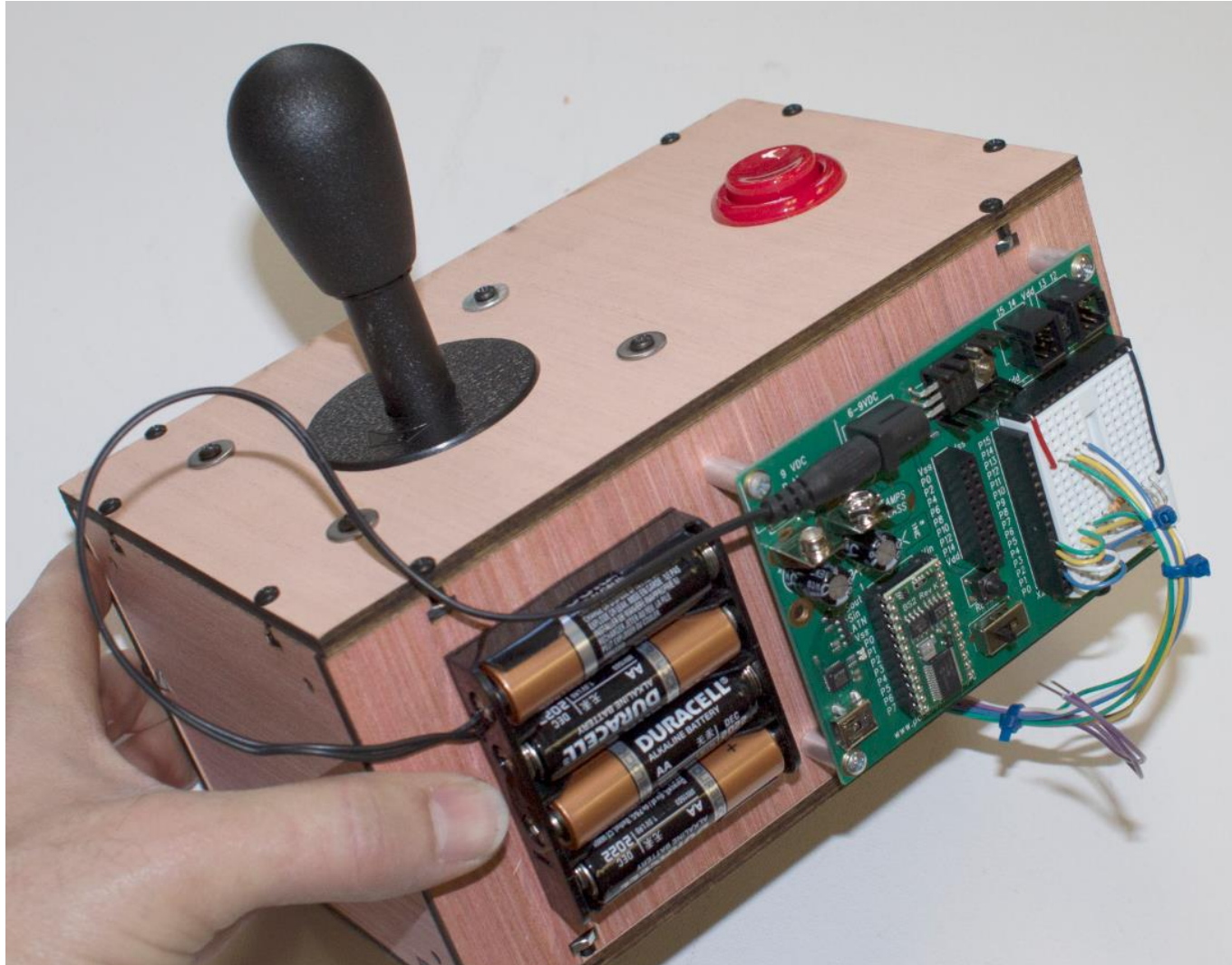


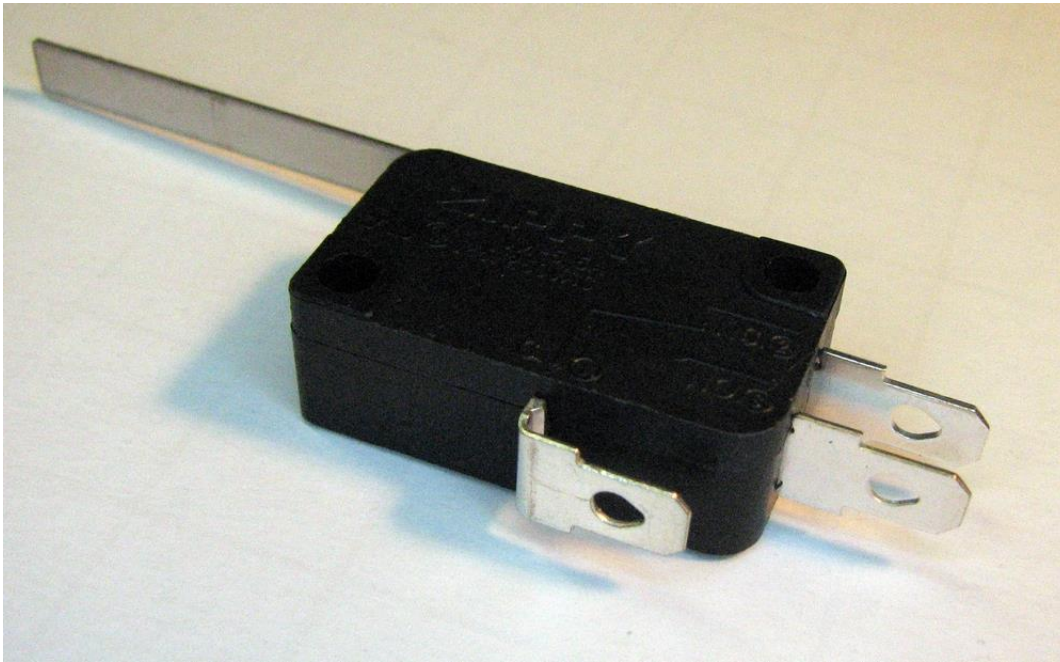
building controller with joystick and button



assemble box



the switches

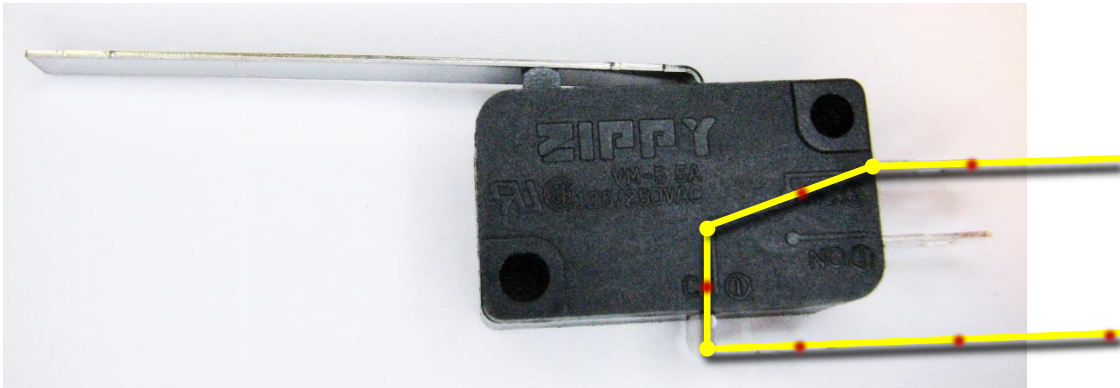


- long lever with three electrical terminals
- can be wired as normally open (electricity flows only when switch pressed)
- can be wired as normally closed (electricity stops flowing when switch pressed)
- used with 0.183 inch quick disconnect terminals

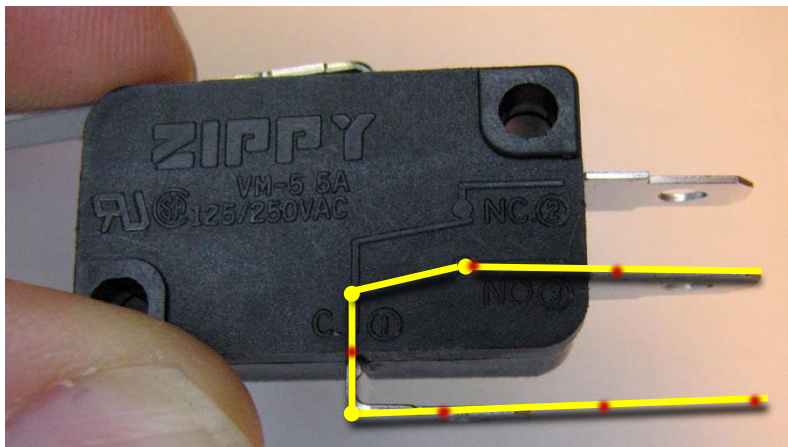


wiring

when the switch is not pressed, electricity can pass through the normally closed (NC) path



