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Servo 7 for 3 position Signals

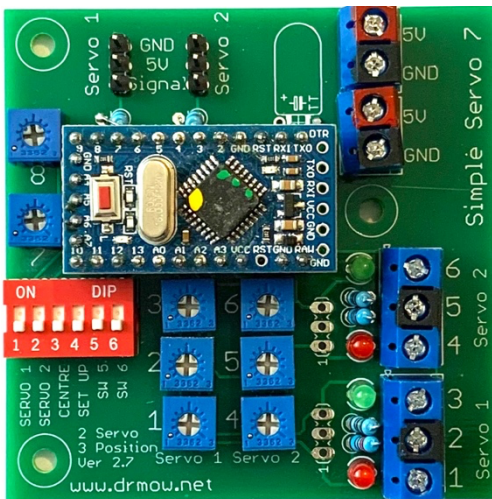


2 Servos
3 Positions

With SimplyRail **Servo 7 (for 3 position Signals)** you can now easily control the position and speed of travel of two servos for moving your 3 position semaphore signals.

Settings, for very small movement and slow operation.

**The setup is simple
no programming, no computers.**



Once set-up, each servo is controlled by a simple switch.

ON/OFF switch for 2 positions.

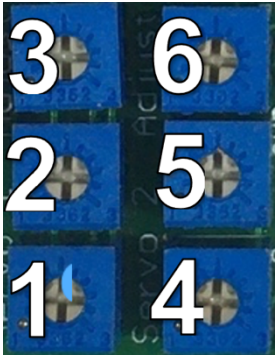
ON/OFF/ON switch for 3 positions.

Servos and switches are connected as indicated on page 5 and 6

You use a screwdriver to turn the Trimpot to adjust the servo position and speed as required.



Setup instructions (page 2)

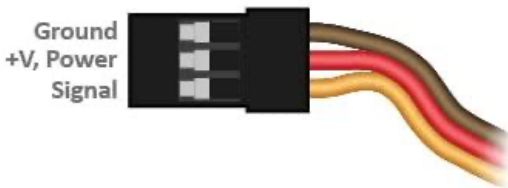


Step 1 – Set Servos for minimum Travel

Turn Trimpots (1,3,4 & 6) anticlockwise,
Please rotate each of the middle blue
Trimpots to the centre position, (2 & 5)

This is to prevent them from damaging your
signal when power is first applied.

Step 2 – Connect the Servos

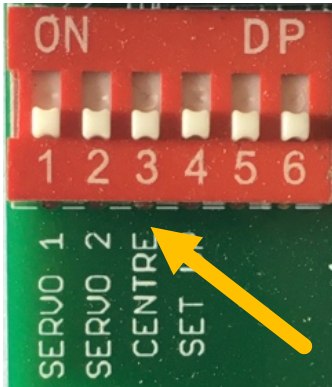


If the servos are installed the wrong
way they won't be damaged but they
will not operate.

Servos come with two common sets of wiring colours

White / Red / Black - White is for the signal, Red 5V, Black is ground.

Orange / Red / Brown - Orange is for the signal, Red 5V, Brown is ground.



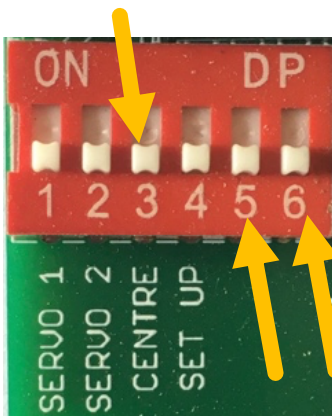
Step 3 – Set Servos for Centre

Turn DP 3 Switch to ON (up)

Connect Power 5V DC

Switch DP 3 ON will hold the servos to the
middle of their travel.

