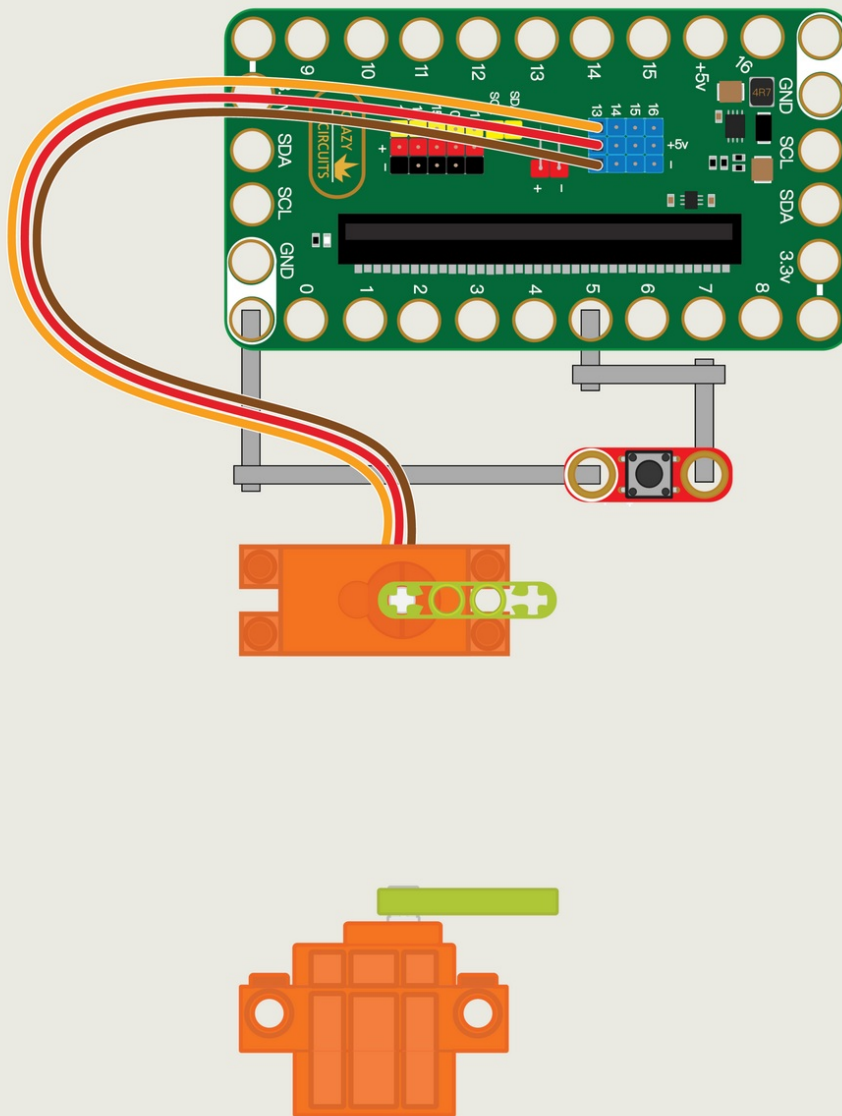




CH28-D - 360 Servo Button Spinner

Connect a 360° Servo to a Bit Board and control it with a Pushbutton and code.

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INTRODUCTION

Connect a 360° Servo to a Bit Board and control it with a Pushbutton and code.

We'll explore code to control the movement of a continuous rotation (360 degree) servo motor using a button.



TOOLS:

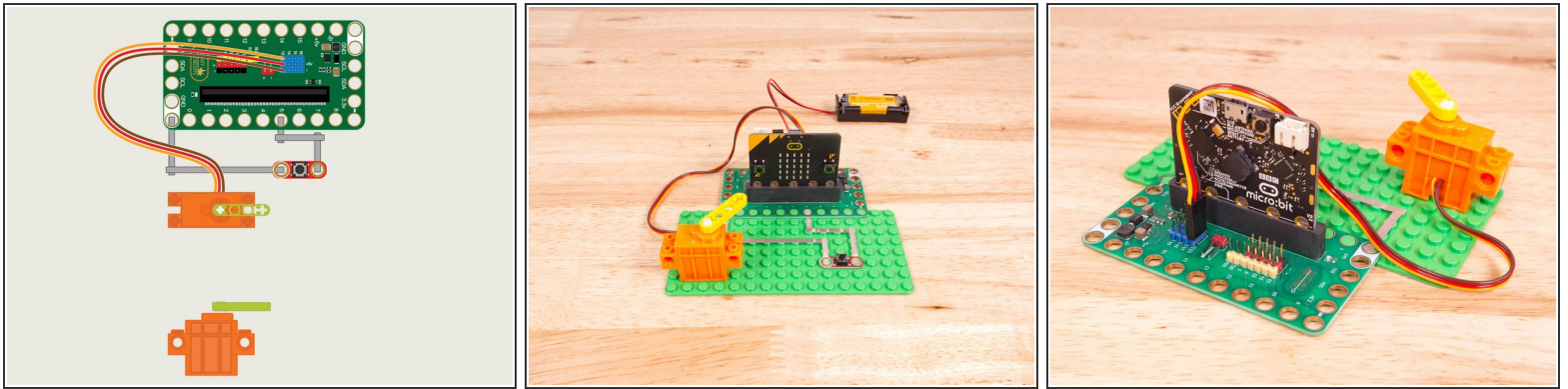
- [Computer](#) (1)
- [Scissors](#) (1)



PARTS:

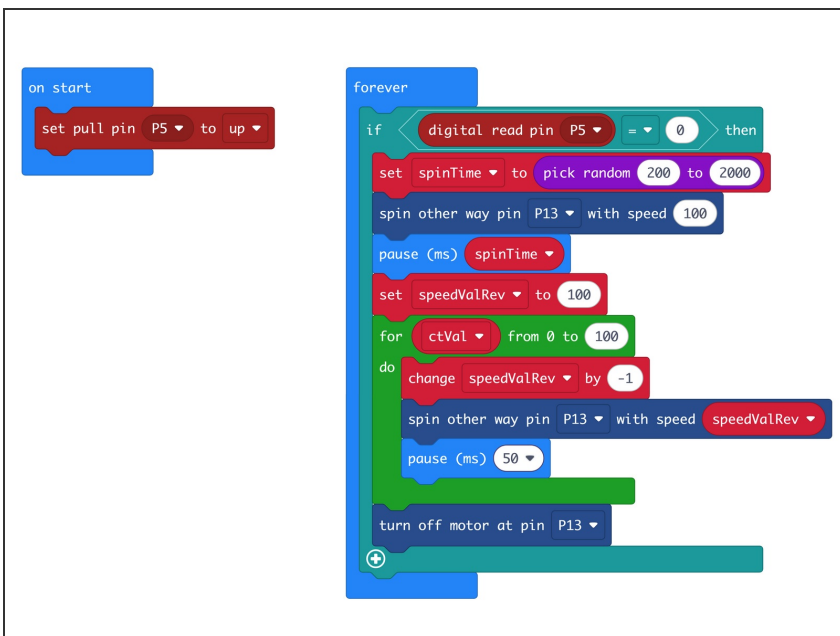
- [Crazy Circuits Bit Board](#) (1)
- [micro:bit](#) (1)
- [Brick Compatible 360 Degree Servo](#) (1)
- [Standard Pushbutton Chip](#) (1)

Step 1 — Connect the 360° Servo and Pushbutton



- The **360 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**.

