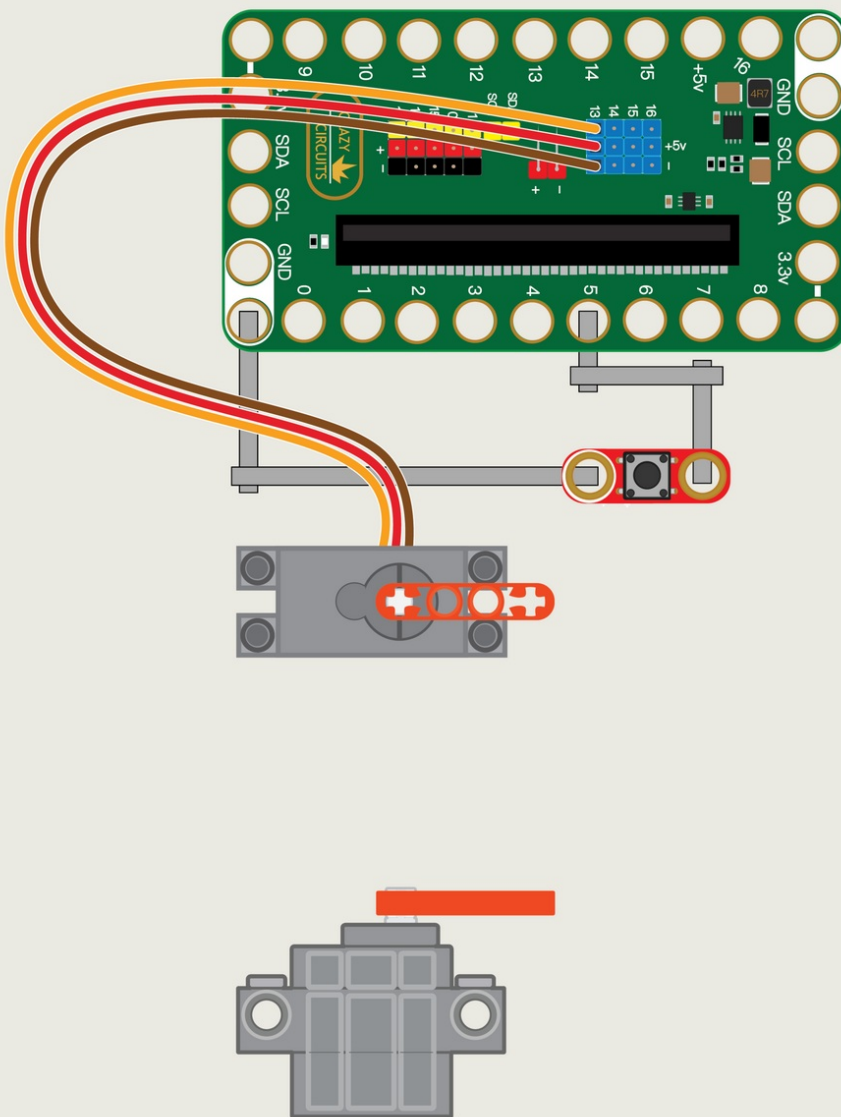




CH25-E - Servo Selector List Better V1

Connect a 270° Servo to a Bit Board and control it with a Pushbutton and code.

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INTRODUCTION

Connect a 270° Servo to a Bit Board and control it with a Pushbutton and code.

We'll explore using a momentary push button (and some code) to control the movement of a servo motor.



TOOLS:

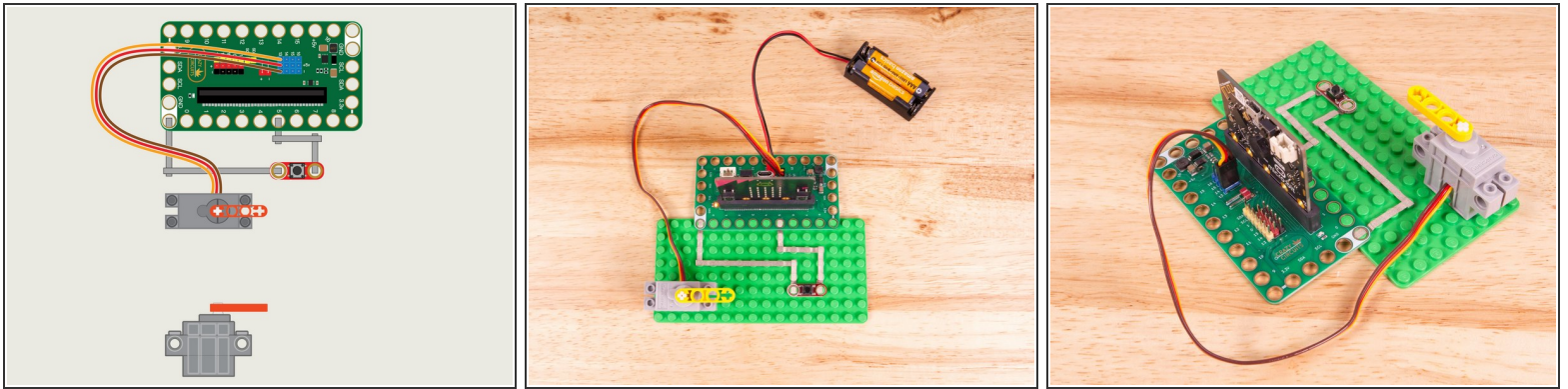
- [Computer](#) (1)
- [Scissors](#) (1)



PARTS:

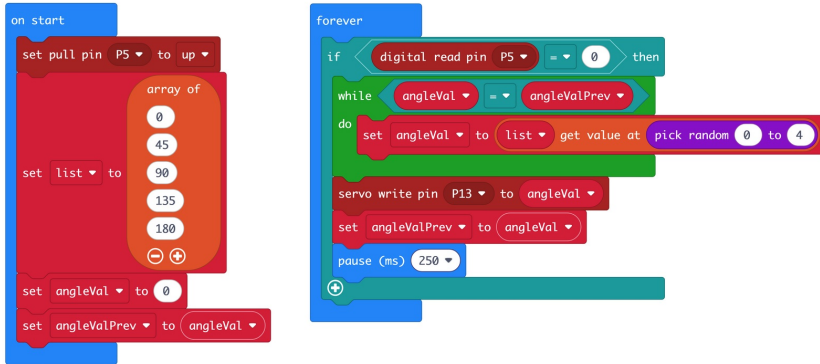
- [Crazy Circuits Bit Board](#) (1)
 - [micro:bit](#) (1)
 - [Brick Compatible 270 Degree Servo](#) (1)
 - [Standard Pushbutton Chip](#) (1)
 - [Maker Tape](#) (1)
- 1/8" Wide

Step 1 — Connect the 270° Servo and Button



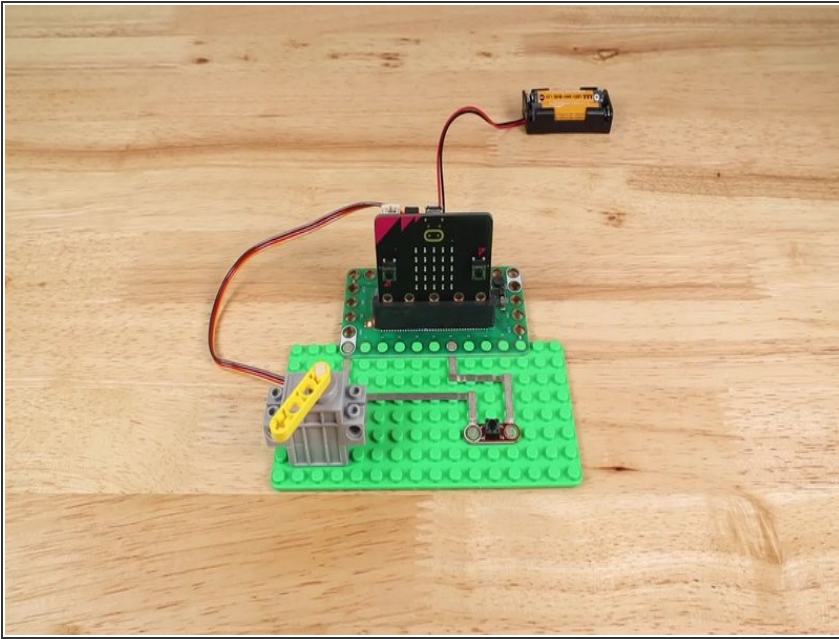
- The **270 Degree Servo Motor** has a 3-wire connector on the end that can plug directly into the pins on the back of the Bit Board.
- Make sure the **Orange Wire** is closest to the number **13** for the **Pin 13** column.
- Then the **Brown Wire** should be closest to the micro:bit (in the - row) and the **Red Wire** will be in the middle (the **+5v** row).
- Connect the Button with **Maker Tape**, with one side to **Pin 5** and the other to **GND**.

