

Using a servo motor with an Arduino Uno is quite simple. Here's a step-by-step guide to get you started:

Components Needed:

- Arduino Uno
- Servo motor (e.g., SG90)
- Jumper wires
- External power supply (optional, depending on the servo motor)

Servo Motor Connections:

1. **Power (Red Wire):** Connect the red wire of the servo motor to the 5V pin on the Arduino.
2. **Ground (Brown or Black Wire):** Connect the black or brown wire of the servo to the GND pin on the Arduino.
3. **Control Signal (Orange or Yellow Wire):** Connect the orange/yellow wire (signal) of the servo to one of the PWM-enabled pins on the Arduino (typically pin 9 or 10).

Code to Control the Servo Motor:

Arduino has a built-in `Servo` library that makes controlling the servo motor very easy.

1. **Install the Servo Library:** The Servo library comes pre-installed in the Arduino IDE. If for some reason it's not available, you can install it from the library manager.
2. **Sample Code:** Here's an example code to rotate the servo motor from 0 to 180 degrees and back.

Explanation:

- `Servo myServo;` Creates an instance of the Servo class.
- `myServo.attach(servoPin);` Attaches the servo motor to the specified pin (here, pin 9).
- `myServo.write(angle);` Moves the servo to the specified angle (0 to 180 degrees).
- `delay(15);` Gives the servo time to move to the position.

Power Considerations:

If you're using a larger servo motor that draws more current, it's recommended to power the servo using an external power supply rather than directly from the Arduino's 5V pin. Ensure the ground of the external power supply and Arduino are connected. Let me know if you need any adjustments for your specific project!