

# Lab 7 – Output: Servo Motors

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INFOSYS 290-13/ CNM 290-1: Design and Theory of Tangible User Interfaces

Date: Thursday, October 11, 2007

## In Lab Exercise

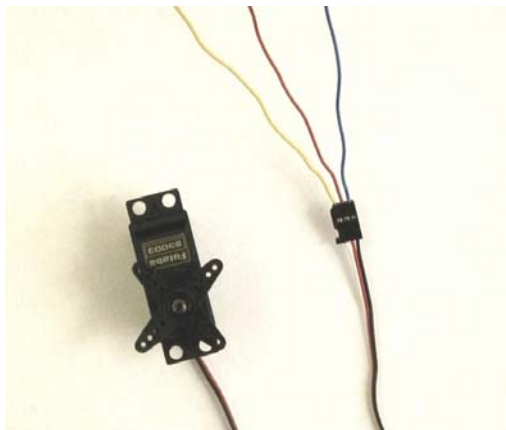
### Objective

Using the servo motor to explore rotational and linear motions.

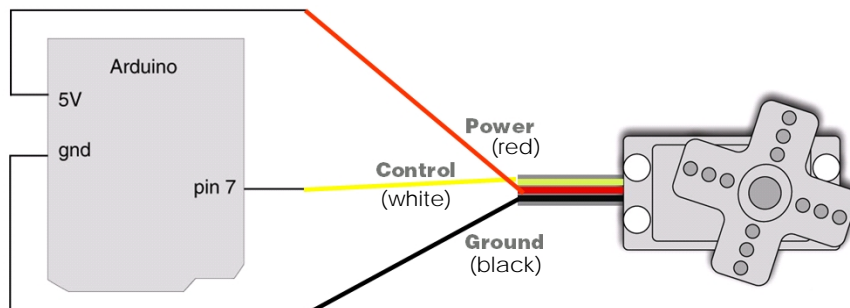
### Activities

#### Part 1 – The Servo Motor

1. Connect jumper wires to the servo motor. Also add a colorful wire marker to one of the servo horns so you can easily identify the turn.

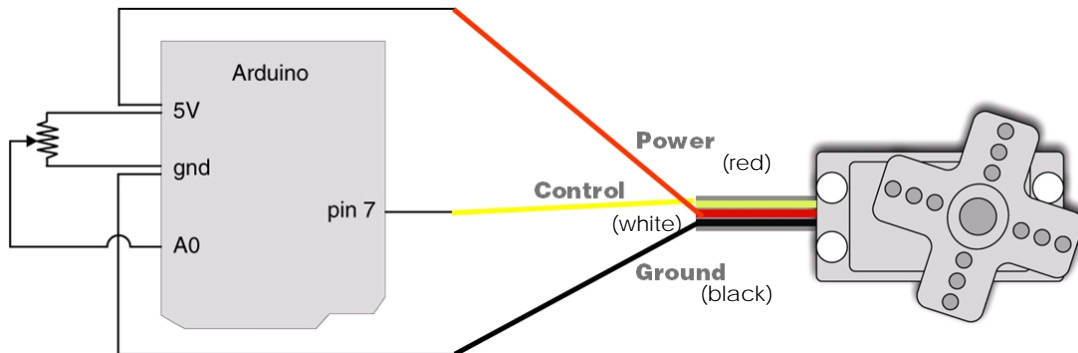


2. Connect the servo motor to your Arduino.



There is a program called “servo\_control\_serial.txt” on the course website, which lets you drive the servo by pressing number keys. Observe the position of the servo as well as the values (pulse width in ms) printed on the serial monitor.

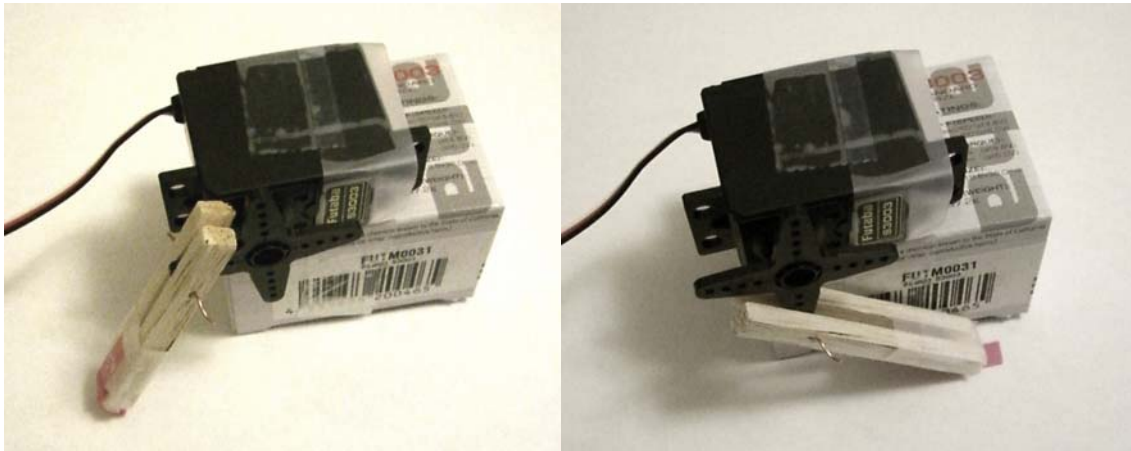
3. Next, connect your potentiometer and control the servo motor with the potentiometer:



There is a program called "servo\_control\_pot.txt" on the course website, which lets you drive the servo with a pot. Again, observe the position of the servo as well as the values printed on the serial monitor.

### *Part 2 –Make a Crawler*

You can turn rotation movement into linear movement with clever mechanical levers. Experiment with different levers that can make your crawler move forward. Here is one example of a crawler:



We will cover other simple mechanics next week!

### **Homework for next week:**

Post descriptions and photo(s) of your crawler on the course website. Once you get your crawler to move forward, perhaps you would want to generate movement from your program and use your potentiometer to control the speed of the movement. You may also team up with a friend and use two servos instead of one.

Reminder: Your midterm presentation next Tuesday, Oct 16<sup>th</sup>. Good luck!