X/Y Issues on ASP-645-1

Issues seen with X or Y problems:

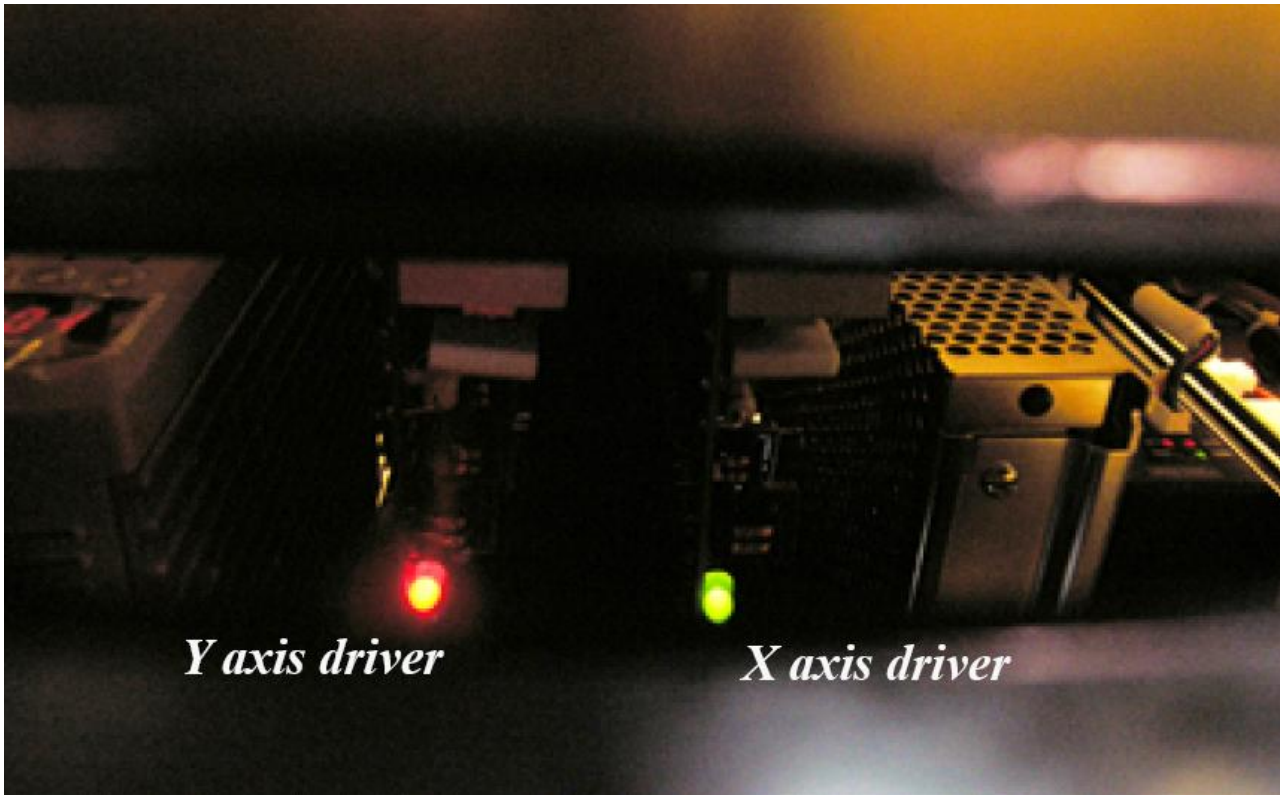
A) Table will not move in X or Y when you are using the Frame Arrow buttons on the control panel.
B) On power up the control panel gives Error 21.
C) Loud Noise coming from the Pantograph movement.
D) On tracing a design on the machine, pantograph only moves in X or only in Y and then gives Error:
    1) X-Motor Drive Error 8
    2) Y-Motor Drive Error 9

Understanding the possible cause of the problem:

Components that may be causing the Issue are:

1) Loose connections on X or Y Driver Boards
2) Loose connection on MPU PCB board.
3) Bad MPU PCB Board.
4) Bad J2 or J3 Cable on MPU PCB Board
    J2 = X - Step Driver
    J3 = Y - Step Driver
5) Bad X or Y Board

Confirm X Board or Y Board Issue by looking at the LED light on both boards, with no issue they should be green, problem is seen with Red light on either board.



