



Designjet SD Pro Scanner

Service manual

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Electrical Shock Hazard

Serious shock hazard leading to death or injury may result if you do not take the following precautions:

- Ensure that the AC power outlet (mains) has a protective earth (ground) terminal.
- Disconnect the product from the power source prior to performing any maintenance.
- Prevent water or any other liquids from running onto electrical components or circuits, or through openings in the enclosure.

Electrostatic Discharge

See [Electrostatic Discharge \(ESD\) Precautions on page 48](#) for precautions you should take to prevent damage to the printer circuits from electrostatic discharge.

Safety Symbols

General definitions of safety symbols are given immediately after the table of contents.

WARNING! The Warning symbol calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a Warning symbol until the indicated conditions are fully understood and met.

CAUTION: The Caution symbol calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution symbol until the indicated conditions are fully understood and met.

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Using this Manual

Purpose

This Service Manual contains information necessary to troubleshoot and service:

- HP Designjet SD Scanner Pro

For information about using the product, see the corresponding user guide.

This Service Manual is about the Scanner and the integration with the printer as a copier. In order to troubleshoot the printer, see the corresponding Service Manual for the printer.

Readership

The procedures described in this Service Manual are to be performed by HP Certified service personnel only.

Part Numbers

Part Numbers for service parts can be found in [Parts and Diagrams on page 43](#).

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1 Troubleshooting

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- [Touch screen fails](#)
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Troubleshooting tips

1. First record whether the problem is with the Printer, the Scanner, or the Touch Screen.
2. Make sure that the scanning area is completely clean.
3. Test 20: Noise Test can help you find where the scanning area is dirty.
4. The SCAN dump files can help you to understand the light profile of the affected scanner.
5. Remember, in order to cancel when copying, press the **Cancel** button on the Touch Screen and the **Cancel** button on the printer.

Is the problem with the Printer or the Scanner?

If you experience the following symptoms, the problem could be related to the scanner:

- System Error on the Touch Screen.
- LED's flashing on the Scanner Operator Panel.
- WIDEsystem error message.
- Vertical lines (either color or black) in the scanned image.

If you experience the following symptoms, then perform an Image Preview and send a Test Print:

- Image Quality Problems.
- No Output
- Output is not as expected.

If the Image preview fails, this points to a problem with the Scanner. If the Test Print fails, this points to a problem with the Printer.

Image-quality problems

If you have Image Quality problems in any prints, try the following:

1. Print out a file already stored or print out a demo file.
 2. Once the print is finished, insert it into the Scanner.
 3. Once scanned, print out the scanned image.
- If the scanned image already shows the problem, then the problem is associated to the scanner.
 - If the scanned image looks fine, but the print looks incorrect, then the problem is most likely associated to the printer

Output problems

If the output is not as you expected it to be, try the following:

- Check all the settings in the Software: Color Settings and Margins.
- Check media settings: Media profile (in software) and media loaded in the printer (front panel selection) should be the same.

- Perform Color Calibration (both Scanner and printer).
- Check the Preview Image.

If there is no output at all, then try the following:

- Check that both the scanner and the printer are correctly connected to the network.
- Check the selected settings: List, Collate, Scan to file...

Troubleshooting System Error Codes

Chapter 2, [System Error Codes on page 28](#), contains a list of system error codes and their respective descriptions and recommended corrective actions. Only try one recommended action at a time and check if the error code has disappeared.

Using the Service Tools from the Touchscreen

Here we briefly describe the various tests found in the software Service Tools menu (called SCANTest 6 in previous systems).

The purpose of the Service Tools is to support the troubleshooting and adjustment of the Scanner.

To access the software you must go to the **Setup** tab and to: **Options, System, Service** (this part is password protected, the password is '**support**').

When Service Tools has been started, the Scanner is switched ON in Test Mode, and the Diagnostic LED on the Operator Panel is turned ON.



NOTE: The word camera is used in some service tests, and in this document to refer to the CIS elements.

