

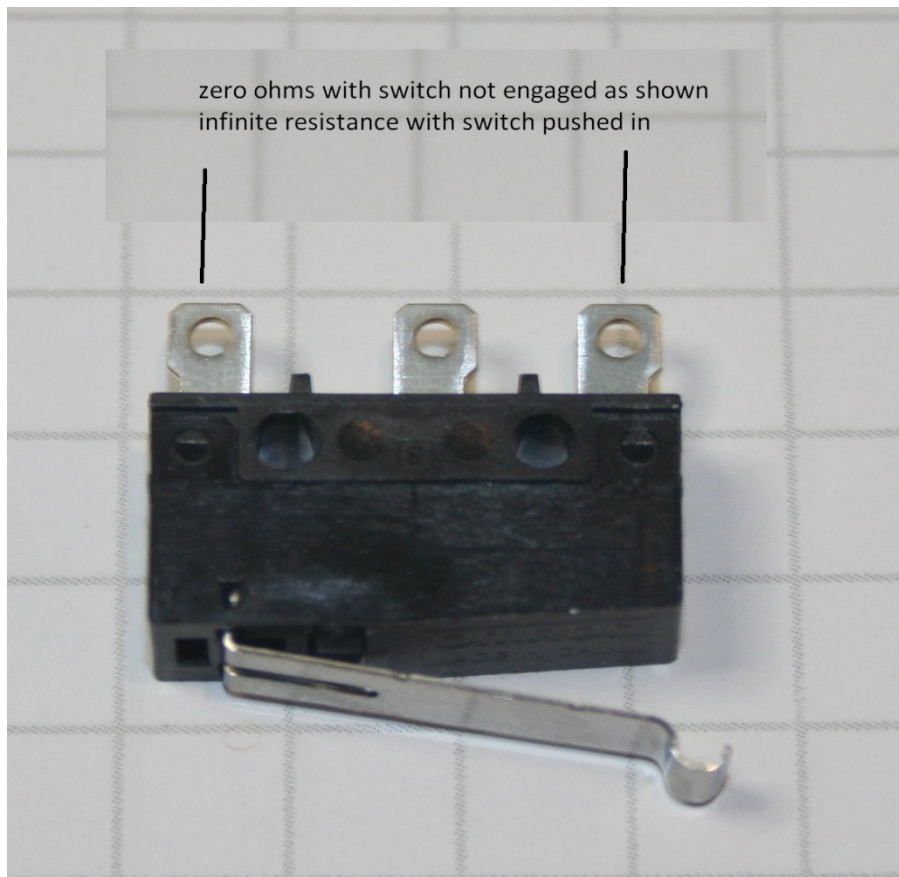
# 5925 X and Y Axis Home Switch

---

This covers both X and Y axis. If the X or Y axis home switch has been moved, it will need to be adjusted to open at the proper home position.

The X and Y axis home switches use a common snap action switches that are wired in the normally closed configuration. When the X or Y axis is at its home position, the switch lever will be moved towards the body of the switch and the circuit will open. When the switch is in its relaxed position as shown, the NC (normally closed) contacts should read zero ohms. When the switch lever is pushed up towards the body of the switch, the resistance should be infinite.

If the circuit is open with an open contact, defective switch or broken wire, the homing procedure will interpret this as the switch open and will assume current position as home. The homing procedure normally moves the axis to home, then away from home .196 inches and back again. In the normal parked position, the axis will move about .196 inch left (X axis) or down towards the knob (Y axis) then back. If the circuit is open, when homed, it will just move the .196 left or down and stay there.



If the circuit is shorted or the switch has low resistance when opened, or the switch has been adjusted too close to the motor end, axis will hit the hard stop and chatter until the power is turned off to the controller or the pause switch is set to pause (early 5925s did not have a pause switch on the controller). The ESC key will not stop the movement in a home procedure.

To gain access to the X home switch, the ball screw guard will need to be removed. There are 8 1032 button head screws on the bottom and 1 on each end on the vertical surface. A 1/8" Allen wrench is used.

On either the X or Y axis, you will need to move the axis away from the switch (left on the X axis, down towards the operator on the Y axis) to gain access to the home switch. If the power to the controller is off, the drivers are unlocked and the axis can be turned using the knobs on the end of the ball screws. Remember there are 2 ball screws on the X axis and the knobs need to be turned simultaneously. Before removing the switch mounting block, mark its position with a pencil. The mounting block is secured with a 1032 x 3/4" socket head screw requiring a 5/32" Allen wrench.

The switch is attached to its mount with 256 x 7/16 screws that are secured with Loctite. Heating the mounting block with a heat gun will soften the Loctite bond. We recommend removing the wires from their terminals prior to applying heat.

Replace any damaged screws. Verify the "U" shaped end on the lever is facing the 1032 screw hole.