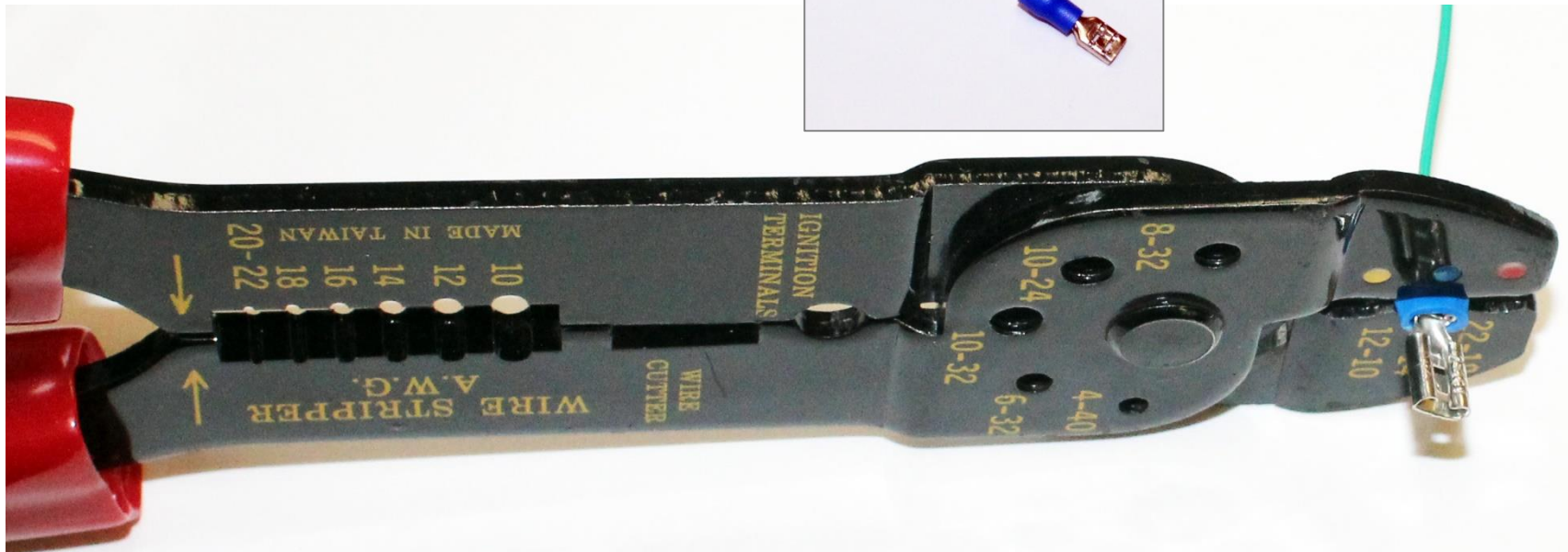
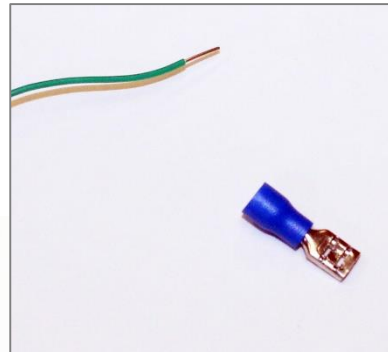
when the switch is pressed, electricity can pass through the normally open (NO) path



preparing your wire (12 pieces of wire)

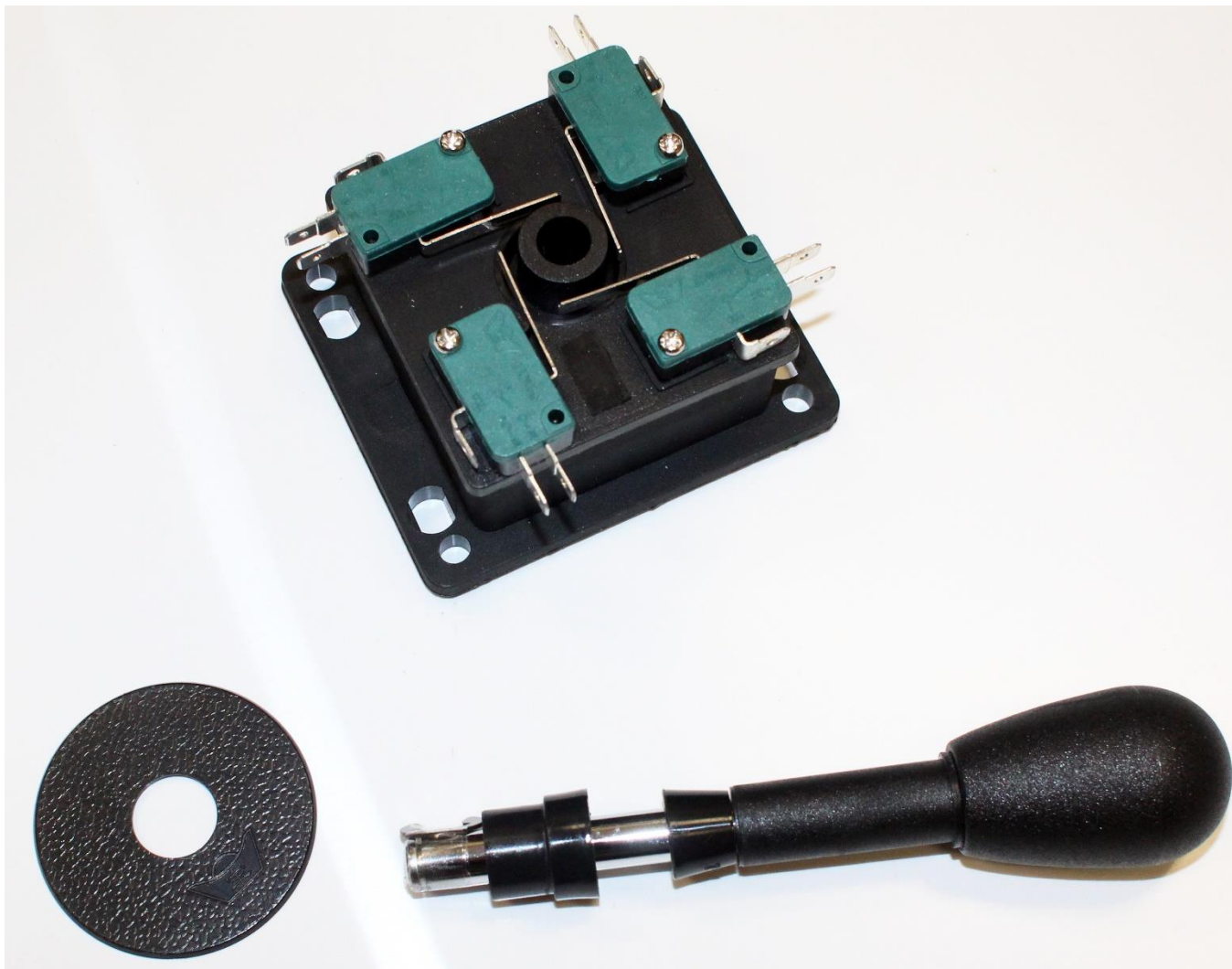


- cut wire pieces 3 feet long
- strip about 3/8 inch of insulation off one end of the wire
- crimp one of the quick connect terminals on one end

