3D SYSTEMS University

Cube 3D Printer

“Lesson – Troubleshooting Machine Issues”

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Temperature Error

Symptom	Test	Cause	Solution
Temp Error x4 (x=Print Jet number 1,2 or 3)		Heating Profile out of specification	Try Heating print jet in PJ-Con. If continued fail contact Cubify Support for warranty print tip replacement
Temp Error x3 (x=Print Jet number 1,2 or 3)		Temperature measuring circuit has intermittent connection	Check connections between wire bundle and print jet sensor board and between sensor board and breakout board are secure. If OK contact Cubify Support for warranty print jet replacement

Temperature Error (cont.)

Symptom	Test	Cause	Solution
Temp Error x1 (x=Print Jet number 1,2 or 3)		Temperature measuring circuit has a short circuit	Contact Cubify support for warranty replacement of Print Jet and Print Tip.

File Read Errors

Symptom	Test	Cause	Solution
File: 0/0 on screen when Print icon selected	Try different USB stick	Faulty USB stick	Contact Cubify support for warranty replacement of USB Stick
	Check USB connection to Main Board	Ribbon Cable Disconnected	Connect USB module to Main Board
		Faulty USB module	Contact Cubify support for warranty replacement of USB Module

File Read Errors (cont.)

Symptom	Test	Cause	Solution	Notes
Print Stops at Line XXXX	None	USB stick disconnected	Restart print, take care not to bump or disconnect USB stick during print	File is transferred continuously during print; if connection is lost, print will fail
		File Read Error	Re-build .cubex file and re-print	
			Re-name STL file, re-build .cubex file and re-print	Long file names can cause issues with firmware
	Try a different USB stick	Faulty USB stick	Contact Cubify support for warranty replacement of USB Stick	

Filament Flow Fail

Run tests in the PJ CONN menu

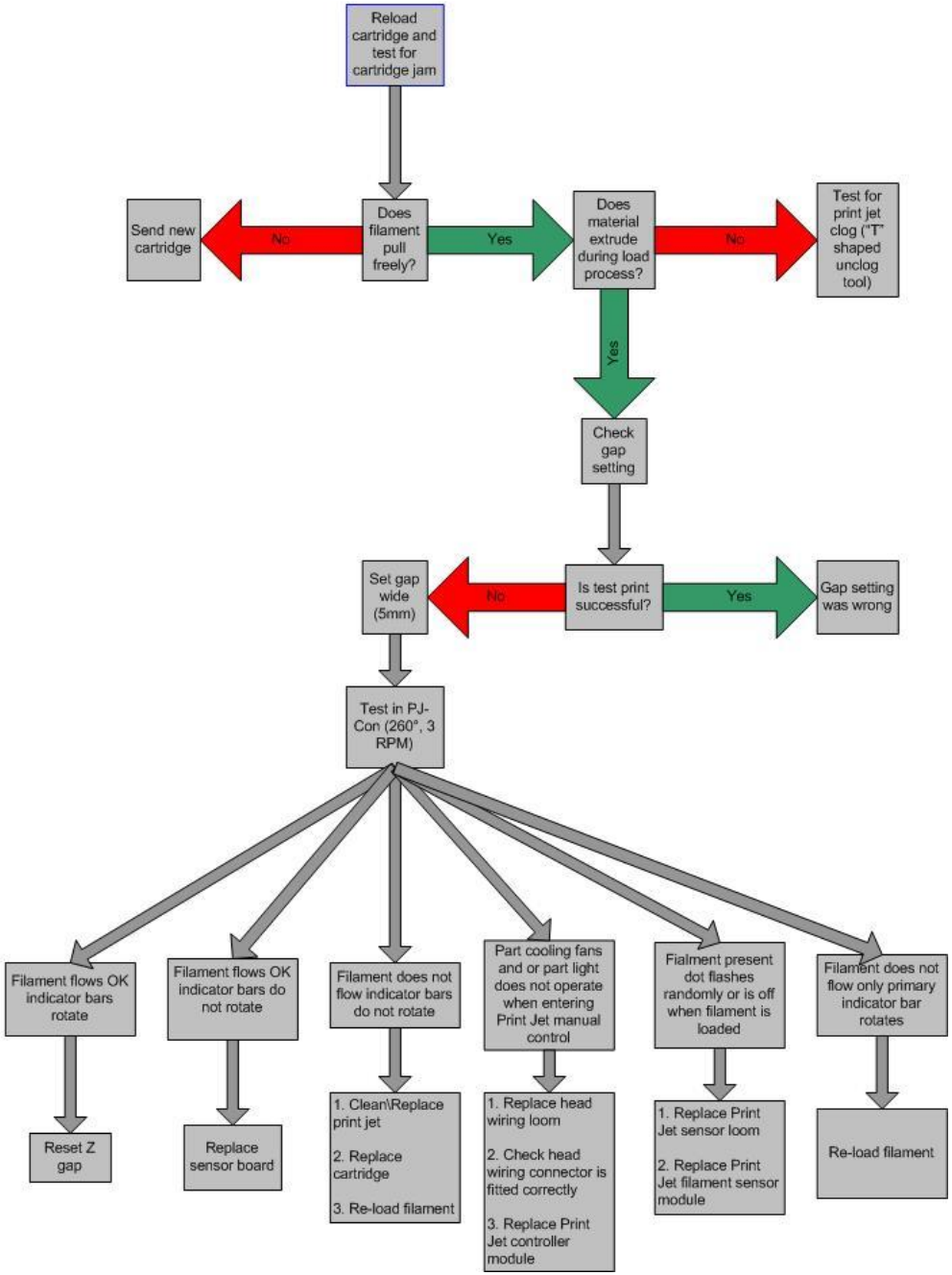
Symptoms	Test	Cause	Solution	Notes
Filament Flow Fail	Filament flows OK indicator bars rotate	Print Jet too close to bed so unable to print	Reset Z gap	Tight Z-gap does not allow filament to flow freely
	Filament flows OK indicator bars do not rotate	Sticker missing or damaged on drive or idler	Replace sensor board	Sensor board tells machine whether filament is flowing
		Faulty sensor board		
	Filament does not flow indicator bars do not rotate	Blocked Print Jet	Clean\Replace print jet	
		Cartridge jammed	Replace cartridge	
		Incorrectly inserted filament	Re-load filament	Filament can catch on lip of print jet