You can now connect you signal to the servo
with the signal in the centre of its travel
(Yellow Aspect)



Step 4 – Set Servos for minimum movement

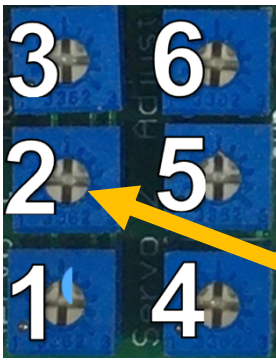
Turn Switches DP 5 and DP 6 to ON (up)

This will reduce the maximum travel of the
servos.

Step 5 – Turn Switch DP 3 OFF (down)

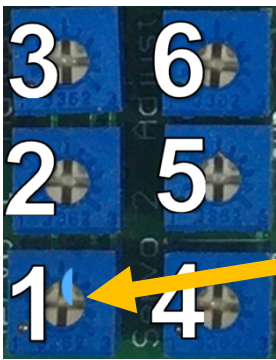
This will now allow the servos to move

Signal 1 – Connected to Servo1 (page 3)



Step 6 -- Set the signal centre position

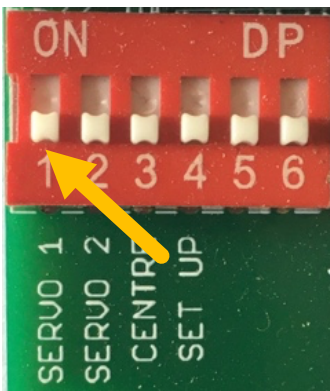
As you rotate Trimpot #2 you will now move the signal connected to servo 1



Step 7 -- Set the signal STOP Lower position

Turn the switch connected to input1 on the Red LED next to input 1 will now be on.

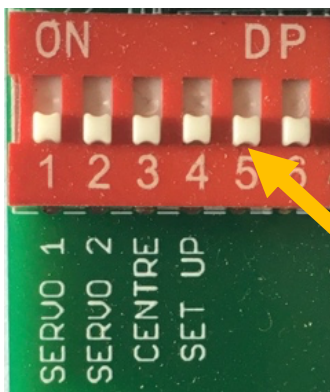
As you rotate Trimpot #1 you will now move the signal connected to servo 1.



If servo 1 moves the signal to the clear upper position instead of down, the travel of the servo can be reversed.

Turn DP 1 Switch to ON (up)

Adjust the Trimpot #1 optimal signal arm position.

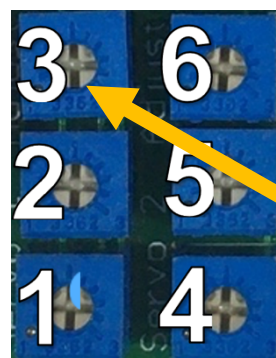


If servo 1 does not move the signal far enough the range of travel can be extended.

First rotate Trimpot #1 fully anticlockwise.

Then turn DP 5 Switch to OFF (down)

Again adjust the Trimpot #1 optimal signal arm position.



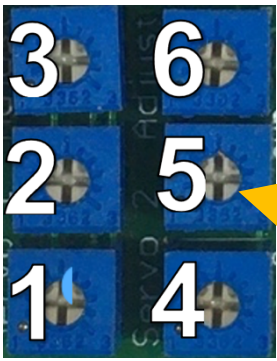
Step 7 -- Set the signal Clear upper position

Turn the switch connected to input3 on, the Green LED next to input 3 will now be on, *The Red LED must be off (Switch at input 1).*

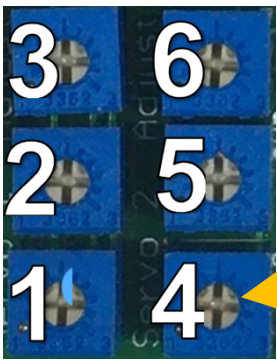
As you rotate Trimpot #3 you will now move the signal connected to servo 1.

Adjust the Trimpot #3 optimal signal arm position.