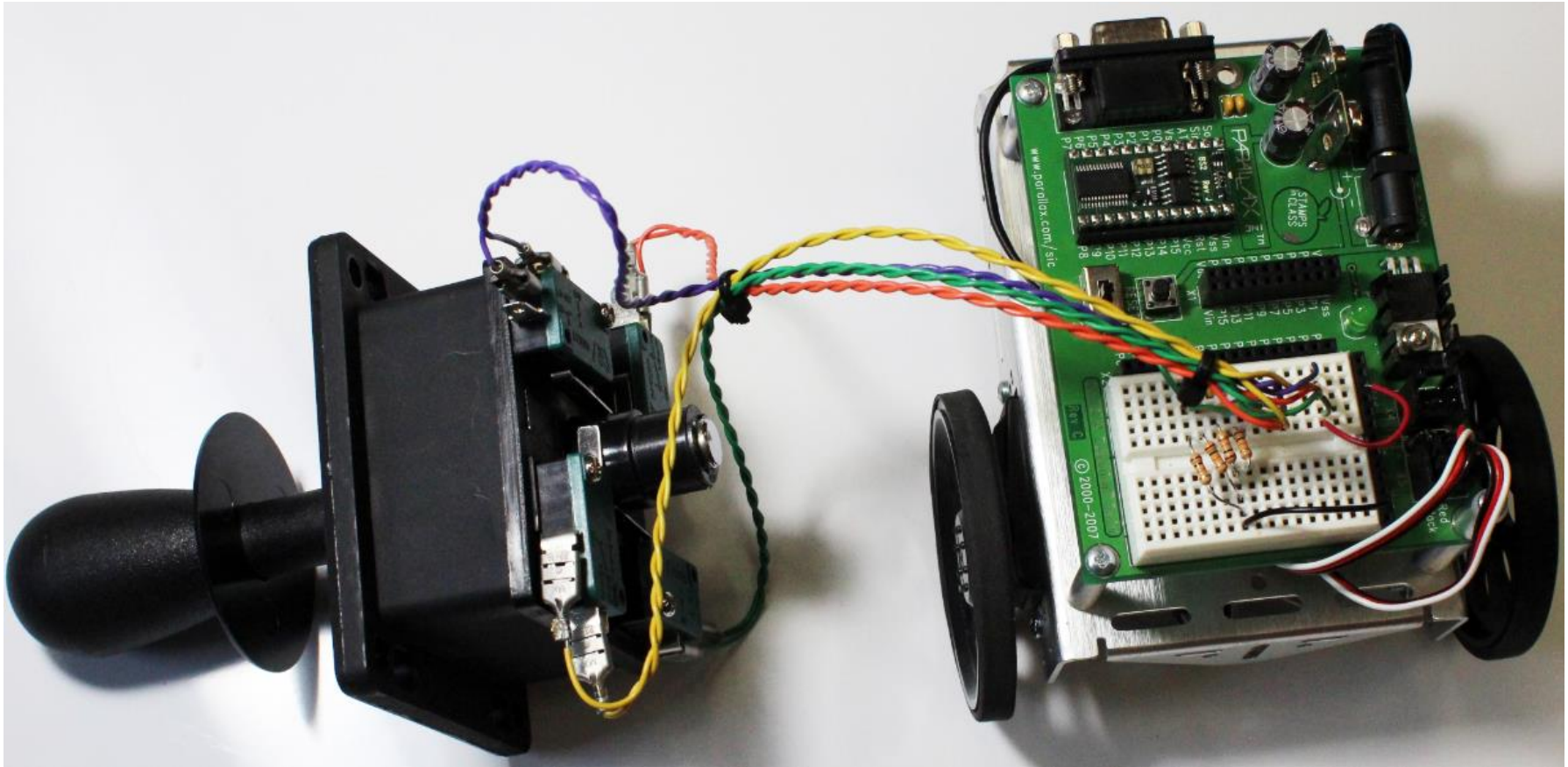


put joystick together

(keep things in order below)



wiring of joystick directly to Board of Education

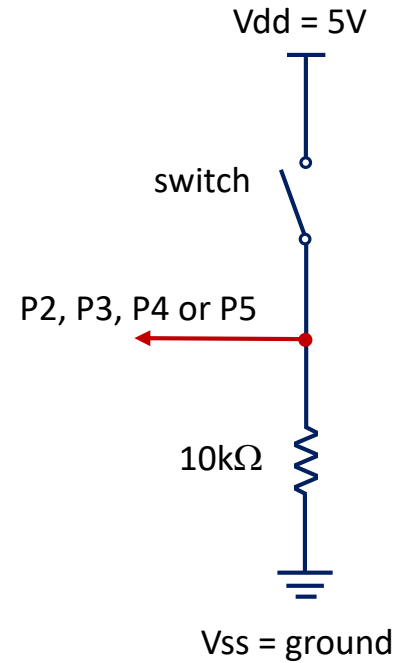
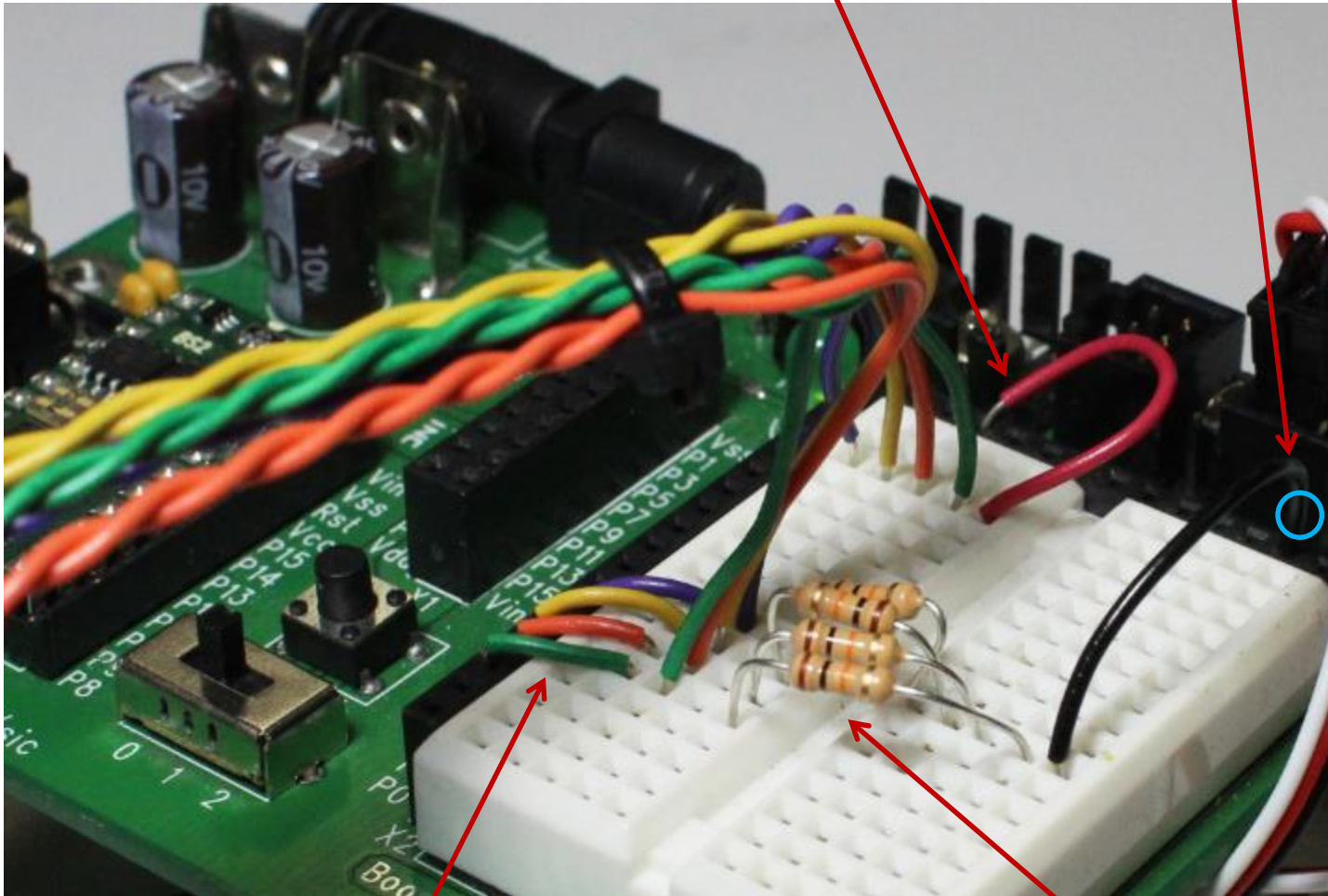