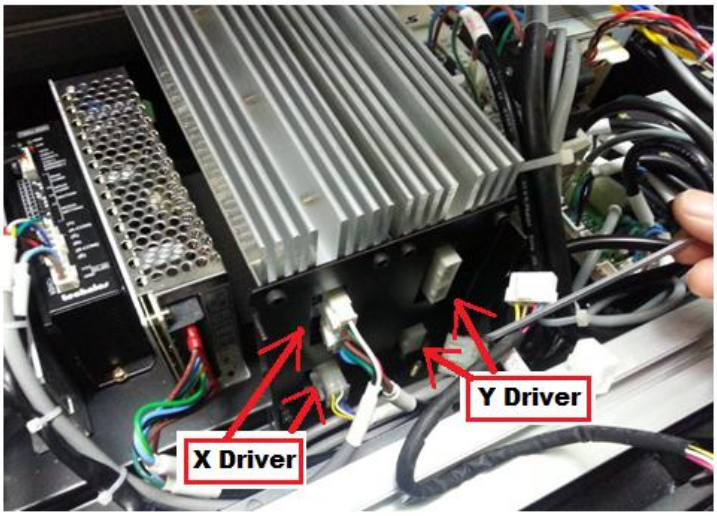
Diagnosing the Possible causes:

1) **Checking for loose connections on the X or Y Driver Boards and the MPU PCB board J2 and J3 Connections**.

Remove the table from the machine.

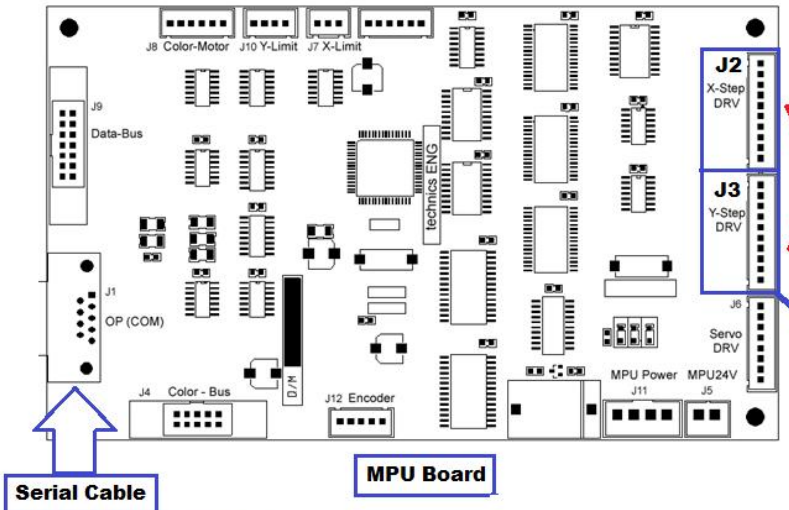
A) Power Off Machine and Unplug from wall outlet
B) Remove all Flat Phillip Screws from Table
C) Remove the Back Plate screws.
D) Slide table off the machine from the front.

Locate the X and Y Driver boards at the rear of the machine:

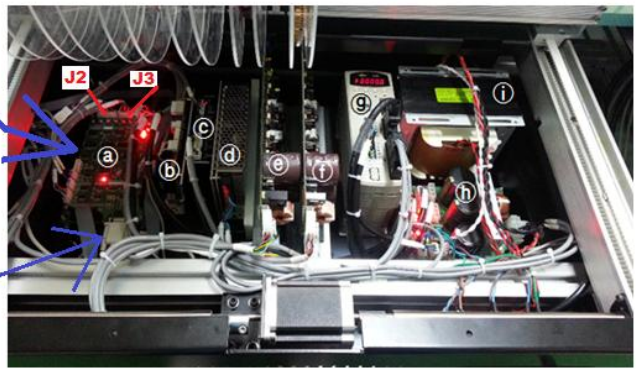


Reseat the Connections on the X or the Y Driver boards with power off

Check & Reseat Loose Connections on the MPU PCB Board:

