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ZPrinter[®]310 Troubleshooting Guide

Rev B



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<u>SYMPTOM</u>	<u>CAUSE / PROBLEM</u>	<u>LIKELIHOOD</u> + HIGH - LOW	<u>SOLUTION</u>
Error 1006 Message (Head Temp too high)	Print head failure	+	Replace print head
	Binder bottle not plugged into top cover	+	Check connection to binder bottle
	Out of binder	+	Refill binder bottle and bleed fluid system (see users manual chapter 6)
	Air in fluid system	-	Bleed fluid system (see users manual chapter 6)
	Binder tubing blocked or kinked	-	Check for kinks and replace tubing if necessary (see 08632 Benchwork manual)
	Binder valve at head card not connected or loose	-	Check valve connection
	Poorly seated carriage flex cable	-	Check carriage flex cable connections
	Bad carriage cable (open circuit)	-	Check carriage flex cable integrity, replace if necessary
	Bad head card	-	Replace head card
	Binder cap vent clogged	-	Check cap vent for blockage
	Pogo pin / pins are bent or broken	-	Change pogo card (See 08632 Benchwork manual)
	Fluid filter clogged	-	Replace or clean fluid filter (See 08632 Benchwork manual)
	Organisms growing in binder	-	Flush fluid system with bleach solution, change binder
Error 1000 Message (Unknown head error)	No print head installed	+	Install and purge new print head (see users manual chapter 12)
	Tape still in place over print head contacts	+	Remove tape and re-install pen
	Carriage cable damaged / not seated in connector	-	Check cable and connector
	Pogo pin / pins are bent or broken	-	Change pogo card (See 08632 Benchwork manual)
	Bad carriage cable (open circuit)	-	Check carriage flex cable integrity, replace if necessary
	Bad head card	-	Replace head card (See 08632 Benchwork manual)

Error 1002 Message (Rom read failed for head)	Print head not seated correctly	+	Re-seat pen and restart build
	Pogo pin / pins are bent or broken	-	Change pogo card (See 08632 Benchwork manual)
	Head card ribbon cable disconnected at either end	-	Check head card ribbon cable connections
	Tape still in place over print head contacts	-	Remove tape and re-install pen
Error 1003 Message (I2C read failed for head)	Print head failure, bad smart chip	-	Print head failure, bad smart chip
	Pogo card malfunction	+	Inspect pogo cards. Pins should be clean and not bent or broken
Machine will not boot or come online (Power LED is on)	Flash card not connected to ATX power supply	+	Check power connection to flash card
	Bad PCI card	+	Replace PCI Card (See 08632 Benchwork manual)
	Flash card corrupt or erased	-	Replace flash card or check master slave switch
	Dead CMOS battery on motherboard	-	Change CMOS battery. (See 08632 Benchwork manual)
	Voltage selector set wrong on power supply (selector set to 230V with 110V input)	-	Unplug printer and set selector to proper voltage
	PCI Card not seated properly	-	Check PCI to motherboard connection
	PCI EEPROM chip not seated or bad	-	Re-seat or replace EPROM chip
Online / Error lights flash and long sustained beep	Interlock switch not connected to Igus harness properly or malfunctioning interlock switch	+	Check connection to switch or replace switch (See 08632 Benchwork manual)
	Bad PCI card	-	Replace PCI Card (See 08632 Benchwork manual)
Binder dripping onto top deck	Septum / barb fitting leaking or binder tubing not properly inserted onto barb fitting at print head	+	Replace septum if necessary. Check tubing connection at barb fitting
Error 2303(0) message (Axis excessive position error)	Power cable not connected to middle connector on the PCI card	+	Check connection at PCI card.
	Slow Axis bearings low on grease or seized	+	Grease slow axis bearings or replace slow axis bearings if necessary.
	Slow Axis cable disconnected or forced on backward	-	Check slow axis cable connection
	Slow Axis motor failure	-	Replace slow axis motor. (See 08632 Benchwork manual)
	Slow Axis idler pulley seized	-	Change Slow Axis idler (See 08632 Benchwork manual)

Error 2303(1) message (Axis excessive position error)	Low on Fast Axis oil	+	Oil Fast Axis felt washers (see users manual)
	Fast Axis motor cable not properly connected at the head card	+	Check Fast Axis plug connection
	Debris in Fast Axis bearings	+	Inspect Fast Axis Bearings and clean or replace if necessary
	Fast Axis belt too tight	+	Adjust belt to proper tension (See 08632 Benchwork manual)
	Fast Axis bearing seize	-	Replace Fast Axis bearings
	Fast Axis tensioner seized	-	Replace tensioner
	Fast Axis motor failure	-	Replace fast Axis motor
	Fast axis anti-rotate bearing missing	-	Replace Anti-rotate bearing
Printing stripes	Print head failing	+	Replace print head
	Pogo Pins contaminated or dirty	+	Clean Pogo Pins with alcohol swab
	Service Station out of cleaning fluid	-	Fill cleaning fluid reservoir
	Powder build – up on service station cap	-	Clean service station cap
“Packet Timeout” message	Bad serial port on PC or printer	+	Replace motherboard
Printer will not turn on (won’t power up)	AC cord to printer not plugged in	+	Plug in printer AC cord
	Power switch failure	-	Check switch, test and replace if necessary
	Power supply failure	-	Change power supply
	Power supply shorted	-	Unplug AC cord, wait 10 seconds, reconnect AC cord and reboot printer
	Voltage selector set wrong on power supply (selector set to 110V with 230V input)	-	Replace power supply
Control panel won’t respond to inputs	Control panel switches malfunctioning	+	Replace control panel (See 08632 Benchwork manual)
	Bad PCI Card	-	Replace PCI Card (See 08632 Benchwork manual)
	Bad control panel cable	-	Replace control panel cable (See 08632 Benchwork manual)
	Control Panel cable not properly connected	-	Check control panel cable connections

