

## Using L16 Actuators

### Description:

The L16 is powered from a 6v source and a pulse between 1ms to 2ms to retract and extend.

### FRC Wiring

R36 of the FRC 2017 Game Manual outlines the options to wire a servo (As of 2-7-2017)

- R36.** Servos must be connected to, and only to, one of the following:
- A. PWM ports on the roboRIO
  - B. PWM ports on a WCP Spartan Sensor Board (P/N: WCP-0045)
  - C. REV Servo Power Module (P/N: REV-11-1144)



Section 8 ROBOT Rules  
V5



<https://firstfrc.blob.core.windows.net/frc2017/Manual/Sections/08-Robot.pdf>

### FTC Wiring

Modern Robotics Core Servo Controller (As of 2-7-2017)

- 6 Servo Ports
- 5A total continuous

<http://modernroboticsinc.com/core-servo-controller-3>

### Set Position (FRC):

The boundaries of the servo are different then the standard servo library.

<https://www.chiefdelphi.com/t/anyone-have-servo-example-code/155951/7>

```
yourActuator = new Servo(RobotMap.YOUR_ACTUATOR_CHANNEL);  
yourActuator.setBounds(2.0, 1.8, 1.5, 1.2, 1.0);  
yourActuator.setSpeed(1.0); // to open  
yourActuator.setSpeed(-1.0); // to close
```

### Set Position ( FTC):

Servo object works to program these actuators. From testing, setting position to 0, a 0.75 ms pulse is generated. Setting position to 1 generates a 2.27ms pulse. Each actuator draws ~1.0A when at stall.

To drive fully out, the position is set to 0.82.

To drive half way, the position is set to 0.5

To drive fully in, the position is set to 0.17.

### Other Cases:

When using these servos on another system, start with the smallest signal that can be generated and increment out until the servo starts to move. Once it moves, record this as the retracted number. Continue incrementing until the servo stops moving. Record this as fully extended.

Using an oscilloscope, the recorded retracted and extended can be double checked and measured.