舵机
写字舵机
蓝牙模块
SERVO
SERVO
STEPPER
HC-05
RESET
ICSP2
UNO
Arduino
ON
ICSP
POWER
ANALOG IN
T对R,R对T
顺序互换
T to R, R to T,
reverse order


走纸电机
抬纸舵机
+-，不区分端口
可以接1~13任意位置
控笔舵机
盾板Shield插在uno之上，
注意针脚