Service Station Overflowing	Waste bottle not installed / halfway installed to valve at front panel	+	Check connection at waste bottle mount
	Waste tube clogged	-	Unclog or replace waste tube
	Waste bottle vent clogged	-	Check and unclog cap vent or replace cap
	Waste Bottle not plugged in properly	+	Check connection of Waste Bottle to check valve
“Before printing you must fix this problem” Message	Main harness disconnected at PCI card.	+	Check main harness connection at PCI card
Binder leaking from back of machine	Binder filter leaking	+	Check filter o-ring and filter body for proper assembly
Build piston is stuck and or will not move through its full range of travel	Wet piston seal has dried against build box wall	+	Replace piston seal (see 08632 Benchwork manual)
	Debris jamming the piston	-	Check for any debris and remove; clean the build box walls if ant buildup has occurred
	Energizer jamming the piston	-	Replace energizer and seal (see 08632 Benchwork manual)
	Faulty PCI card	-	Replace PCI card (see 08632 Benchwork manual)
Build piston will not come all the way to the top of the build box	Piston positions incorrect. Pistons not re-zeroed after PCI / E Box replacement.	+	Re-zero pistons
Excessive overspread into service station / gantry jams	Feed piston raised too far before spreading	+	Clean away excess powder, clean print head and reboot printer
Uneven or rough spreading	Powder is contaminated or over-recycled	+	Discard old powder and fill feed box with fresh powder
	Roller scraper worn	-	Replace roller scraper (See 08632 Benchwork manual)
	Binder/powder caked on roller	-	Check scraper for wear or clean roller
	Spreader roller motor failing	-	Replace spreader roller motor (See 08632 Benchwork manual)
	Roller belt skipping teeth		See 09813 Service bulletin for instructions

Parts weak, crumbly, wet or caked with powder	Print head failing	+	Replace print head
	Incorrect saturation setting	+	Set correct saturation for powder /binder system being used
	Wrong binder being used	+	Replace binder with correct formula
	User recycled binder	-	Replace binder with correct formula
	Powder is contaminated or over-recycled	-	Discard old powder and fill feed box with fresh powder
Excessive powder on top deck	Snowplows not attached or severely worn	+	Attach snowplows correctly or replace
Error light when booting	Head card PLD not programmed	+	Program head card PLD
	Carriage ribbon cable not connected at either end	-	Check for proper ribbon cable connection
Squeaking noise from inside cabinet while raising or lowering the pistons	Lead screws running without lubricant	+	Grease lead screws
Slow axis belt skipping teeth / chattering	Slow axis belt too loose	+	Tighten Slow Axis belt to proper tension
	Slow Axis idler pulley seized	-	Replace slow axis idler (See 08632 Benchwork manual)
Gantry slams and carriage is not parked at service station after booting	Slow Axis zeroed in wrong location	+	Re-boot printer
	Slow axis motor encoder malfunctioning or wired improperly	-	Replace or re-wire slow axis motor encoder (See 08632 Benchwork manual)
	Bad head card	-	Replace head card (See 08632 Benchwork manual)
Carriage slams and will not park at service station after booting	Fast Axis zeroed in wrong location	+	Re-boot printer
	Fast axis motor encoder malfunctioning, wired improperly or disconnected from head card	-	Replace, reconnect or re-wire fast axis motor encoder (See 08632 Benchwork manual)
	Bad PCI Card	-	Replace PCI Card (See 08632 Benchwork manual)

Fast axis belt skipping teeth / chattering	Fast axis belt too loose	+	Tighten Fast Axis belt to proper tension
Can't find printer on network	Poor Ethernet connection or improper setup	+	See 08606 Ethernet setup procedure for instructions
Short Print Head Life	Service Station out of cleaning fluid	+	Fill cleaning fluid reservoir
	Powder build – up on service station cap	+	Clean service station cap
	Pogo Pins contaminated or dirty	-	Clean Pogo Pins with alcohol swab
	Print head not seated correctly	-	Re-seat pen and restart build
	Pogo pin / pins are bent or broken	-	Change pogo card (See 08632 Benchwork manual)
	Concentration of color binder too high	-	Bleed fluid system and verify correct color binder concentration before restarting
	Air bubbles in fluid system	-	Bleed fluid system (see users manual chapter 6)
	Contaminated binder	-	Flush fluid system with bleach solution, change binder
Error 30004 message	Igus Ribbon cable disconnected at either end	+	Check Igus ribbon cable for proper connection