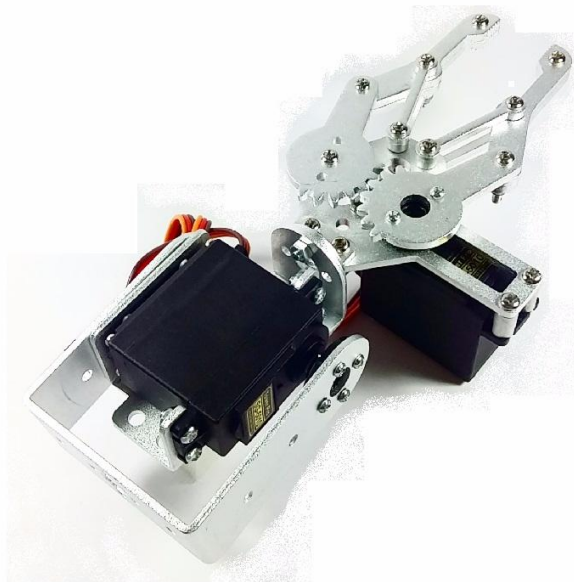


Robotic Arm 2 Degrees of Freedom Quickstart Guide



The Robotic Arm 2 Degrees of Freedom is a robotic arm kit that offers a manipulator claw and bracket made in aluminum. It has two degrees of freedom, one is for controlling the arm, the other the rotation of the arm. The kit is also easy to construct, and could be done by yourself.

HARDWARE SPECIFICATIONS

- Full aluminum alloy
- Supports 2 degrees of freedom
- Maximum clamp opening – 54 mm

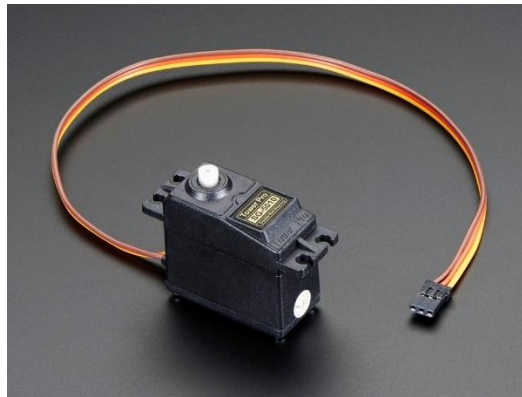
PARTS LIST

For this quickstart guide, we will need the following materials:

- 1 – Arduino Uno: <https://www.bitstoc.com/product/1/>
- SG5010 Servo Motor - <https://www.bitstoc.com/product/250/>
- Robotic Arm Kit - <https://www.bitstoc.com/product/256/>