wires have been shortened here to show wiring

wiring of joystick

all switches fed by 5V from Vdd

switches grounded to Vss



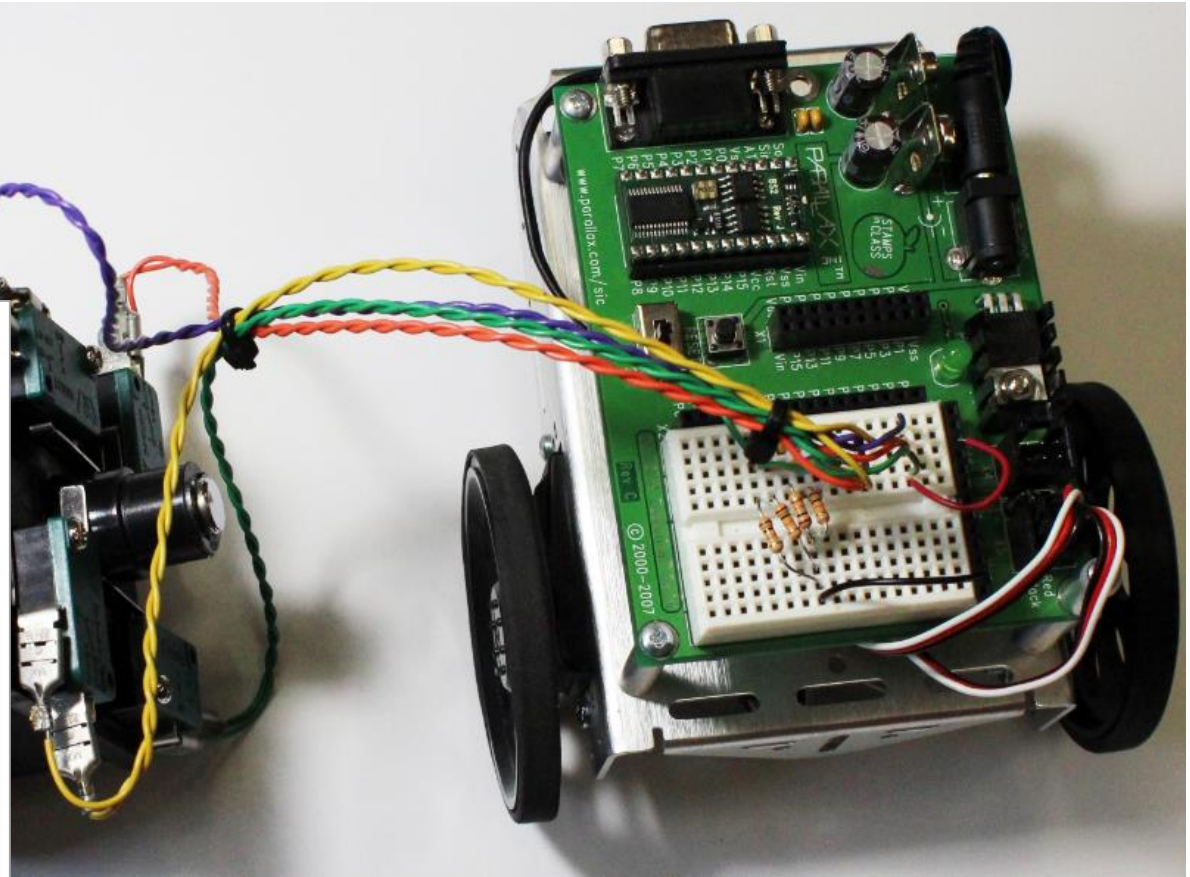
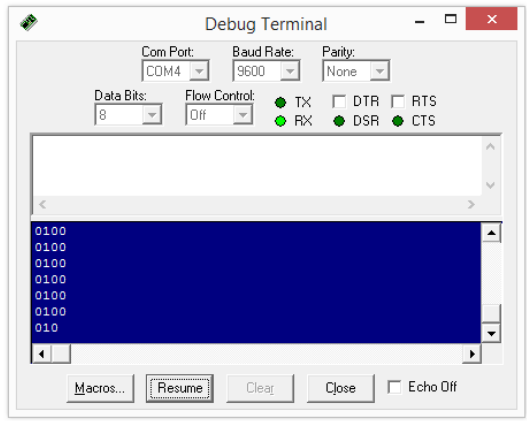
one digital pin for each switch

10kΩ resistors needed for joystick
(4 switches)

simple program to check wiring

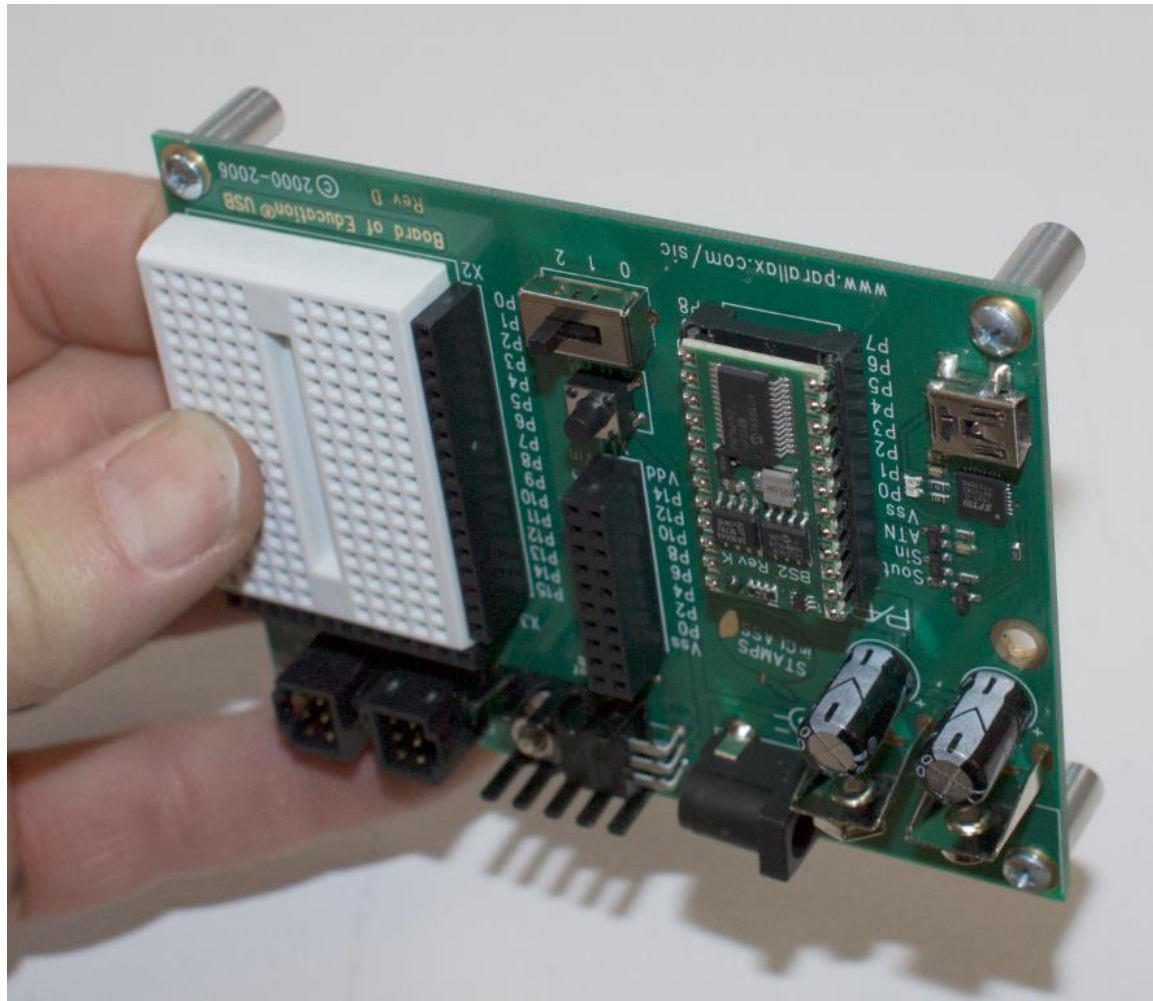
```
' {$STAMP BS2}
' {$PBASIC 2.5}

DO
  DEBUG BIN IN2
  DEBUG BIN IN3
  DEBUG BIN IN4
  DEBUG BIN IN5, CR
LOOP
```



