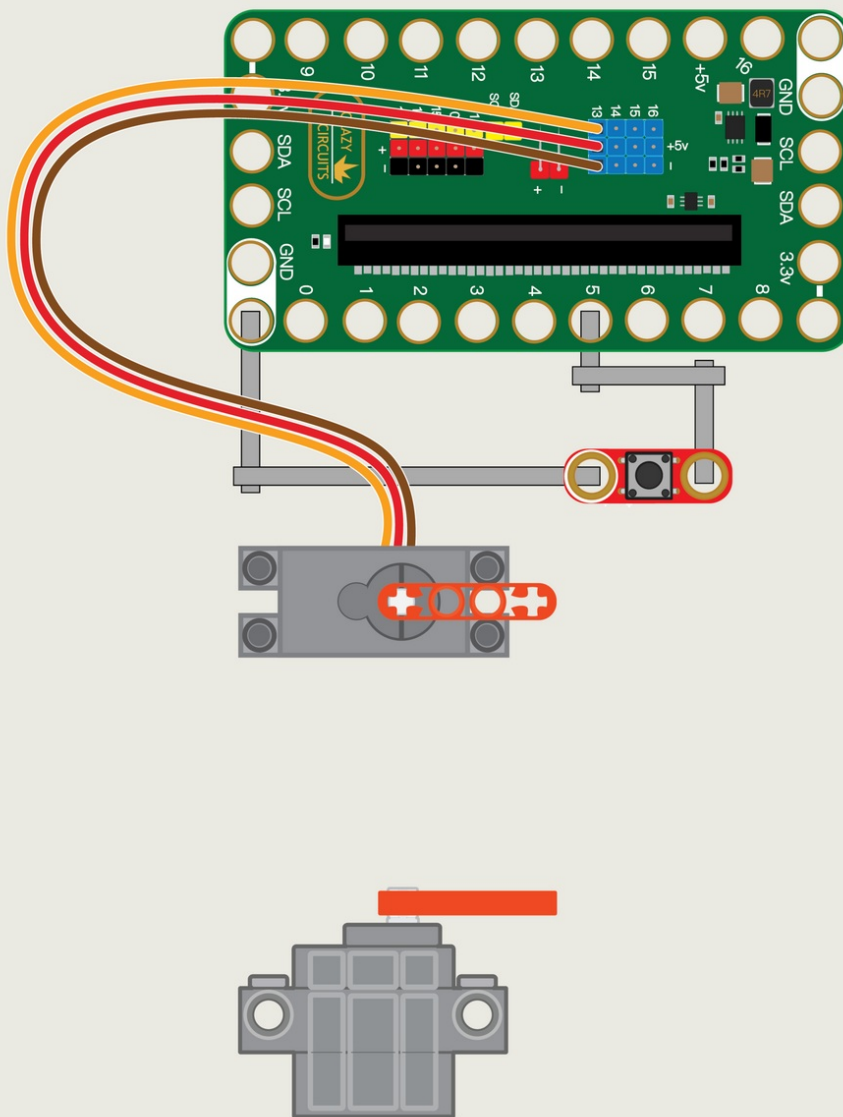




CH25-F - Servo Selector List Better V2

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:

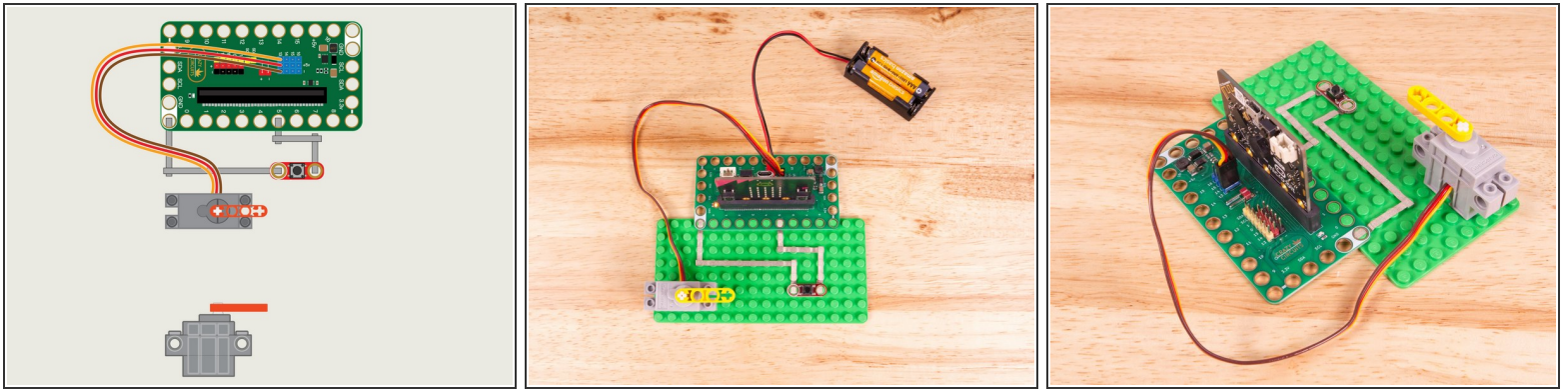
- [Computer](#) (1)
- [Scissors](#) (1)



PARTS:

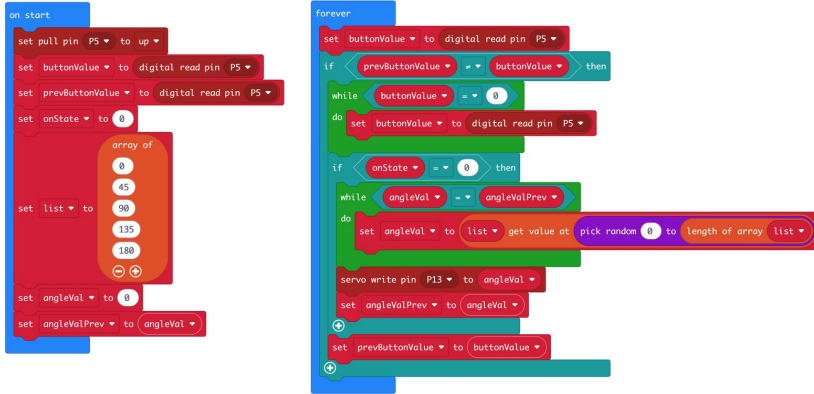
- [Crazy Circuits Bit Board](#) (1)
 - [micro:bit](#) (1)
 - [Brick Compatible 270 Degree Servo](#) (1)
 - [Standard Pushbutton Chip](#) (1)
 - [Maker Tape](#) (1)
- 1/8" Wide

Step 1 — Connect the 270° Servo and Button



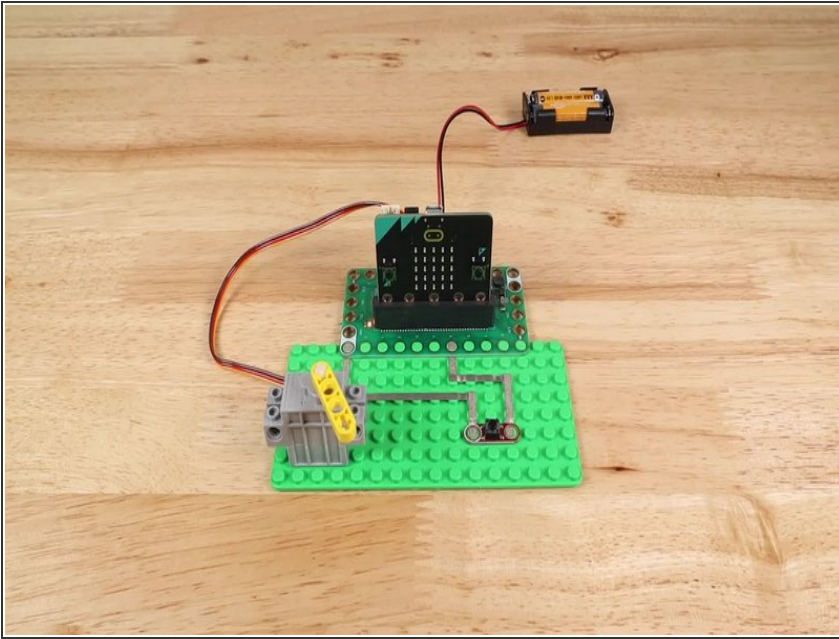
- The **270 Degree Servo Motor** has a 3-wire connector on the end that can plug directly into the pins on the back of the Bit Board.
- Make sure the **Orange Wire** is closest to the number **13** for the **Pin 13** column.
- Then the **Brown Wire** should be closest to the micro:bit (in the - row) 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



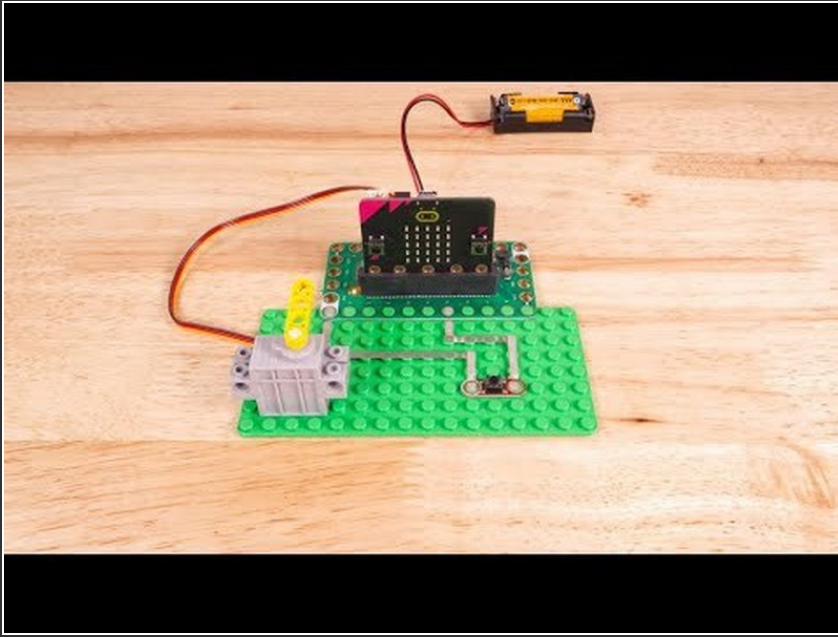
- If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V2 Setup and Use](#)
- We're going to load the following code for our **Servo Selector List Better V2** program: https://makecode.microbit.org/_fuaU6bXKP...
- We have two more improvements to our code...
- The first one is simple. Where we choose our random value from the list we now use length of array instead of a hardcoded value for the length of the list. This allows us to easily change the length of the list without having to change the pick random values.
- The second improvement is a little more complex. One of the bugs in the previous guide allows you to just press and hold the button and the servo would continually move and never stop...
- This time we're tracking when the button is **pressed** and when it is **released**. This allows is to only move the servo *when the button is released*.

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.
- ⓘ 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 **and then released** the servo will move to a position.
- With this version holding down the button continually will have no effect. The servo will only move after the button has been **pressed and then released**.

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>