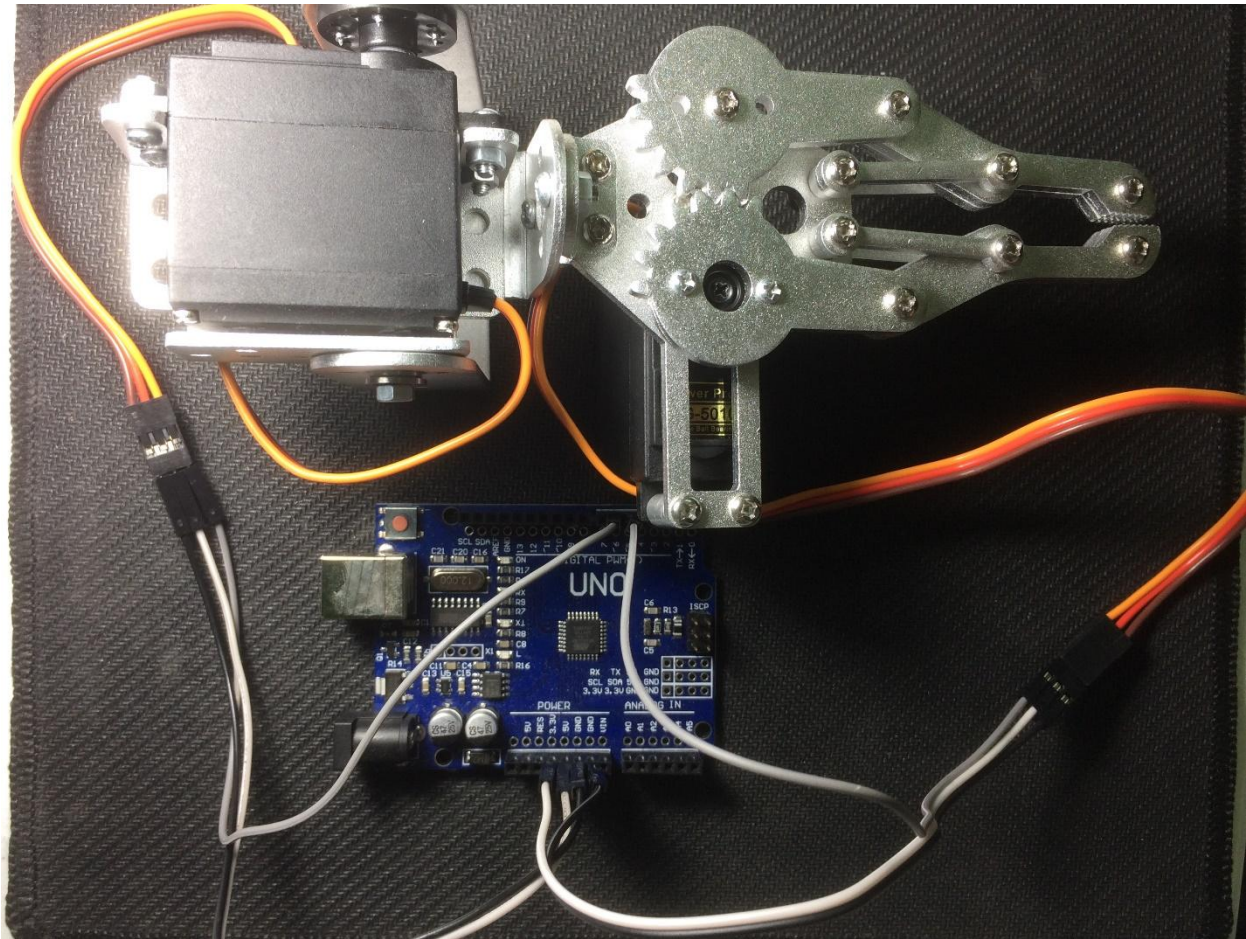
HARDWARE OVERVIEW

The SG-5010 servo motor has three pins: VCC, GND and PWM pin.