Note: Filament flow fail continues on next slide.

Filament Flow Fail cont.

Symptom	Test	Cause	Solution
Filament flow fail cont.	Part cooling fans and or part light does not operate when entering Print Jet manual control	Faulty head wiring loom	Replace head wiring loom
		Head connector loose or not seated properly	Check head wiring connector is fitted correctly
		Faulty Print Jet controller module	Replace print jet controller module
	Filament present dot flashes randomly or is off when filament is loaded	Faulty Print Jet sensor loom	Replace Print Jet sensor loom
		Faulty Print Jet filament sensor module	Replace Print Jet filament sensor module
	Filament does not flow only primary indicator bar rotates	Incorrectly inserted filament	Re-load filament

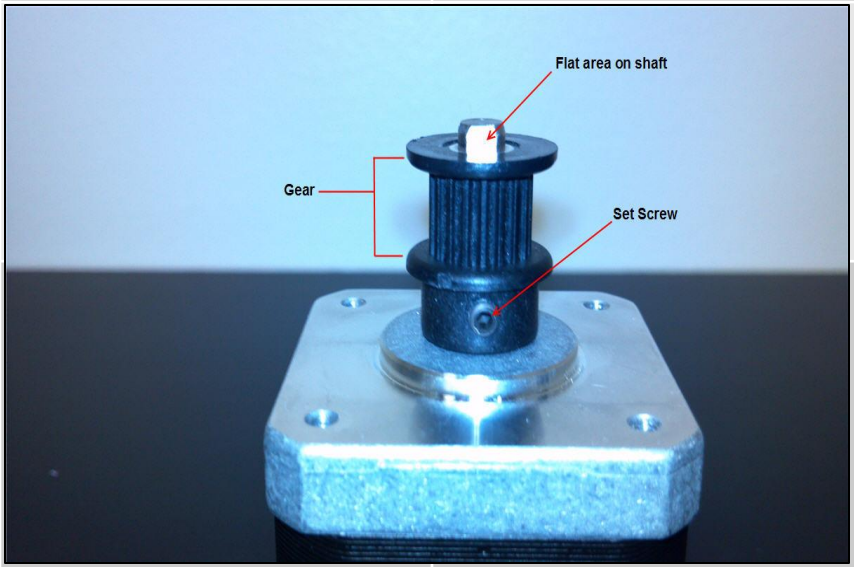
CubeX Filament Flow Failure Troubleshooting Process