Service Tools Menu

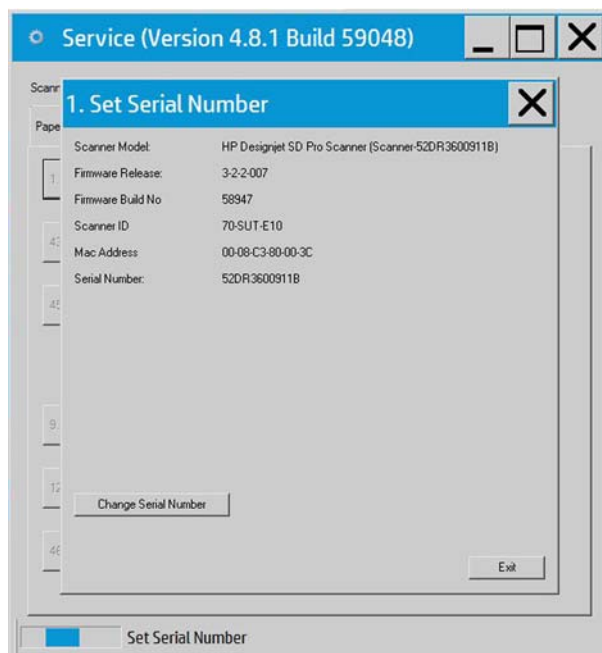
- Test 1: Set Serial Number
- Test 6: Motor Test
- Test 9: Oscilloscope view cameras
- Test 11: Manual Camera Alignment (Vertical alignment and stitching)
- Test 12: Manual Scaling Adjustment
- Test 20: Streak Test
- Test 42: Backup Calibration and statistics
- Test 43: Restore Calibration and statistics
- Test 45: Operator Panel Key Test
- Test 46: Paper Sensor Test
- Test 47: Operator Panel LED Test

If Service Tools is started when the scanner is in Error Mode, the Error Code Number and a short description of the error will be displayed on the screen.

Test 1: Set Serial Number

This test displays general information regarding the scanner. When executed, the test displays the following:

- Scanner Model:
- Firmware Release:
- Firmware Build:
- Scanner ID:
- Mac Address:
- Serial Number:



Test 6: Motor Test

This test checks the functionality of the Stepper Motor and any associated electronics.

When the test is executed, a menu appears that allows you to select the motor speed and the motor direction.

If the Stepper Motor fails to run when the test is executed, then the Stepper Motor should be replaced.

Test 9: Oscilloscope View

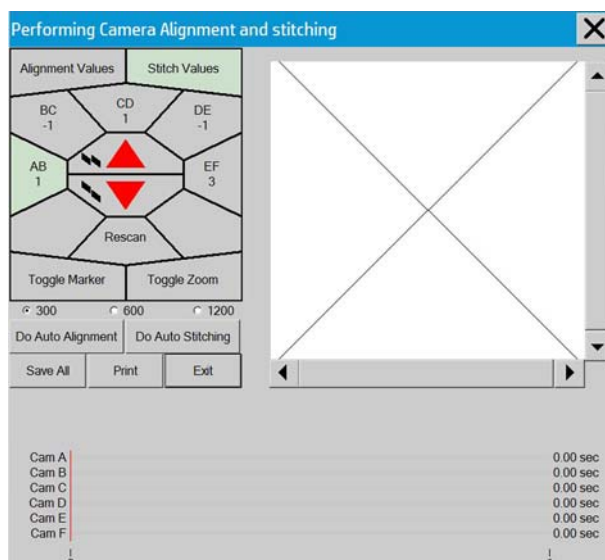
This test contains a Software Oscilloscope that allows you to check the light profile of the CIS elements:

- Uncorrected light profile shows the raw data from the CIS module.
- Corrected light profile shows the calibrated data.

Test 11: Manual Camera Alignment

Allows you to adjust either Vertical Alignment or Stitching between 2 CIS modules:

1. Load the calibration sheet.
2. Select Alignment or Stitching.
3. Select the two CIS modules to adjust (AB, BC, etc...).
4. Use the arrows to either increase or decrease the value until the preview of the transition area between both CIS modules look correctly aligned or stitched.



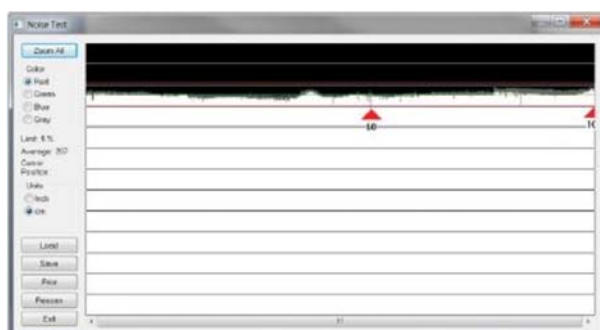
Test 12: Manual Scaling Adjustment

This test allows you to adjust the Y-Axis Scaling.

The scaling (dpi) in the mechanical scan direction (Y-Axis) depends on the speed of the stepper motor relative to the scanline Exposure Time. The default motor speed can be changed $\pm 1\%$, either from Test 12 or by using the '**Scanner Setup/Correction factor ...**' option of SW copying. The correction factor is stored in the Flash Memory on the Scanner Controller Board.

Test 20: Streak test

The purpose of this test is to detect and locate the possible cause (dust, dirt, scratches,..) of vertical lines running from top to bottom of the scanned image.



This test is very useful if there are image quality issues such as streaks throughout the scan (Scan direction).