Put a dab of Loctite on the 256 screws. Take care so that Loctite does not get into the switch mechanism. Insert the 256 screws but do not tighten yet. Gently push the switch up from the lever end to take out any slack in the screws, then tighten the 256 screws tight enough to eliminate any movement, but not so tight as to break the switch.

Solder the wires on the 2 end terminals. This is a simple switch so it is not critical which wire goes on which pin, but normally the red wire is on the pin nearest the pivot point of the lever, and the black wire on the terminal nearest the "U" end of the lever.

There is nothing on the center contact. The red wire connects to 5 volts pulled up through a 10K resistor, and the black wire is tied to ground. With the switch in the relaxed position (NC) the red wire should read 0 volts with respect to the black wire and with the switch engaged (lever pushed towards the body pushing the plastic pin in) the red wire should read 5 volts with respect to the black wire.

Reinstall the mounting block on the Panel Pro in the same position as removed by lining up with the pencil marks you made earlier. Note this is a starting point for adjusting and will rarely be the final spot.

Snug the 1032 screw in the mounting block, but do not torque. We want the screw loose enough so that we can tap the mounting block back and forth to adjust it.

#### **Adjust the X or Y axis home switch:**

At power up, after the controller achieves connection with AvCAM, a pop up will ask permission to move all axis to their home switches. Reply NO.

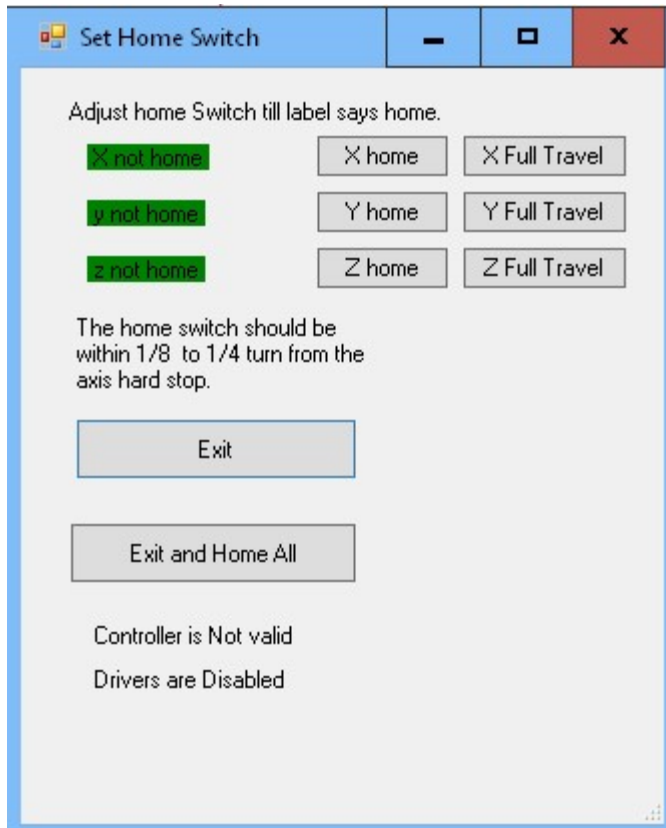
Then it will ask if you want to manually set x, y and z to home. Reply Yes.

Move X axis knob to home. Reply OK (don't bother to actually move them at this time)

Move Y axis knob to home. Reply OK

Move Z axis knob to home. Reply OK

At this point AvCAM considers all of the axis to have been homed. Hit Shift + F10 to open the set home switch dialog. When the switch is closed as is the case whenever it is not at its home position, the label will read X (or Y or Z) not home. When it is at its home position, it will read at home.



The hard stop on a X axis consists of a set screw in both X axis motor plates that will make contact with the Y axis end plate (the one with the knob on the Y axis ball screw) and the Y axis motor plate (the one with the Y axis motor mounted to it). When properly adjusted, the X axis home should be within .062" from the hard stop.

The Y axis hard stop is a 6mm socket screw head on the front side of the Y axis extrusion. When the y axis is at its hard stop, the left side of the Z axis structure will make contact with that screw head. When properly set, there will be no more than .062" between the screw head and the Z axis structure when at the normal Y axis home.

The home switch is properly set when there is less than .062" (approx. 1/3 of a turn of the ball screw) between the axis hard stop and the part that contacts with it, the procedure for that axis is complete. You should click the X, Y or Z full travel button to check that full travel can be achieved without hitting a hard stop.

To adjust a X or Y stop, loosen the home switch screw so it is snug, but not loose. Use a long thin drift made of hardwood or aluminum, place it up against the switch mounting block and tap on the drift with a small hammer. Take care NOT to tap on the switch itself!

Due to variations in the width of the slot, the mounting block can pivot slightly. A very slight adjustment of the mounting block can have a large effect on the axis position. You may need to repeat adjustments to ensure that full travel of the axis does not result in contact with the opposite end hard stop.

When adjustments are complete, torque the 1032 screws securing the home switch mounts.