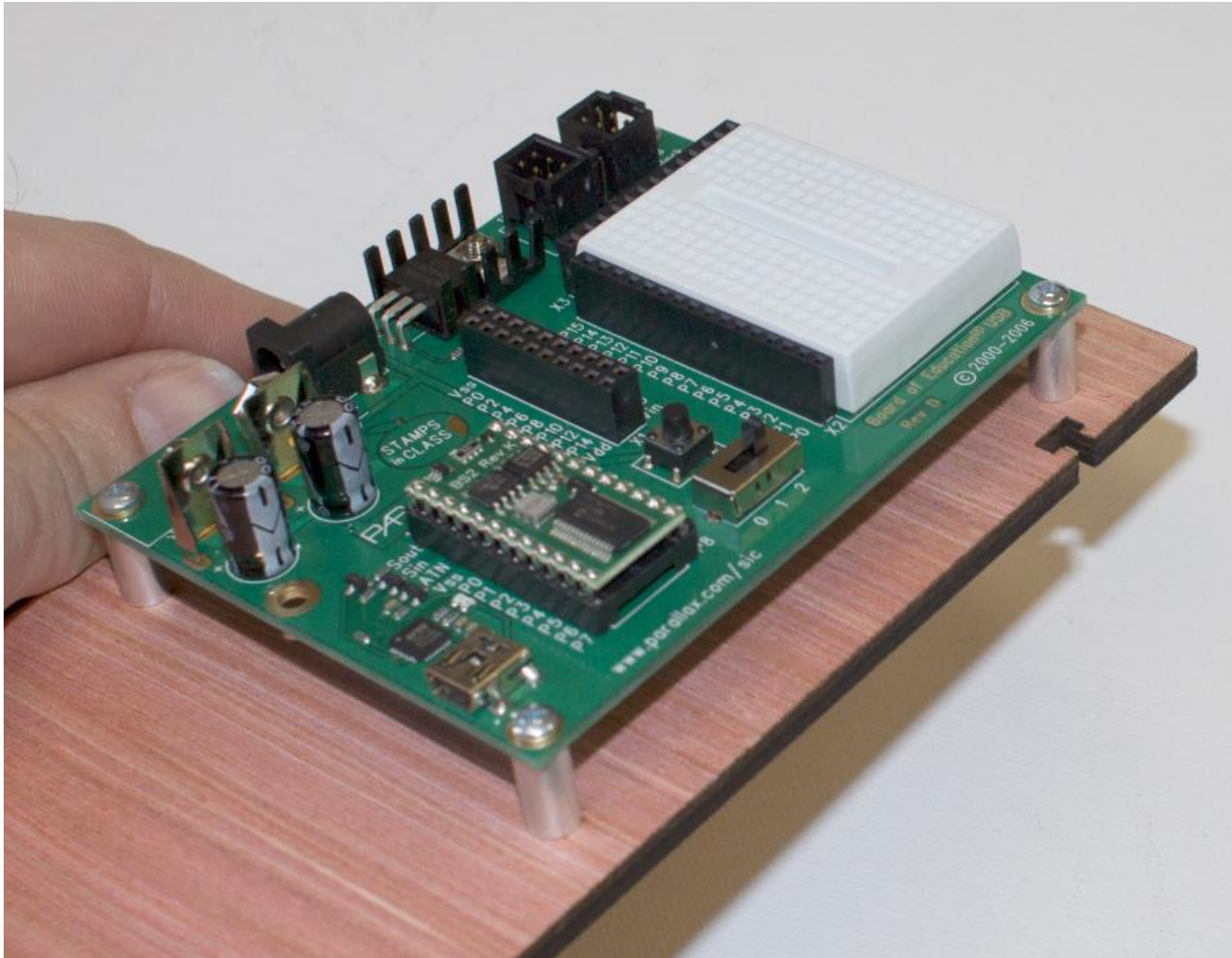
assembling control box

(screw standoffs onto Board of Education)



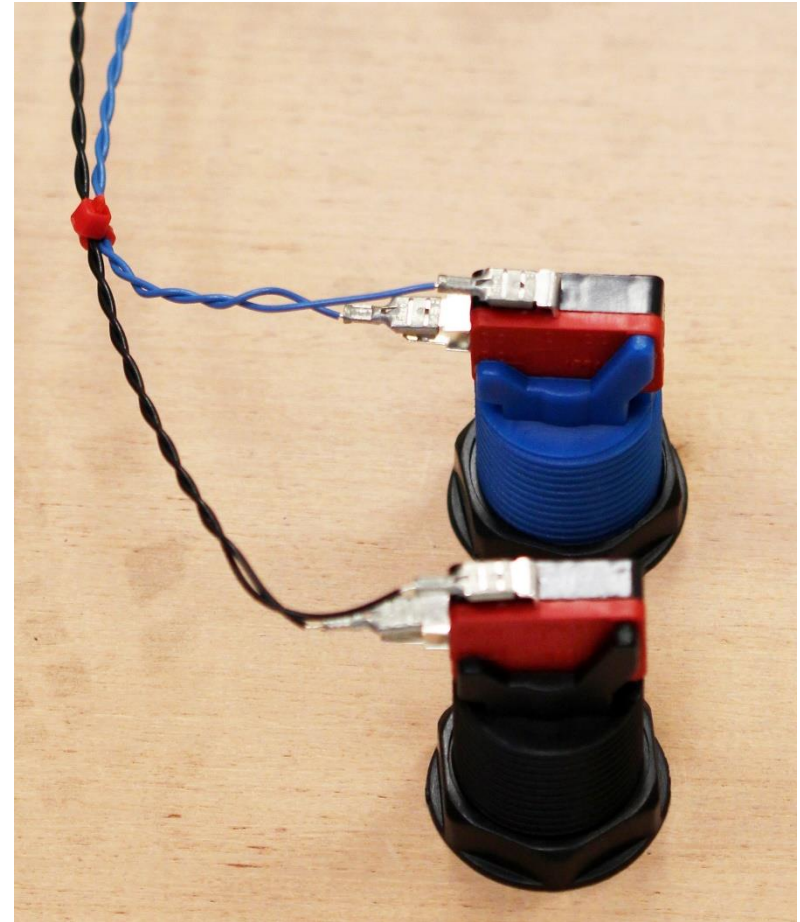
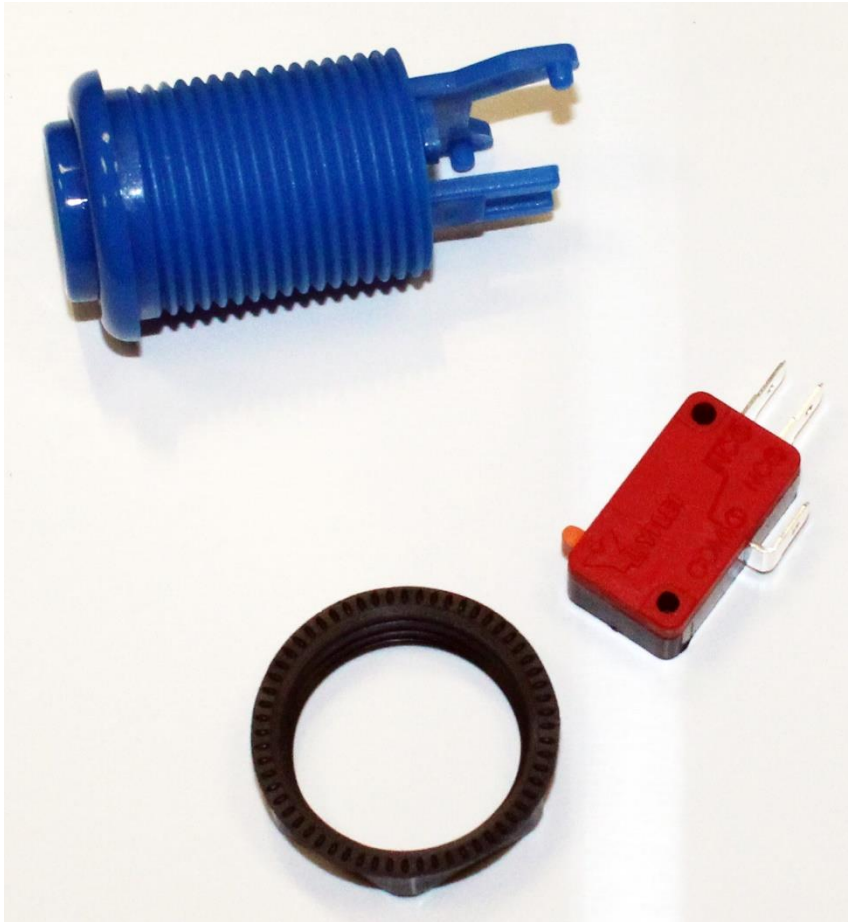
assembling control box

(screw Board of Education onto wooden box)

