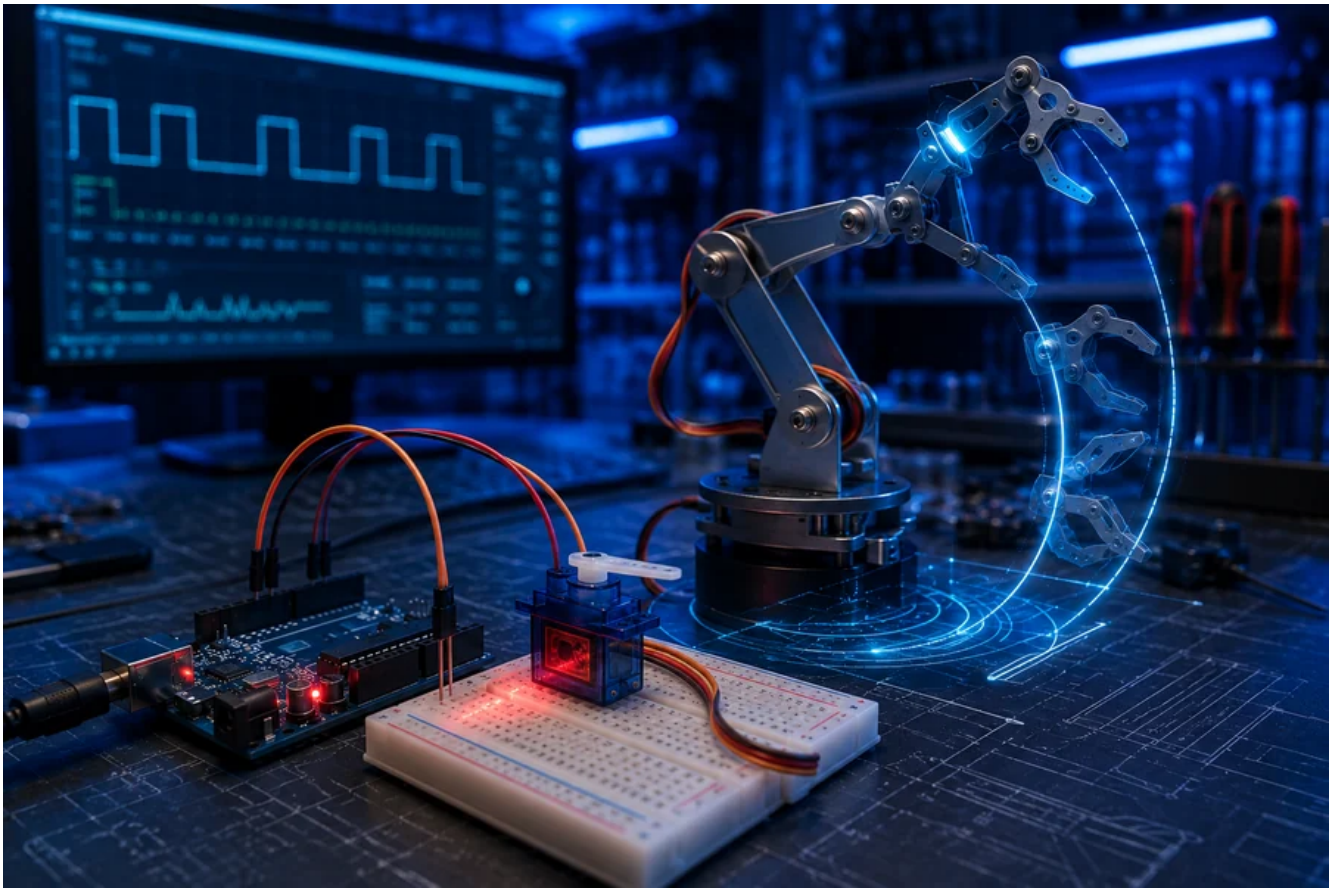
Arduino SG90 Servo Motor Lab Manual

Printable pinout, wiring, code, build steps, expected results, and troubleshooting for every Arduino tutorial on the WolfieWeb Arduino page.

Arduino SG90 Servo Motor Lab Manual



Goal: Control motion by commanding servo angles from code.

Pin Codes and Wiring Map

Part / Lead	Arduino Pin / Connection	Purpose
Servo red	5V	Power
Servo brown/black	GND	Ground
Servo orange/yellow	D9	Signal/control
External 5V supply GND	Arduino GND	Required if using separate servo power

Step-by-Step Build Instructions

Step 1: Connect servo ground before signal. A missing ground causes jitter and random motion.

Step 2: Connect servo signal to D9. Use the Servo library instead of trying to manually time pulses.

Step 3: Upload a sweep sketch and keep fingers clear of the horn.

Step 4: Test 0, 90, and 180 degrees. If the mechanism binds, lower the angle range.

Step 5: If the Arduino resets, power the servo from a separate 5V supply and tie grounds together.

Expected Result

The servo moves smoothly between commanded angles. A light hum is normal; violent buzzing means binding or weak power.

Troubleshooting

Problem	What to check
Servo twitches	Power is weak, signal wire loose, or ground not shared.
Servo does not move	Signal pin does not match code or servo connector is reversed.
Arduino resets	Servo current draw is too high for USB power.

Arduino Code

```
#include <Servo.h>
Servo myServo;

void setup() {
myServo.attach(9);
}

void loop() {
myServo.write(0); delay(700);
myServo.write(90); delay(700);
myServo.write(180); delay(700);
}
```

Scan the QR code on the package README or visit www.wolfieweb.com/works01.html for the live tutorial page.