Signal 2 – Connected to Servo2 (page 4)

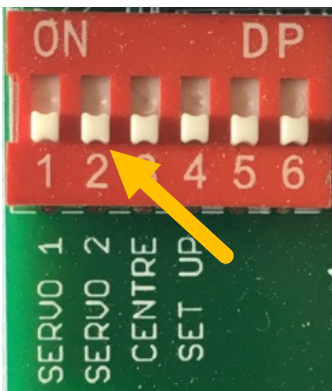


Step 8 – To set the signal centre position
As you rotate Trimpot #5 you will now move the signal connected to servo 2



Step 9 -- Set the signal STOP Lower position
Turn the switch connected to input4 on, the Red LED next to input 4 will now be on.

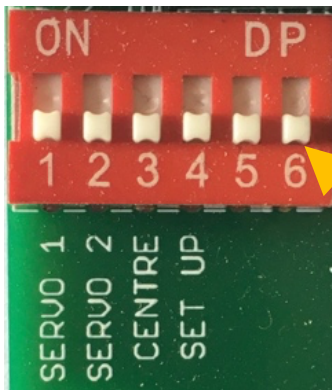
As you rotate Trimpot #4 you will now move the signal connected to servo 2.



If servo 2 moves the signal to the clear upper position instead of down, the travel of the servo can be reversed.

Turn **DP 2** Switch to ON (up)

Adjust the Trimpot #4 optimal signal arm position.

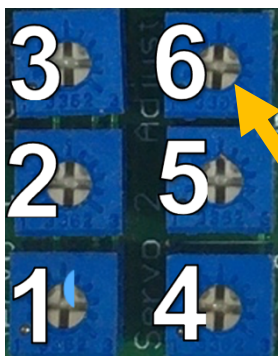


If servo 2 does not move the signal far enough the range of travel can be extended.

First rotate Trimpot #4 fully anticlockwise.

Then turn **DP 6** Switch to OFF (down)

Again adjust the Trimpot #4 optimal signal arm position.

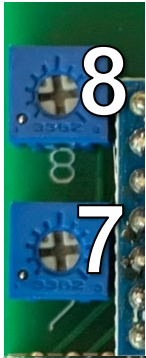


Step 10 -- Set the signal Clear upper position
Turn the switch connected to input6 on, the Green LED next to input 6 will now be on,
The Red LED must be off (Switch at input 4).

As you rotate Trimpot #6 you will now move the signal connected to servo 2.

Adjust the Trimpot #6 optimal signal arm position.

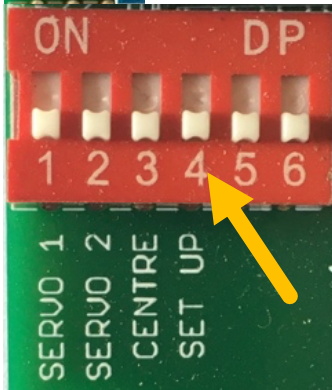
SimplyRail Servo 7 for 3 position Signals (page 5)



Step 11 - To adjust the speed of the travel.
Adjust Trim Pot 7 to Adjust Servo 1 travel speed.
Adjust Trim Pot 8 to Adjust Servo 2 travel speed.

↻ Anticlockwise for faster

↻ Clockwise for faster



Once you are happy with the travel and direction of the servos turn **switch 4 to OFF**. (On the Red switch bank)

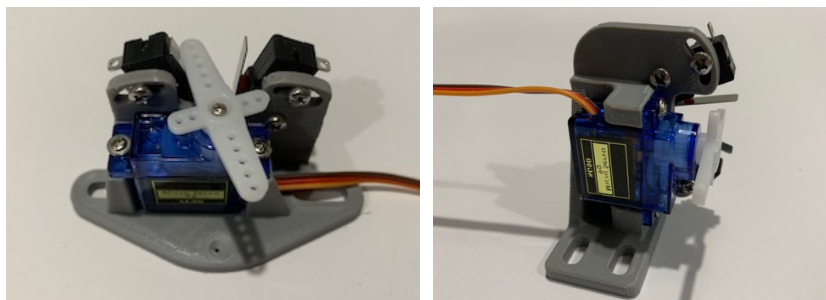
The servos will now move to your set location as you operate your external Switches for the servos.