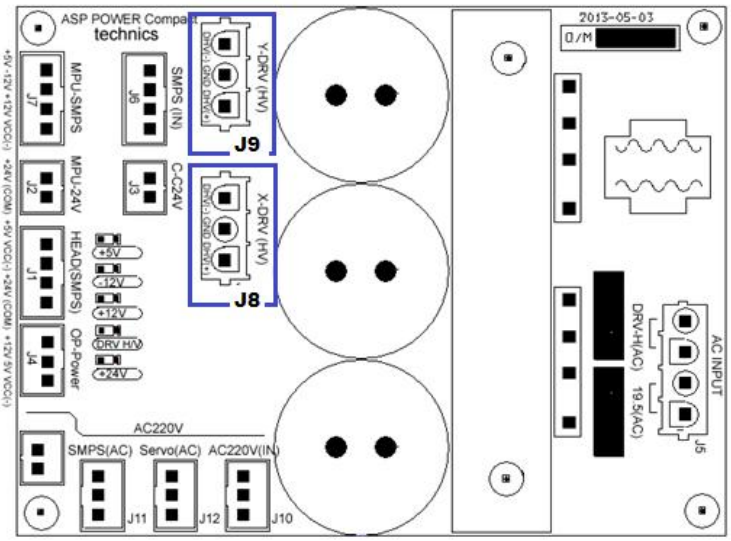


Find the Cable connections J2 and J3 and Reseat them
- **J2 - If issue is X**
- **J3 - If Issue is Y**

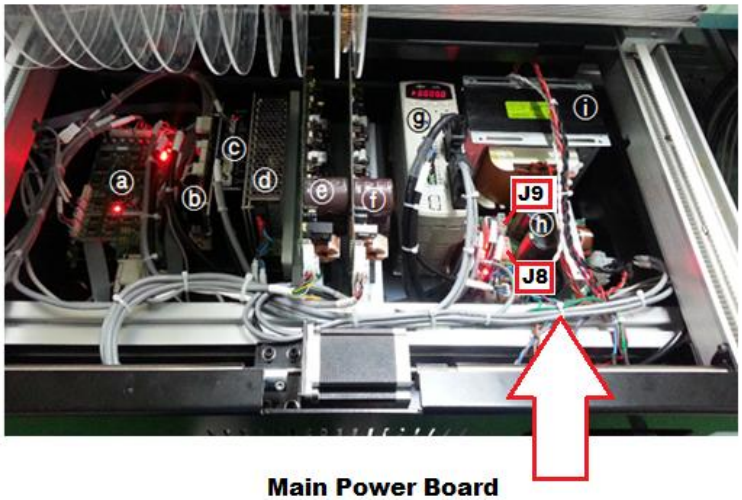


Reseat the Serial Cable on MPU Board

Check and Reseat Connections on Main Power Board:



Check and Reseat Connections on Main Power Board
J8 - For X Issue
J9 - For Y Issue



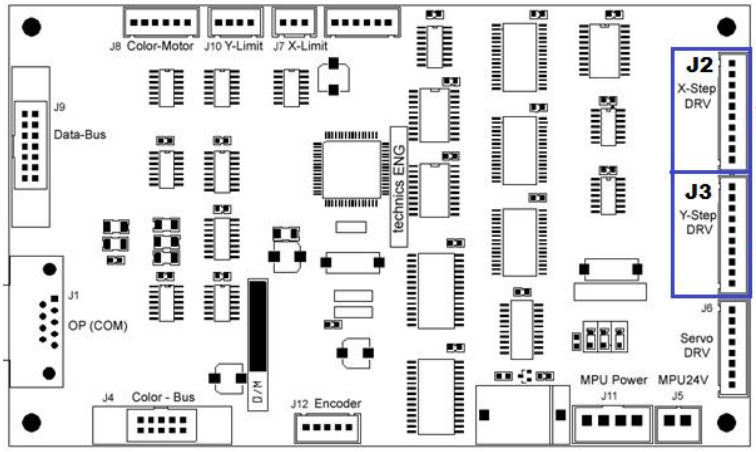
Main Power Board

Turn power back on and test machine X and Y movement using the Frame Arrow buttons on the control Panel. If not working move on to next step.

