

How to make your own VEXnet Competition Switch

The competition switch plugs in to the competition port on the top of your VEXnet Joystick and allows you to practice autonomous and driver control modes easily. This switch is really easy to make but please follow the instructions carefully as incorrectly wired switches may damage your VEXnet Controller. **Rapid takes no responsibility for damage to controllers through use of DIY competition switches.**

If in doubt, please purchase an official competition switch, part number 70-6361.

What you need:

- 75-0125 toggle switch (Two required)
- 30-3538 ABS box
- 04-0255 Strain relief bush
- 19-5391 Cat5e patch cable (1 patch cable will make 2 competition switches as you will cut it in half)
- Wire strippers, solder and soldering iron, drill, 6mm drill bit, Dremel or junior hacksaw

- 1) Cut the patch cable in half
- 2) Strip the outer insulation back about 50mm to reveal all the smaller wires inside
- 3) Strip the insulation on the following wires by about 5mm
 - a. Orange/White
 - b. Orange
 - c. Green and white
 - d. Blue
 - e. Brown and white
- 4) Use a soldering iron to tin the wires you have stripped
- 5) Drill 2 holes in the top of the ABS box using the 6mm drill bit in the positions shown below:



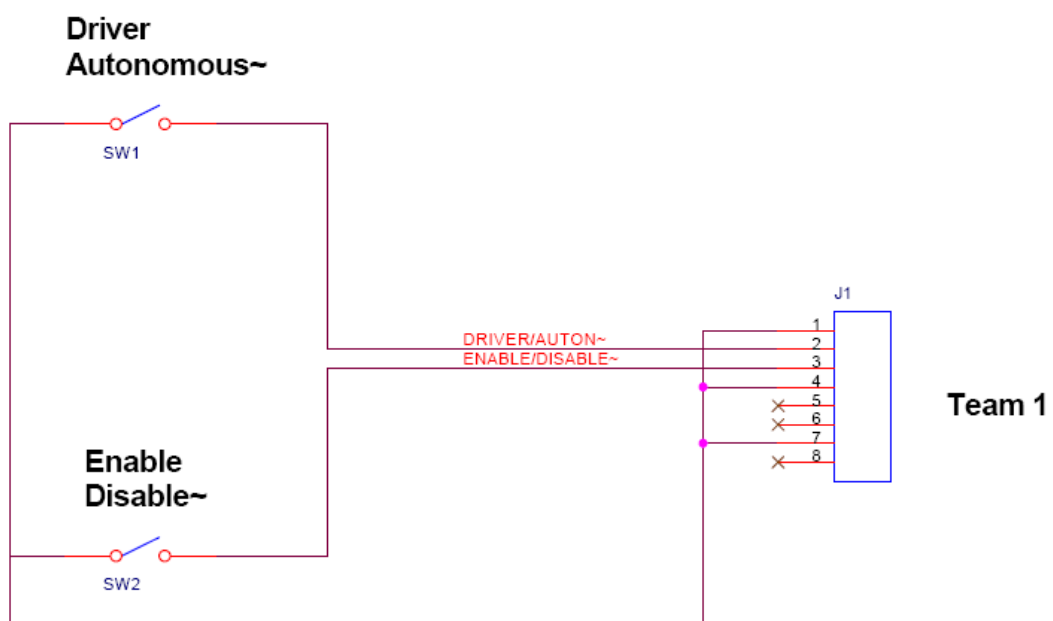
- 6) Using a Dremel type tool or junior hacksaw, cut a U shape in the top of the box that is 11mm x 11mm to accommodate the strain relief



- 7) Fit the strain relief as shown:



- 8) Solder the wires to the switches as per the schematic below. One switch will select between Driver and Autonomous mode. The other will select between Enable and Disable mode. See the table below for identification of wire colours.



The White & Blue (striped), Green (solid) and Brown (solid) wires are unused.

Colour	Pin number on schematic
White & Orange	1
Orange	2
White & Green	3
Blue	4
White & Blue	5
Green	6
White & Brown	7
Brown	8

- 9) Fit the switches into the holes and tighten the nuts on the front of the enclosure. Run the cable through the strain relief bush and close it before screwing the back on the enclosure
- 10) Make sure you have a program downloaded to your robot that has both Autonomous and Driver Control code. Plug your switch into the competition port of your joystick and test it works before correctly labelling the switches for future use.

When the Enable/Disable switch is set to Disable, the robot should not do anything in either Autonomous or Driver Control. When you switch to Enable and set the other switch to Autonomous, the robot should run your Autonomous program. Leaving the switch on Enable and switching to Driver Control should allow you to control the robot with your joystick.