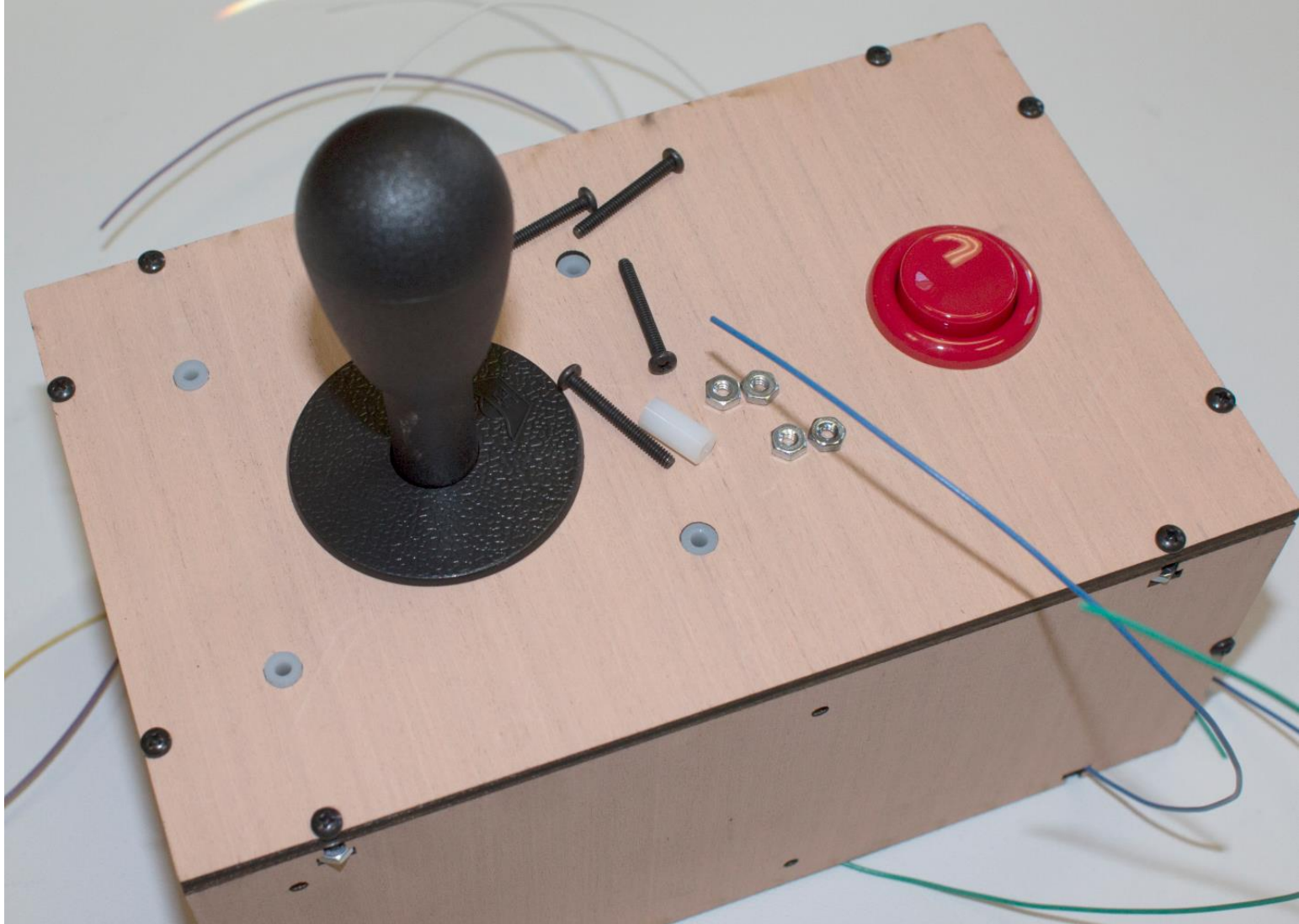


assemble push buttons

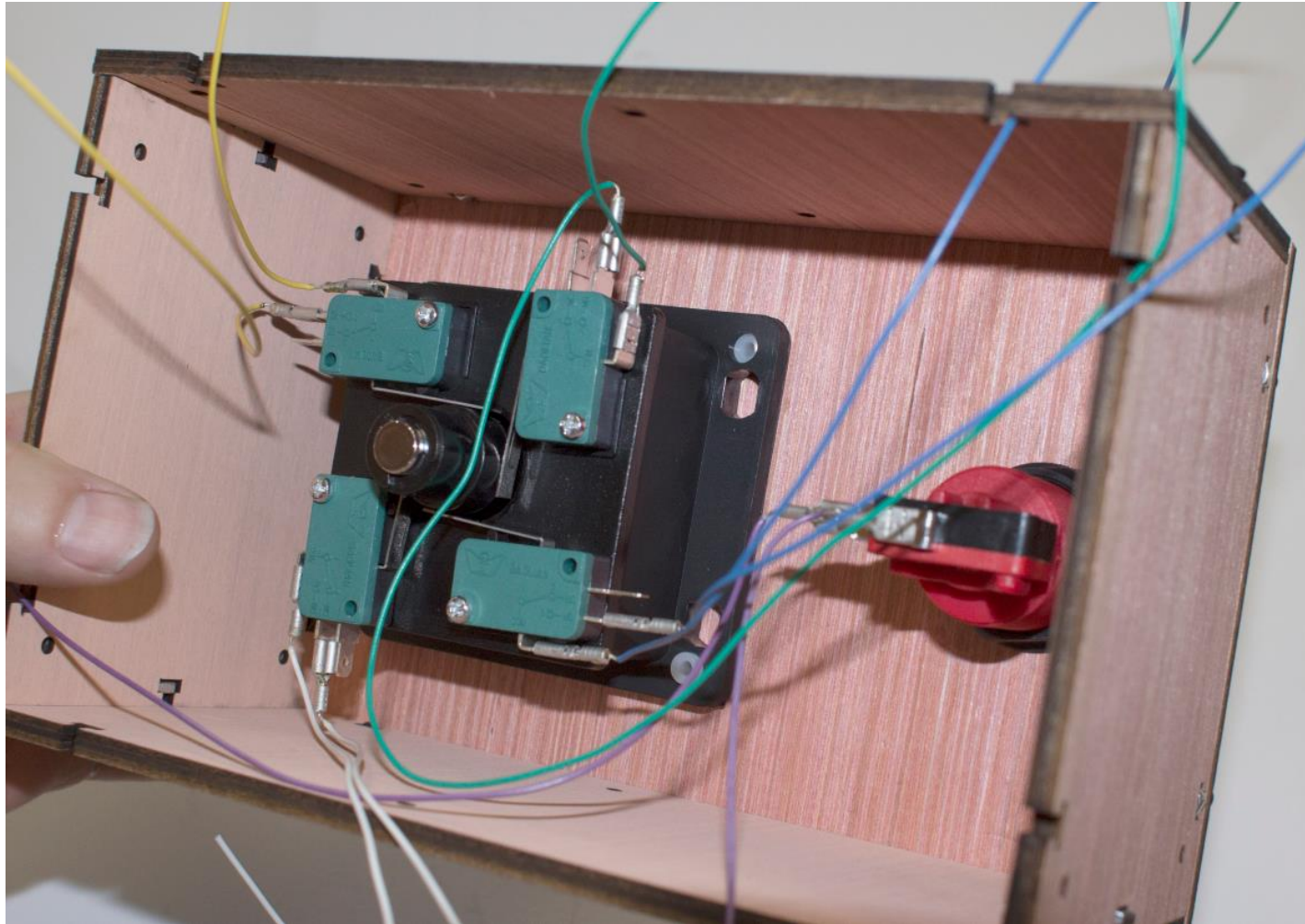
(holes in switch go in pegs on button)