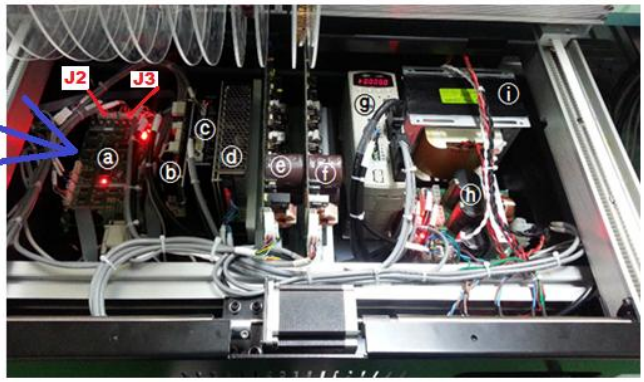
2) Testing for possible malfunctioning MPU PCB board or Cable.

****Power off Machine and Unplug from wall outlet****

A) Locate the MPU PCB Board and Swap Connection J2 to J3.



MPU Board



Power on the machine and Move the table by hand left and right for testing X, and Front to back for testing Y. With power to the machine and the machine powered on, the motors receive voltage and lock and you should not be able to move table easily by hand.

Diagnosing the issue with Y –Axis after Swapping the J2 and J3 Connections

1) **If table can still be moved easily by hand front to back but not left to right then the cause of the issue is Malfunctioning MPU PCB board**
2) **If you cannot move the Table front to back (Y direction) but can move the table left to right (X direction) then issue is bad J3 Cable.**
3) **If you can move the table easily in both X and Y direction with power on, then the issue is both Malfunctioning MPU PCB board and J3 Cable.**

Diagnosing the issue with Y –Axis after Swapping the J2 and J3 Connections

1) **If table can still be moved easily by Left to Right but Not Front to back, then the cause of the issue is Malfunctioning MPU PCB board**
2) **If you can move the Table front to back (Y direction) but cannot move the table left to right (X direction) then issue is bad J2 Cable.**
3) **If you can move the table easily in both X and Y direction with power on, then the issue is both Malfunctioning MPU PCB board and J3 Cable.**

4) **Testing the Motor with Multi Meter:**

If there is no Red light on either board but table still does not move when using frame arrow buttons on the control panel, or when power is on the machine, the table is easily moved in X only or Y only by hand, then the issue can be:

1) Broken or disconnected X or Y Belt
2) X or Y Motor malfunctioning.

For inspection of the X and Y belt can be done visually with wooden cover table removed, if belt is broken or not connected to the motor call Service at 877-793-3278 for technical help reinstalling it or replacing it.

Checking the motor with Multi Meter to prove its condition:

Set you Multi Meter to Checking resistance (Ohms) ***(Follow instructions that came with your meter)***

1) Locate the X or Y motor connection and disconnect it.
2) Insert your Black Probe from multi meter into the front of the connector and meter across the colored wires as noted below.

Red Wire to **Blue Wire** = **2.6 - 3.0 ohms**
Red Wire to **Yellow Wire** = **2.6 – 3.0 ohms**
Red Wire to **Brown Wire** = **2.6 – 3.0 ohms**
Blue Wire to **Yellow Wire** = **open**
Blue Wire to **Brown Wire** = **open**
Yellow Wire to **Brown Wire** = **open**

If your readings are different than what is shown above then the Motor is malfunctioned and needs to be replaced.