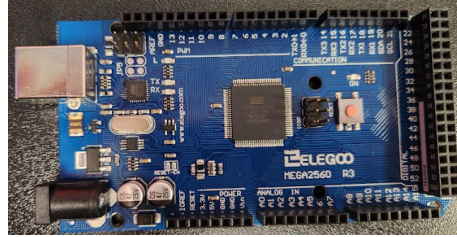Hello! Welcome to your guide for connecting the Large 60mm White Arcade Button with LED (Product ID: 1192) to the Elegoo Mega2560. Don't worry if you've never done any electronics before! We'll go slowly and explain everything clearly.

What You'll Need

1. Elegoo Mega2560 R3 microcontroller board

2. USB cable for the Mega2560
3. Large Arcade Button with LED - 60mm White button (Product ID: 1192)
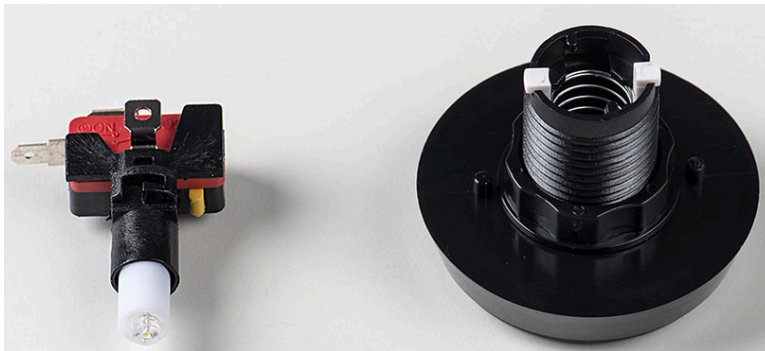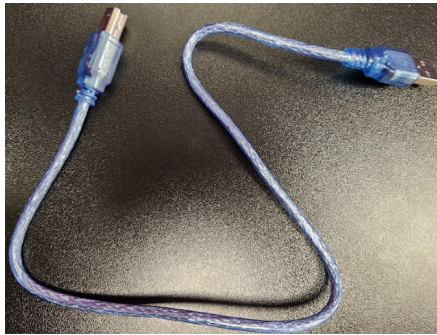
4. Jumper Wires

Step 1: Understanding Your Buttons

The Button Housing

This is the outer shell that you press.

Inside the long, narrow channel is a spring mechanism that allows the button to return to its original position after being pressed.

The LED and Switch Assembly

This part combines the LED light and electrical switch into one integrated unit. Do not attempt to separate them.

You'll notice four metal prongs on the LED/Switch:

- The front prong is short and covers the word "COM".

- The opposite prong (same size and orientation) is on a black surface instead of blue.

- The third prong extends from the right side when viewed in the first orientation.
- The fourth prong is located on the bottom, also pointing to the right.

Step 2: Wiring Each Button

Now that you've identified the components, it's time to wire the button correctly to the Elegoo Mega.

1. Connect the short front pin (the one covering the word "COM") to Ground (GND) on the Elegoo Mega. This is the ground for the LED.
2. Connect the bottom prong on the LED/Switch to Ground (GND) on the Elegoo Mega as well. This is the ground for the switch.
3. Connect the side prong that juts out to the right (as viewed in the first orientation) to digital pin 2 on the Elegoo Mega. This is for teh switch.
4. Connect the opposite prong (the one opposite the "COM" pin) to digital pin 8 on the Elegoo Mega. This is for the LED.

Once everything is connected, upload and run the test code below. The LED should light up brightly when functioning correctly.

⚠️ If the LED appears dim or doesn't light up as expected, you may have mismatched the prong connections. Double-check your wiring and compare it to these instructions before testing again.

Step 3: Connecting to Your Computer

With your button wired correctly, you're ready to connect and test it using the Arduino IDE.

1. Plug in the USB cable by connecting one end to your Elegoo Mega 2560 and the other to your computer.
2. Open the Arduino IDE.
3. Copy and paste the sample test code (provided below).
4. Compile and upload the code to your Mega2560 board.

Once the upload is complete, observe your button and LED to ensure they're functioning as expected.

Step 4: Adding the Button Housing

Once your LED/Switch is wired and tested, it's time to attach the button housing.
1. Align the grooves on the button housing with the empty spaces on the LED/Switch.
2. Carefully fit the button onto the LED/Switch, making sure the components match up.
3. Rotate the button so that the white part sits directly above the orange tab on the LED/Switch.
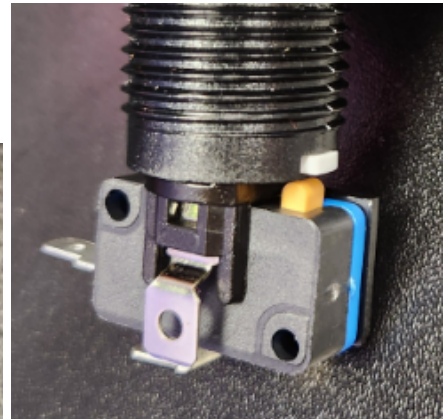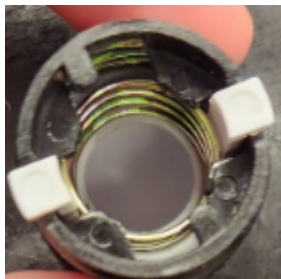
Sample Arduino IDE Code

```
const int buttonPin = 2;   // Button connected to pin 2
const int ledPin = 8;      // LED connected to pin 8
int buttonState = 0;

void setup() {
  pinMode(buttonPin, INPUT_PULLUP); // Enable internal pull-up resistor
  pinMode(ledPin, OUTPUT);

  digitalWrite(ledPin, HIGH); // LED starts ON
}

void loop() {
  buttonState = digitalRead(buttonPin);

  if (buttonState == LOW) {
    // Button pressed → turn LED OFF
    digitalWrite(ledPin, LOW);
  } else {
    // Button not pressed → LED ON
    digitalWrite(ledPin, HIGH);
  }
}
```