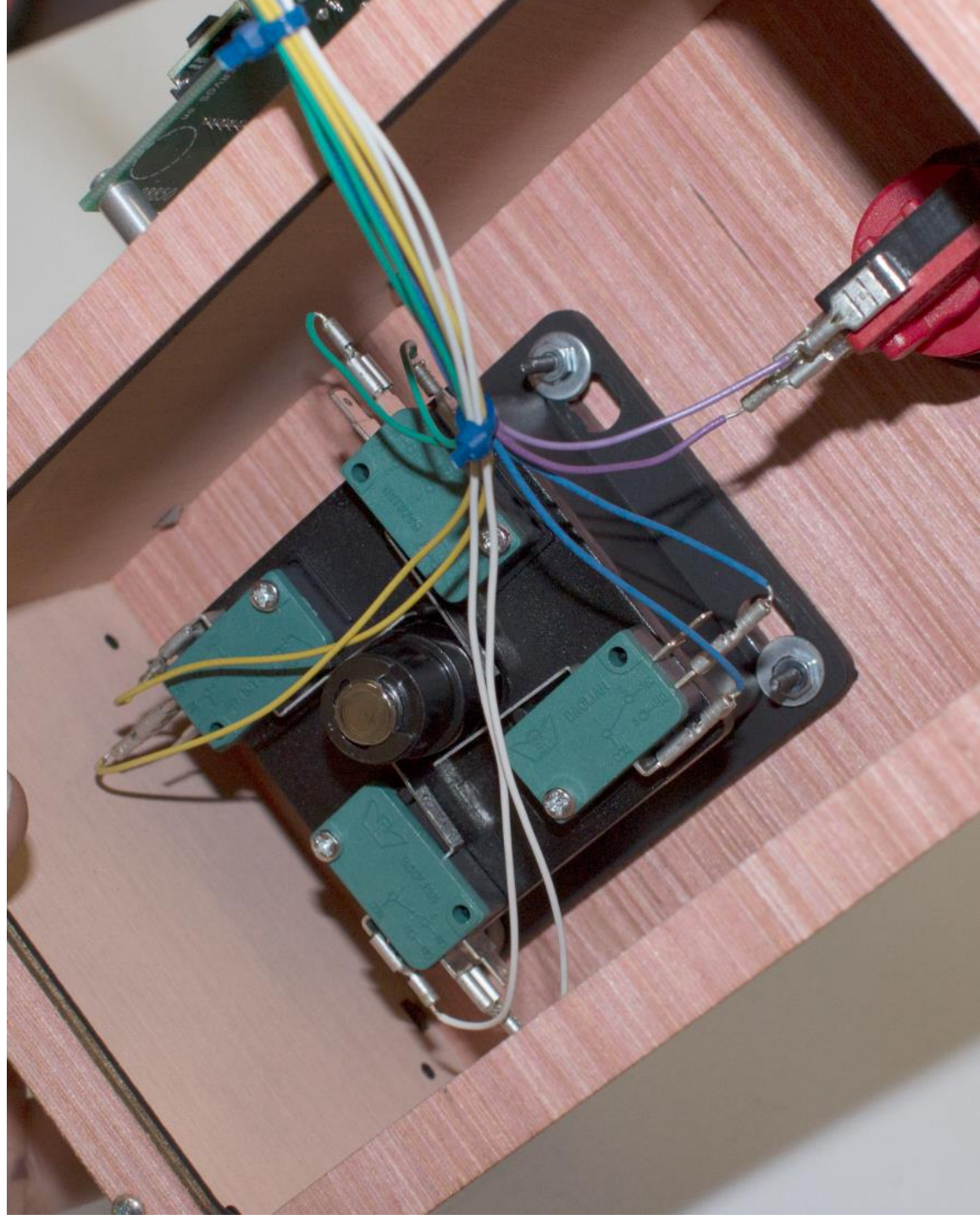
use screws to attach joystick to box



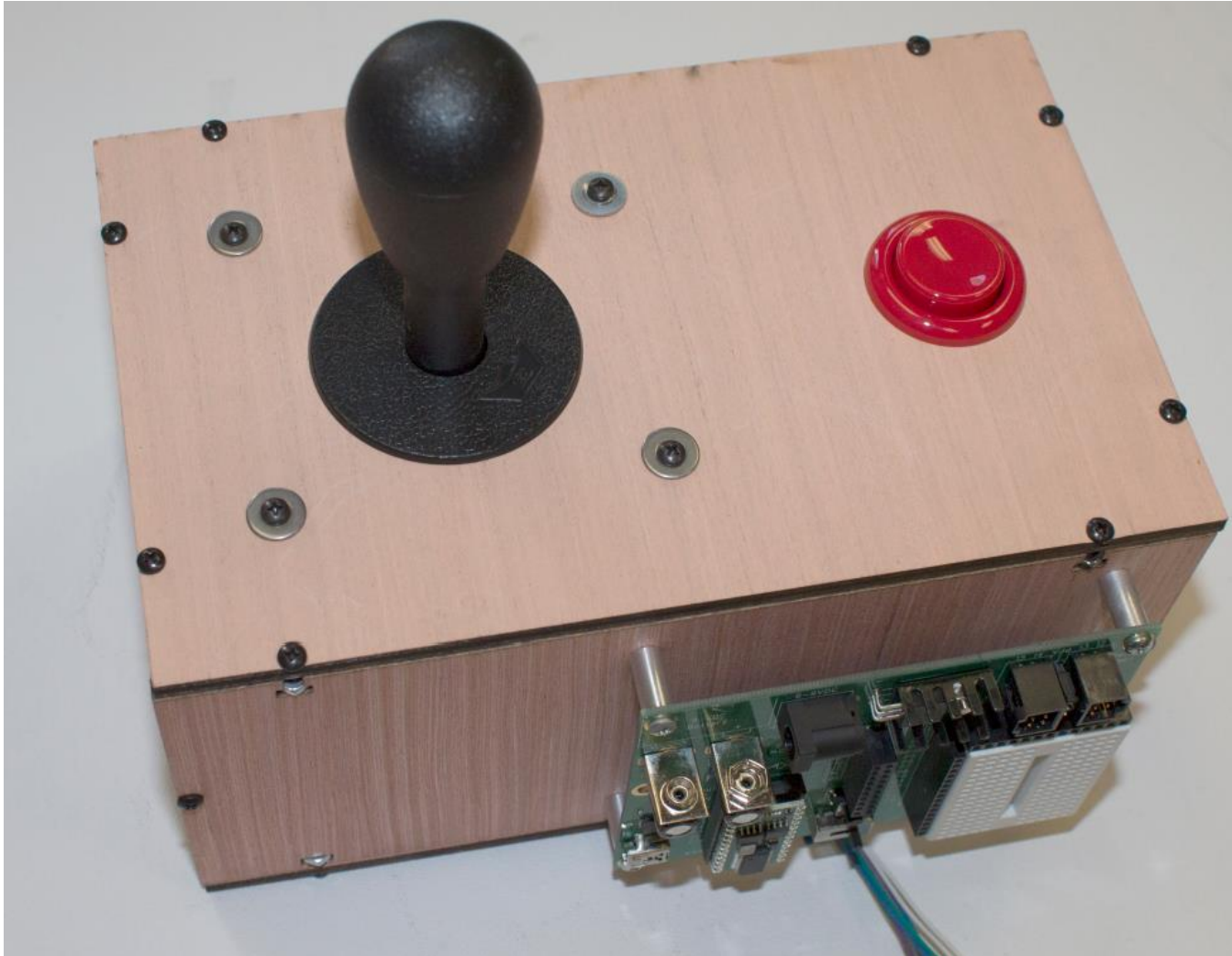
underside before joystick attached
(you may need some small washers)