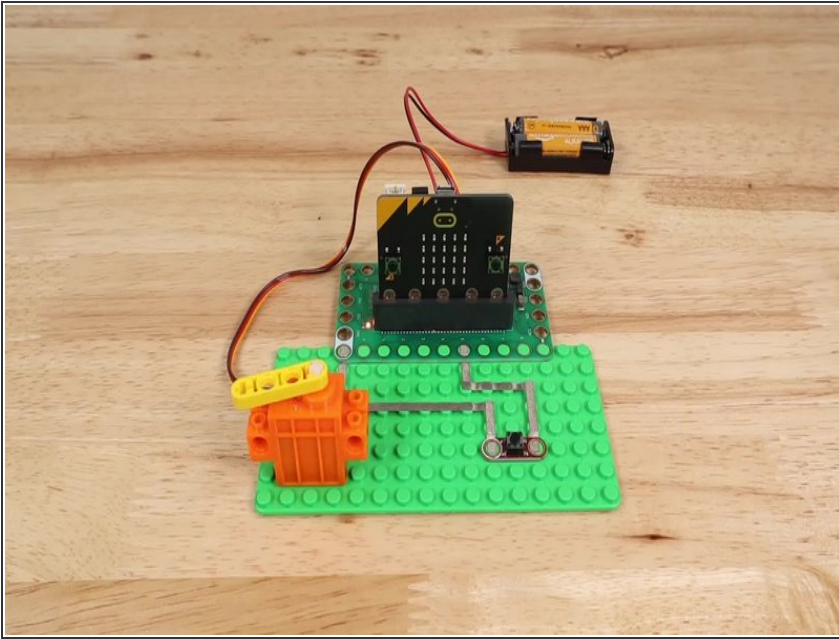
Step 2 — Load the Code



- If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V2 Setup and Use](https://makecode.microbit.org/_fyhFiEguq...)
- We're going to load the following code for our **360 Servo Button Spinner** program: https://makecode.microbit.org/_fyhFiEguq...

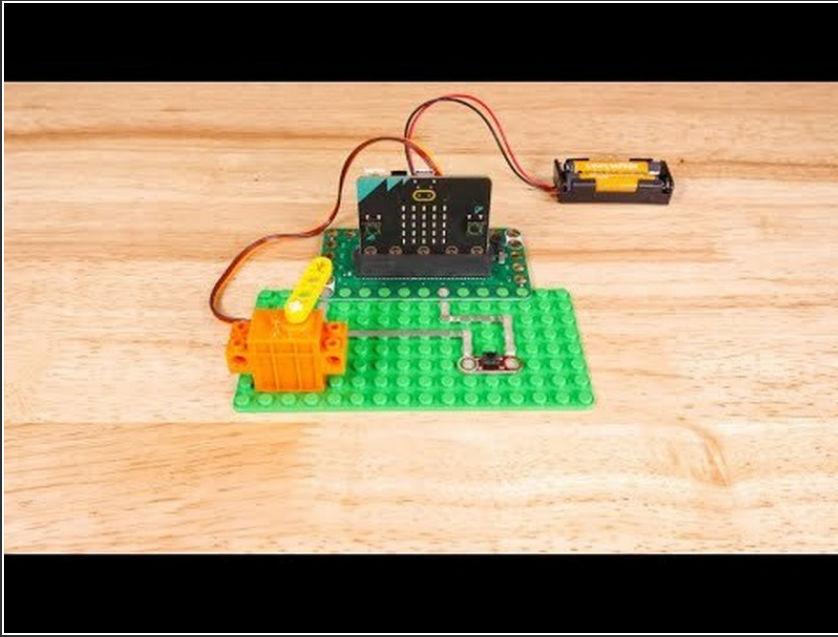
- We'll get our button all set in the start block by setting it to **up** so when the button is shorted to GND (ground) or "pulled down" we can read the state.
- For this program everything happens in the forever block once the button is pressed.
- When the button is pressed we'll set the **spinTime** variable to a value between **200** and **2000**, then start the motor spinning, and wait for the amount of milliseconds specified by **spinTime**.
- When the pause is over we'll set our **speedValRev** to **100** and then do a for loop where we slowly lower the speed of the motor.
- Finally, we'll stop the motor completely with the turn off motor block.

Step 3 — Test it Out!



- Once the code is loaded it should start running immediately, though nothing will happen 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.
- Press the button and the servo will spin for a. random amount of time before it starts to slow down and eventually stop.
- ① This could be used as a electronic version of a **game spinner**. Instead of flicking the spinner with your finger you can press a button!

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://youtube.com/live/HcgJJ8a2K>
[I](#)