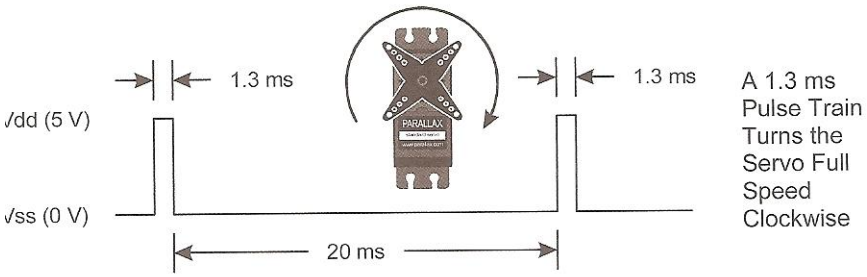
The Continuous Rotation Servo

As you know, the standard servo responds to pulses to move to and then hold a specific position. The Continuous Rotation servo is a variation which is also controlled by pulses. In the case of the Continuous Rotation Servo the pulses cause it to move and keep moving. The speed and direction of the motion are determined by the length of the pulses. The timing diagram below indicates how it works. Pulses of 1.3 ms repeated after a 20 ms pause will cause the servo to turn clockwise at full speed.



And if you want to go counterclockwise you change the width of the pulse to 1.7 ms.

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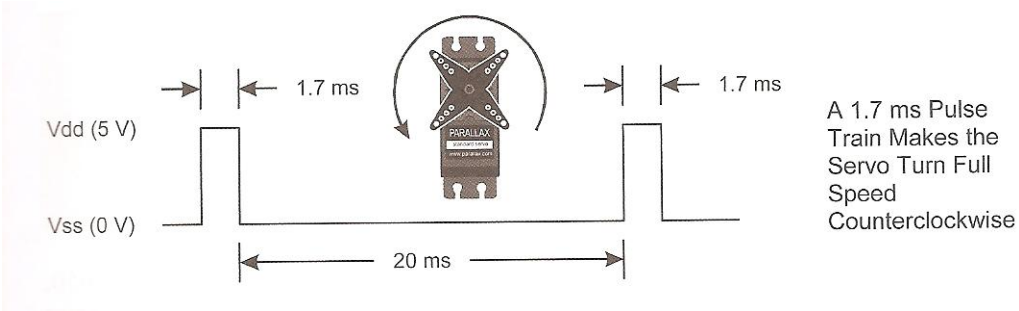


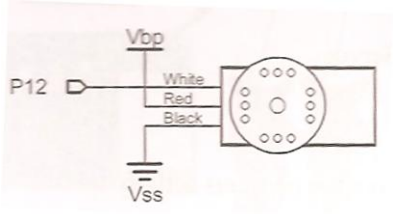
Those are the extremes. A pulse width of 1500 ms causes the servo to stay still, assuming it has been calibrated properly. If not, you can calibrate it by gently adjusting the potentiometer using a small screwdriver.

You can use two functions in the simpletools library to generate those pulses:

pause(duration) where duration is in ms
pulse_out(pin,duration) where pin is (obviously) the pin and duration is in microseconds.

Assignment:

1. Connect the Standard Servo according to this schematic diagram:



2. Write a program to move the servo clockwise for a while, then pause for a while, then move counterclockwise for a while.
3. Experiment changing the duration of the pulse between 1500 ms and 1700 ms and see what happens.
4. Experiment changing the duration of the pulse between 1300 ms and 1700 ms and see what happens.