bind wires to keep
them neat

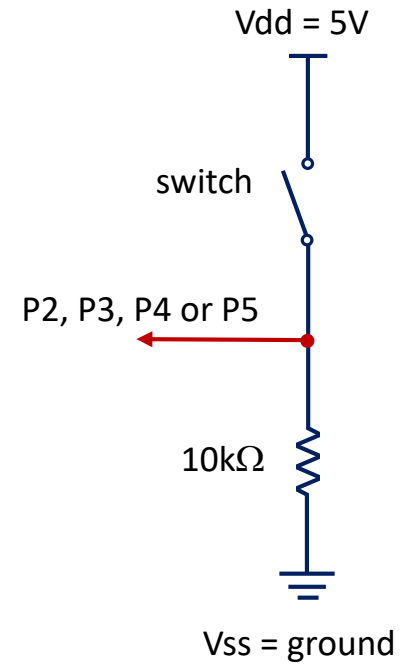
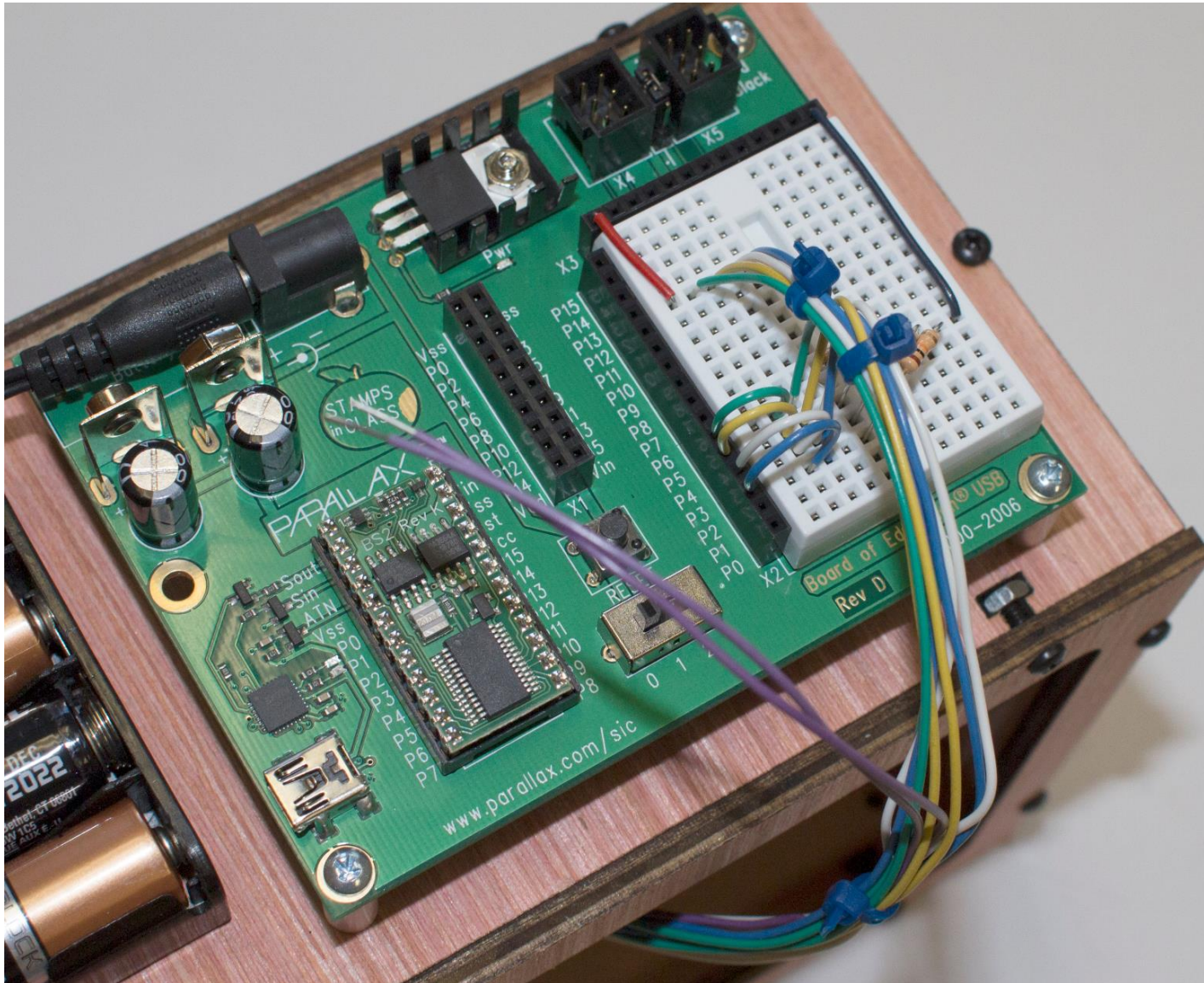


assembled system before connecting
wires to Board of Education



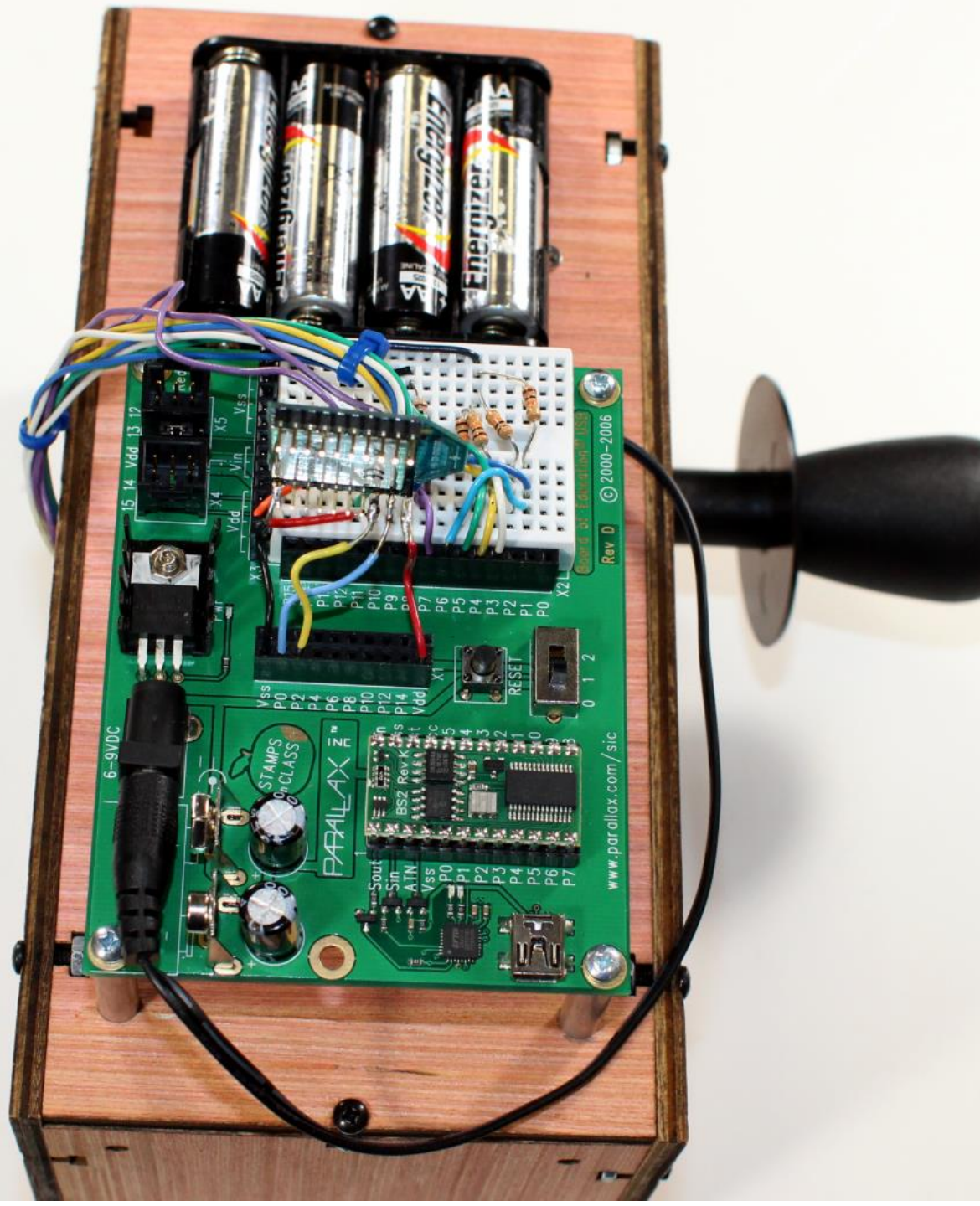
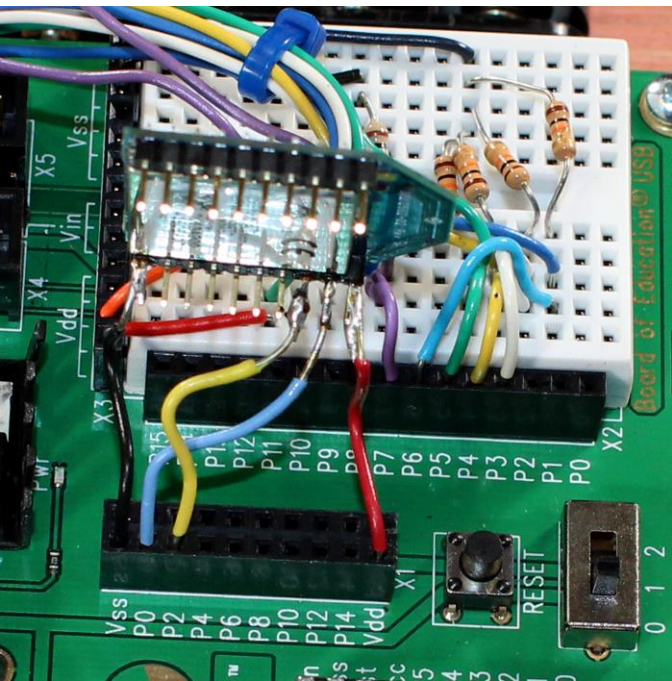
completely wired system

(except for optional push button and XBee)



add the Xbee
transmitter

underside of XBee



complete control box

(except for optional push button)



complete control box

(except for optional push button)