It can be determined if the streaks are dust that are:

1. Present in the scanner (Dark streak that goes below the average line).
2. Present during Scanner Maintenance (white streak that goes above the average line).

Insert SM calibration sheet when asked.

Test 42: Backup Calibration and statistics

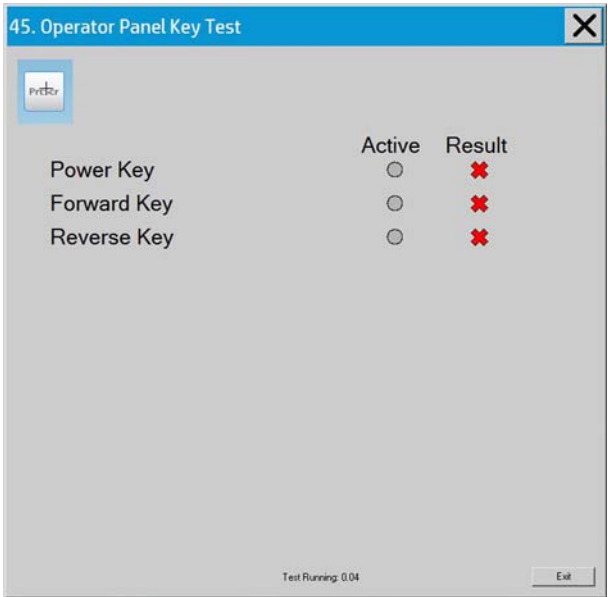
Use this option to backup the calibrations and the scanner accounting values onto a USB drive.

Test 43: Restore Calibration and Statistics

Use this option to restore the calibrations and accounting values previously backed up onto a USB drive.

Test 45: Operator Panel Key Test

This test checks the functionality of the Keys on the Operator Panel. When pressing each of the keys, the test will show that the key has been activated, and will show if the result is correct or not.



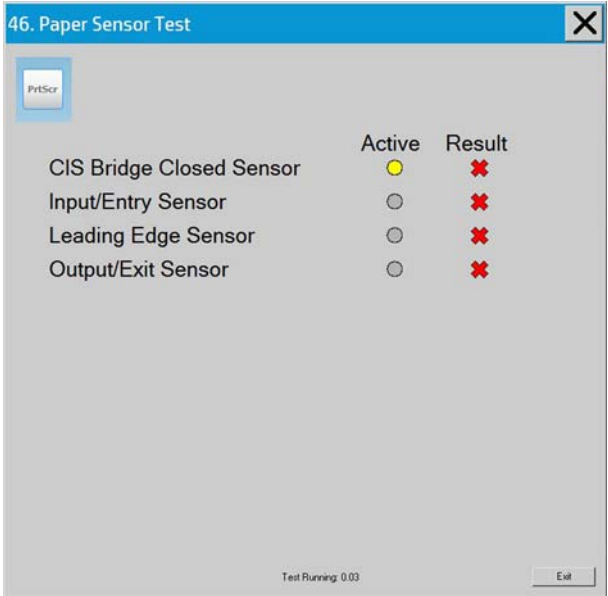
If the Key test fails, replace the Operators Panel which is included in the Right Side Cover.

Test 46: Paper Sensor Test

This test checks the functionality of the Media Sensors.

To test the Media Sensors, use a sheet of media to activate the different sensors one by one. When activated, the test will show that the sensor has been activated and will show if the result is correct or not.

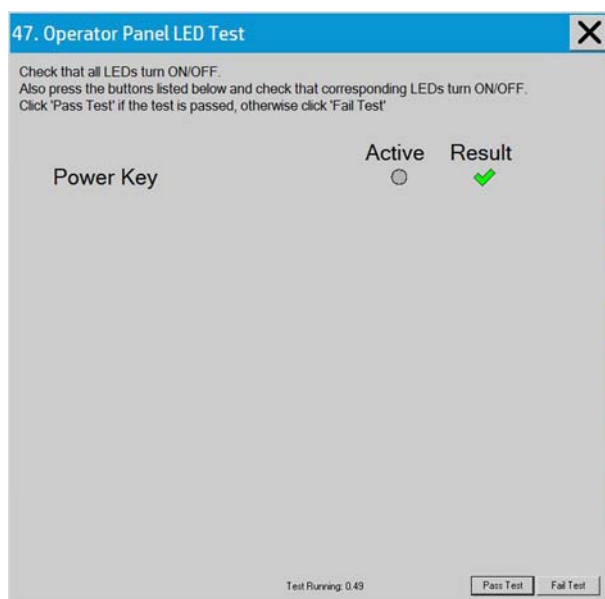
For testing the CIS Bridge Sensors; open and close the scanner cover.



If the test fails, then the problem will be related to corresponding Sensor.