The table below describes the function of each pin in the module

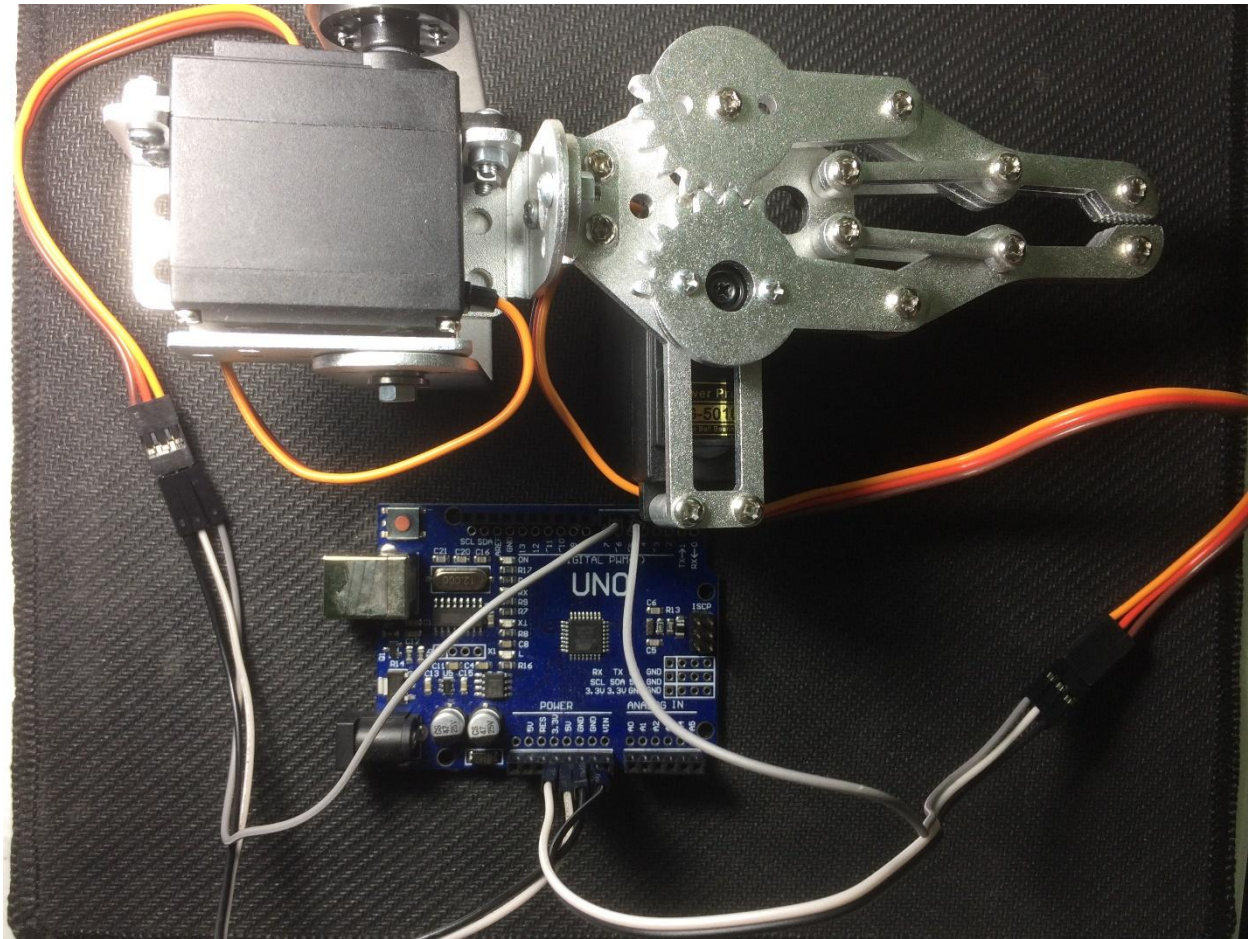
INPUT	Description
GND (Brown wire)	To be connected to the GND pin in a microcontroller.
VCC (Red wire)	Supplies power to servo motor. Can be connected to +5V or +3.3V supply.
OUTPUT	
PWM (Orange wire)	Controls rotation of the servo motor



WIRING CONNECTION

Connect the following pins to Arduino:

Servo Motor	Arduino
ARM	
Brown	GND
Red	5V
Orange	Pin 5
CLAMP	
Brown	GND
Red	3.3V
Orange	Pin 6



ARDUINO CODE

Open Arduino IDE. Copy the code below:

```
#include <Servo.h>

Servo hand; // create servo object to control a servo
Servo arm;

// twelve servo objects can be created on most boards

int posARM = 0; // variable to store the servo position
int posHAND = 0;

void setup() {
  hand.attach(5); // attaches the servo on pin 9 to the servo object
  arm.attach(6);
}

void loop() {
  for(posARM=70;posARM <=200 ; posARM +=1){
    arm.write(posARM);
    delay(20);
  }
```

```

//opening
for(posHAND=60;posHAND >=0 ; posHAND -=1){
    hand.write(posHAND);
    delay(20);}
delay(200);

//closing
for(posHAND=0;posHAND <=60 ; posHAND +=1){
    hand.write(posHAND);
    delay(20);}

for(posARM=200;posARM >=70 ; posARM -=1){
    arm.write(posARM);
    delay(20);
}
//opening
for(posHAND=60;posHAND >=0 ; posHAND -=1){
    hand.write(posHAND);
    delay(20);}
delay(200);

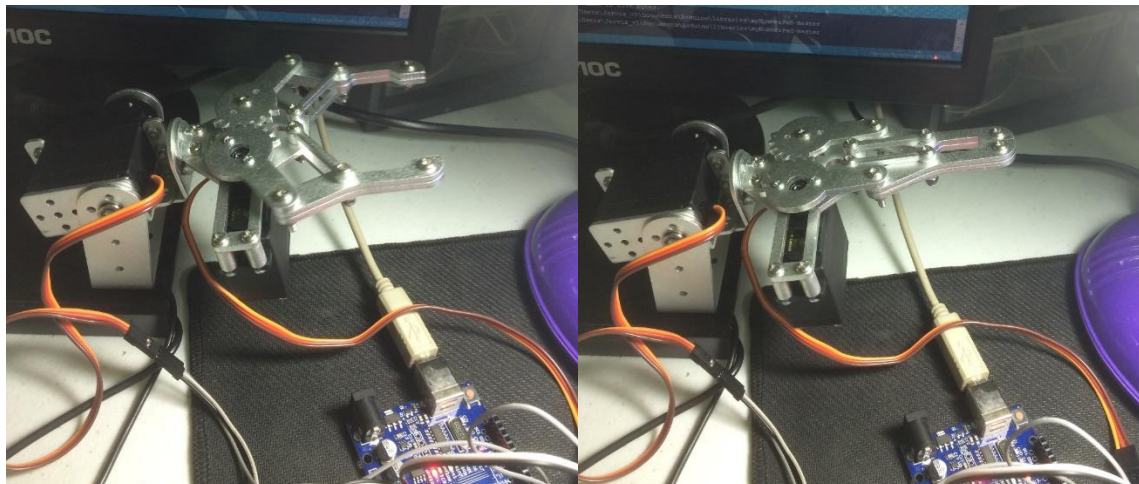
//closing
for(posHAND=0;posHAND <=60 ; posHAND +=1){
    hand.write(posHAND);
    delay(20);}
}