If you need to readjust the servo1 go back to Step 6 to 7 (Page 3)

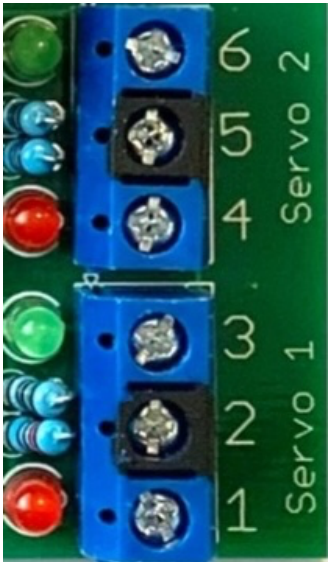
If you need to readjust the servo2 go back to Step 8 to 10 (Page 4)

For a new setup please go back to Step 1 (Page 2)

3D Printed servo holder with or without micro switches are available at
www.simplyrail.com.au



SimplyRail Servo 7 for 3 position Signals (page 6)



Controlling the Servo 7 with switches

For **Servo 1**

No inputs = Red and Green LEDs off

Servo will be in the **centre position**.

Input connecting 1 to 2(Ground)

Red LED next to 1 is On Servo in **Down Position**

Input connecting 3 to 2(Ground)

Green LED next to 3 is On

Note: The servo will only move to the upper Position if the RED led is OFF, (that is there is no input on pin 1)
A Red signal will always override green or centre.



For **Servo 2**

No inputs = Red and Green LEDs off

Servo will be in the **centre position**.

Input connecting 4 to 5(Ground)

Red LED next to 4 is On Servo in **Down Position**

Input connecting 6 to 5(Ground) Green LED next to 6 is On

Note: The servo will only move to the upper Position if the RED led is OFF, (that is there is no input on pin 4)
A Red signal will always override green or centre.

A three position signal can be operated by

2 ON/OFF switches. (Off to the centre pin 2 or 5)

Or 1 ON/OFF/ON switch. (Off to the centre pin 2 or 5)

Signals can be automated with Simply Rail Signals 3.5

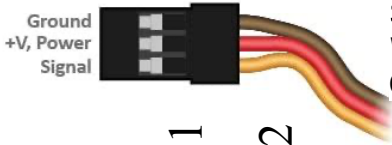
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Wiring Diagram