Step 2 — Load the Code



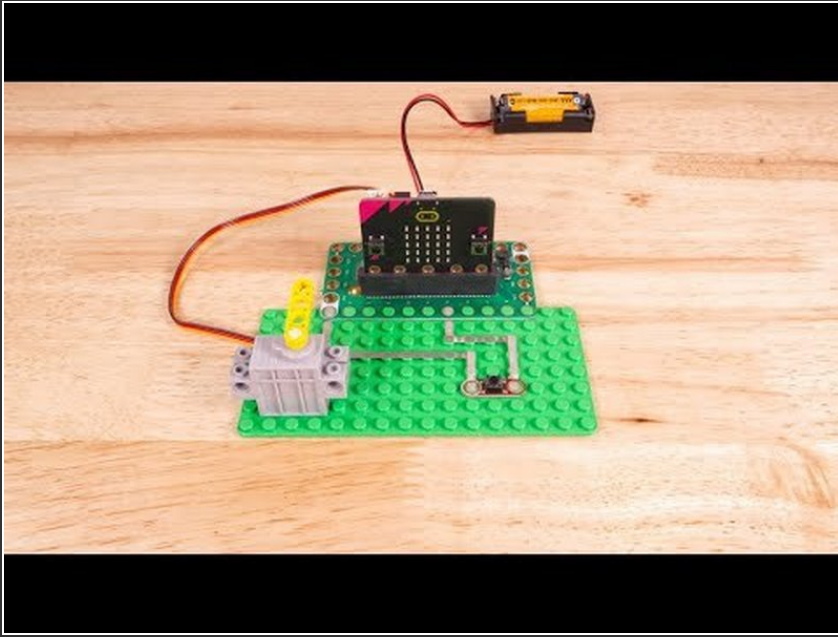
- If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V2 Setup and Use](#)
- We're going to load the following code for our **Servo Selector List Better V1** program: https://makecode.microbit.org/_dxJ0jxiC4...
- We've added a slight improvement to the previous version... This time we keep track of the last angle in the angleValPrev variable so we can check if the new angle is the same as the last one.
- This means we won't get the same value twice in a row, which would result in the servo not moving.
- We use a simple while loop and keep getting a new value for angleVal until we have one that *is not equal to* angleValPrev.

Step 3 — Test it Out!



- Once the code is loaded it should start running immediately, but the servo won't move until you press the button.
- ① You can power the micro:bit via the USB cable you used to load the code, but now that we are using servos we recommend using a battery pack plugged into the Bit Board.
- ★ The **Blue Pins** on the Bit Board provide extra power (5 volts instead of 3 volts) by **boosting the voltage** coming from the battery pack. This helps improve servo performance, especially with multiple servos.
- When the button is pressed the servo will move to a position.
- But this time you won't run into the "bug" where you press the button and the servo does not move.
- ① A "bug" is a feature in a computer program that causes undesired consequences. If you press the button and the servo does **not** move when you expect it to that would be considered a **bug**.

Step 4 — Follow Along



- Follow along with our recorded Live Stream!
- ① You can watch the full video of us walking through this project, along with explaining and exploring the code:
<https://www.youtube.com/live/Og8T6cw5Ai0>