Z-gap Loses Position

Symptom	Test	Cause	Solution	Notes
Z-Gap loses its position	None	Print jet 2 fan fitted	Duo: move PJ2 fan to PJ3 position	Electrical field generated by fan can affect limit switch
			Trio: Remove PJ2 fan	
		Old firmware	Update firmware to version 1.06 or newer	
		Non Cooltron part cooling fans	Change part cooling fans to Cooltron	Non-Cooltron fans generated stronger electrical field

Shift in Print in X or Y axis

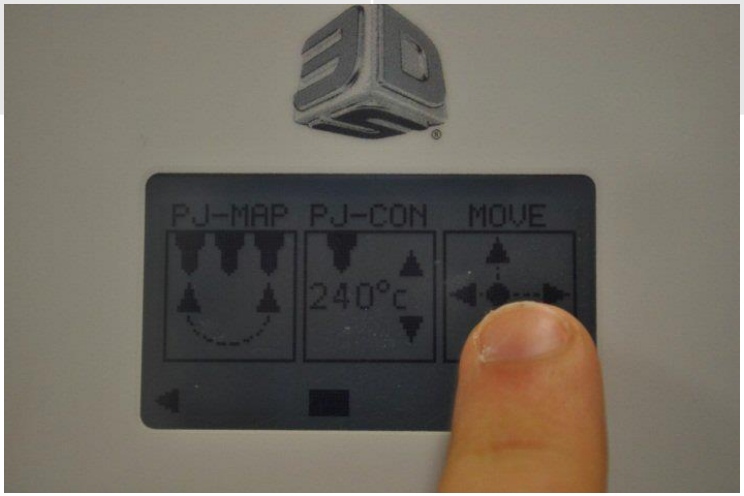
Symptom	Test	Cause	Solution
Print Shift in X or Y axis (this is more common in the X axis)		Incorrect stepper motor voltage	Adjust stepper motor chip voltage (refer to CubeX course 3.6)
		Loose Belt	Tighten belt as necessary
		Loose pulley on stepper motor	Align pulley screw with flat on motor shaft & re-tighten (Refer to CubeX course 3.8 for assistance)

Z Axis Will Not Move Up

Symptom	Test	Cause	Solution	Notes
Z will not move up	In manual move is there a "Z" in the lower left corner of the screen when carriage in middle of bed	Carriage over print pad magnet	Move carriage to different position	Movement stops in all axis when a limit switch is activated
	In manual move is there a "Z" in the lower left corner of the screen when carriage to one side	Faulty Z limit switch	Replace Z limit switch (refer to CubeX course 3.5 for instructions)	
		Loose Z-coupler	Align coupler set screw with flat on motor shaft & re-tighten all 4 set screws	

Touchscreen Flashing

Symptom	Test	Cause	Solution
Touch screen flashing or parts missing		Old firmware	Update firmware to version 1.06 or above
		Old screen (w/o capacitor)	Replace screen



Print Pad Collides with Print Tips

Symptom	Test	Cause	Solution	Notes
Print Pad does not stop rising, collides with print tips.	Check for print pad magnet	Magnet missing	Re-attach magnet in correct position	Magnet activates Z-Limit switch
			Contact Cubify support for warranty replacement of Print Pad	
	Check Z-limit Switch	Weak or bad limit switch	See Course 3.5: Replacing/checking limit switches	Limit switches are both sensitive and fragile. Misalignment or damage will affect performance.

X,Y Limit Switch Issues

Symptom	Test	Cause	Solution
Print Jet Carriage does not stop moving at X or Y limits	Check adjustment and function of limit switches	Weak or bad limit switch	See Course 3.5: Replacing/checking limit switches

Machine Does not Power On

Symptom	Test	Cause	Solution	Notes
Machine Does not Power on	Check Power Supply	Power supply not connected	Ensure secure power connections at wall outlet, power brick, and Main Board PCB	
	Check Main Board PCB LEDs (2 red)	Machine Electronics Short Circuit	Contact Cubify support for warranty replacement of Main Board, all Cartridge Bays and Breakout Board	Short circuits typically occur if repairs are attempted while machine is plugged in.
		Bad Main Board PCB	Contact Cubify support for warranty replacement of Main Board PCB	

Activation Error

Symptom	Test	Cause	Solution	Notes
“Activation Error” on screen when starting up machine	Check Connections from Bay #1 to Main Board PCB	Cartridge Bay #1 not connected to Main Board	Ensure secure connection from Cartridge Bay #1 to Main Board	Cartridge Bay #1 Contains serial number information and must be programmed to match main board
		Bad #1 Cartridge Bay	Contact Cubify support for warranty replacement of Cartridge Bay #1	