x2



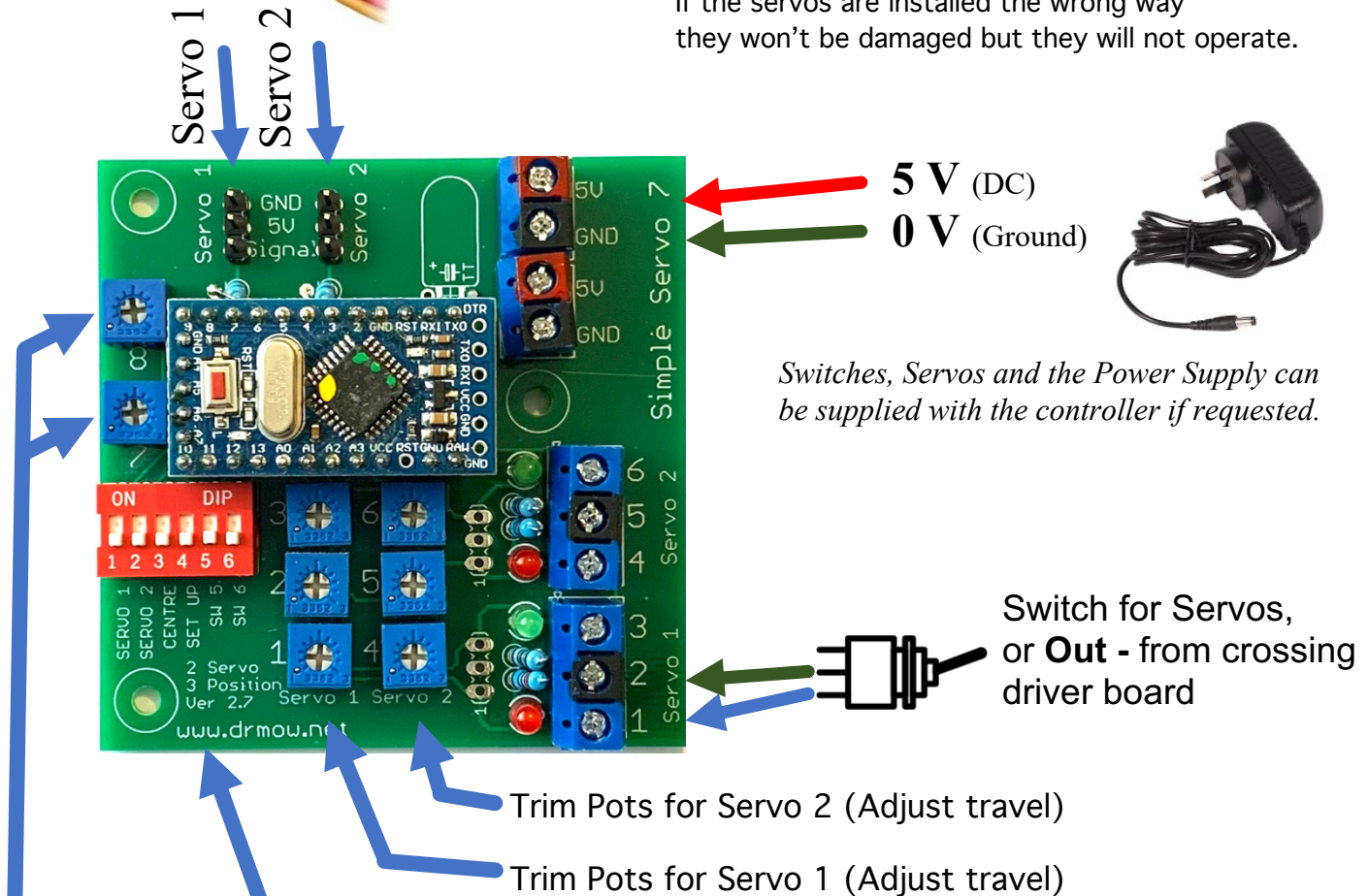
Connecting the servos to the board

Servos come with two common sets of wiring colours

White / Red / Black - White is for the signal, Red 5V, Black is ground.

Orange / Red / Brown - Orange is for the signal, Red 5V, Brown is ground.

If the servos are installed the wrong way they won't be damaged but they will not operate.



Switches, Servos and the Power Supply can be supplied with the controller if requested.

Switch for Servos, or **Out** - from crossing driver board

Trim Pots for Servo 2 (Adjust travel)

Trim Pots for Servo 1 (Adjust travel)

Trim Pot 8 to Adjust Servo 2 travel speed.

Trim Pot 7 to Adjust Servo 1 travel speed.

Switch 1 (Reverse the position of Servo 1)

Switch 2 (Reverse the position of Servo 2)

Switch 3 (Servos at centre of their travel)

Switch 4 (For setting travel and reverse)

Switch 5 (Servos 1 reduced travel)

Switch 6 (Servos 2 reduced travel)

Switch 4 must be ON when adjusting Trim Pots and Red DP Switches 1 - 6

Other items you will need *These can be supplied with your controller at extra cost.*

5V DC Power supply (also socket for plug pack lead)

Switches to operate the servos - 2 Position operation require an ON/ON switch.

3 Position operation require an ON/OFF/ON switch.

Servo leads are only 250mm long, if your servos are mounted further away from the controller servo extension leads are an easy solution. They can also make it easier to install the controller in a more accessible location.

Servo extension leads are available in 300mm, 500mm and 1 meter lengths.