

## Problem

Problem Statement: X Axis motor will not move. Motor vibrates loudly.

### Troubleshooting Actions and Investigation

#	Test For	Comment	Ok / Nok	Note
1	Power to stepper motor	When axes are enabled the Xaxis motor is held	Ok	Power ok
2	Stepper motor movement	When moving the axis in any direction by 5mm the motor will not move and will only vibrate loudly	Nok	Movement not ok
3	Possible power cable (4 wire) issues	Replaced all 4 wires to Xaxis stepper motor. Aviator plug at motor, the other end connected directly to stepper driver. Wire is 18 gauge. Stepper drivers can output 7amps.	Ok	Cable continuity tested ok with no short to connector housing
4	Stepper motor power wiring configuration (4 wire)	Continuity test confirms that the coils from the stepper motors are connected and paired properly. (A +/- and B +/-)	Ok	Configuration ok
5	Stepper driver test	Swapped Xaxis stepper driver with one 1 Yaxis stepper driver. Yaxis stepper motor is confirmed to function properly. Problem still exists.	Nok	<b>Problem does not appear to be the stepper driver</b>
6	Voltage to stepper driver	Test voltage to stepper driver. Confirmed at 49V	Ok	Voltage ok
7	Xaxis stepper driver	Swapped X stepper driver to Y1 motor. Y axis moves properly.	Ok	Xaxis stepper driver ok
8	Xaxis power cable to stepper motor (4 wire)	Swap Xaxis stepper (power) cable to Zaxis Motor. Z motor shows same condition as X motor (vibrating and not moving)	Nok	Cable / Aviator plug at motor or black connector block at stepper driver? <b>Is the problem the Aviator connector at the motor that comes from Pokeys?</b>
9	Black AB power connector at stepper driver	Swap Xaxis black connector at stepper driver with Axis black connector. Problem still exists	Nok	<b>Black connector does not appear to be the issue</b>
10	Xaxis motor	Drive Xaxis motor with Zaxis connections (stepper power and encoder). Xaxis motor moves ok	Ok	Xaxis motor ok
11	Aviator connector at motor	Eliminate aviator connector at Xaxis stepper motor	Nok	Motor still vibrates and does not move
12	DIR and Step signals	<p>Disconnect DIR signal at stepper driver.</p> <p>From Craig on machsupport.com "Hi, sounds to me like you have the Step and Dir signals swapped over.</p> <p>At your stepper driver temporarily disconnect the Dir signal. If the stepper/driver are good and you HAVE NOT accidentally swapped the Step/Dir signals the stepper should move but only in one direction. Be prepared to Estop it.</p> <p>If however the stepper/driver are good but you Have accidentally swapped the Step/Dir signals then I would expect the stepper to do nothing...not even a sound.</p> <p>Craig"</p>	Nok	Motor still vibrates and does not move