```

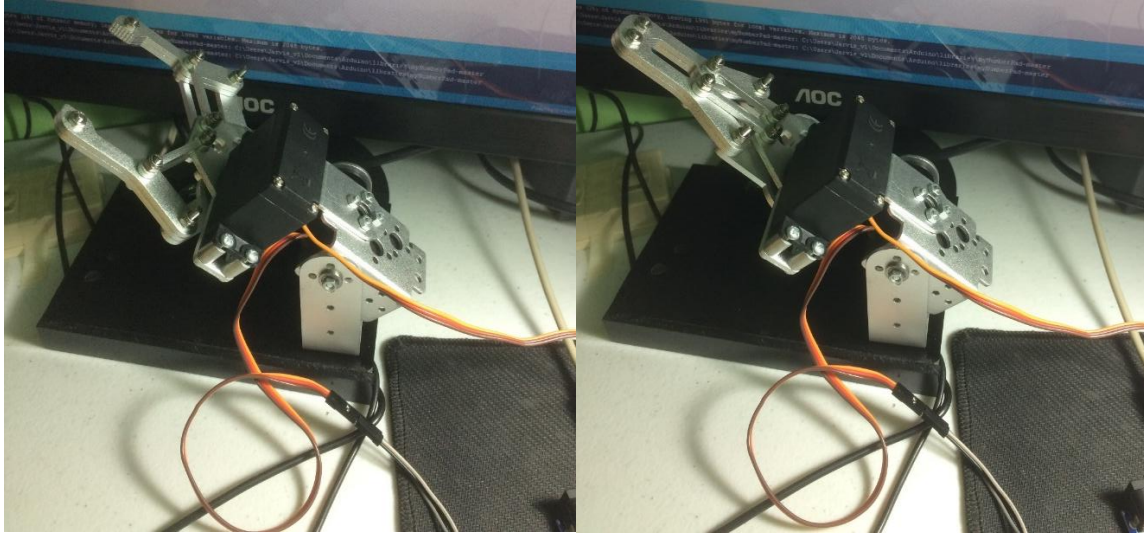
Upload the code.

OUTPUT

After uploading, the arm servo goes to position 0, while the hand opens. It then closes after fully opening the clamp.



The arm rotates backwards. The clamp then opens and closes.



APPLICATIONS

You can find more uses of the relay in the sample projects below:

Robotic Arm Arduino Controlled by Evil zoids:

<https://www.instructables.com/id/ROBOTIC-ARM-Arduino-Controlled/>

Otto DIY + Arduino Bluetooth Easy to 3D Print by Otto Builders:

https://create.arduino.cc/projecthub/ottoplus/otto-diy-arduino-bluetooth-robot-easy-to-3d-print-33406c?ref=tag&ref_id=robot&offset=1