Test 47: Operator panel LED test

This test checks the functionality of the LED Indicators on the Operator Panel. When the test is executed, all the LEDs are sequentially switched ON/OFF until Test 2 is terminated. If any of the LEDs fail, you will NOT get an error message, instead the LED will NOT switch ON or OFF. Additionally you are requested to press the Power button and see if the Power LED is switched ON. If the LED test fails, replace the Replace the Operators panel which is included in the Right Side cover.



Troubleshooting Issues

The following guide will help you to find a solution to some typical problems that some customers may experience. The problems **(P#)** that can be solved remotely through on-phone support and customer intervention are marked **C**. The problems that require on-site intervention performed by a Support Technician are marked **T**.

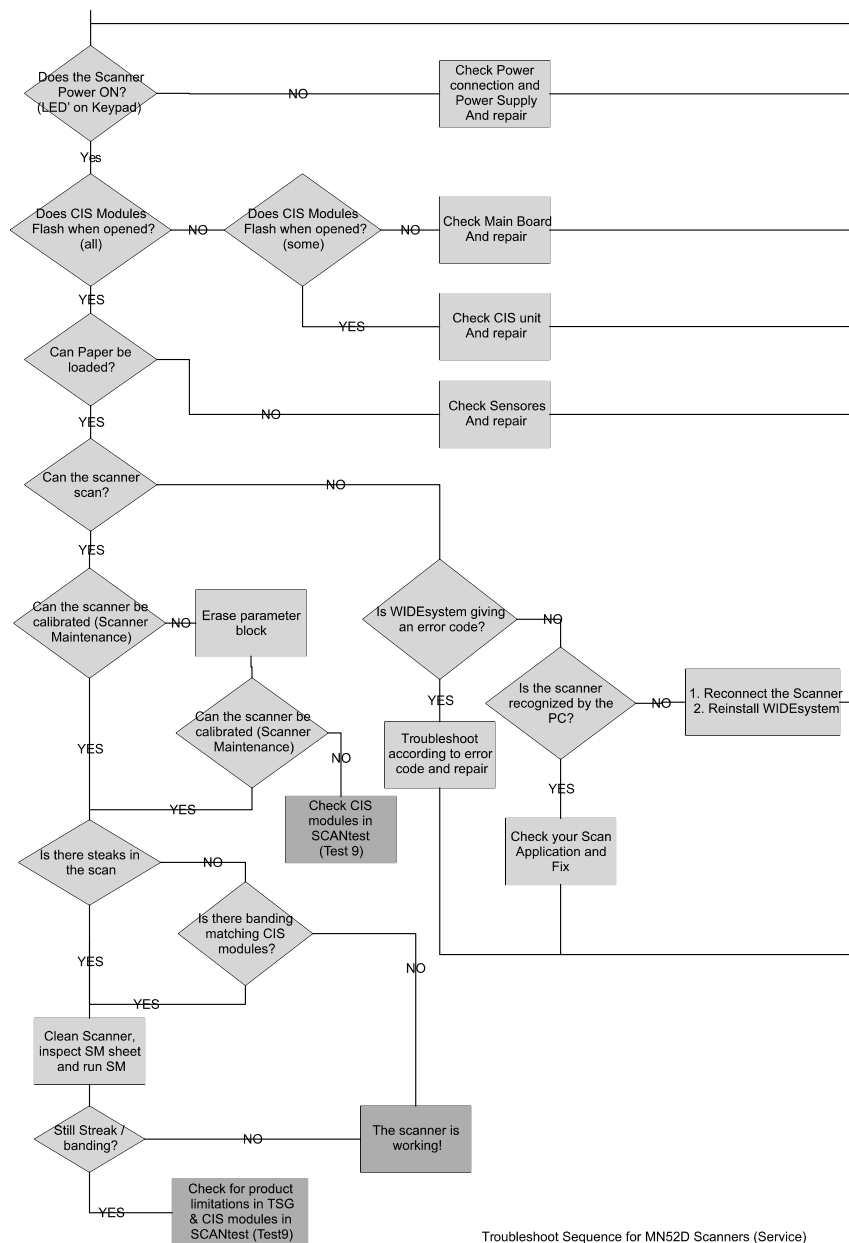


NOTE: Before sending a Support Technician to the customer, identify whether the problem is related to the scanner or the Panel PC (PPC).

If the problem is scanner-related, erase the parameter block and run the scanner maintenance. Then perform the system recover using the most recent version of the software.

If the problem is PPC-related, perform the system recovery using the most recent version of the software.

If the problem persists, try the solutions listed in the tables below.



Troubleshooting print-quality and copy issues

P#	Category	Problem	Q#	Question	Yes/No	C/T	Solution
1	Copy problem	The colors on one side of the copy do not correspond to the colors on the other side of the copy	1	Have you cleaned and calibrated your scanner recently?	No	C	CIS modules differences - The scanner needs to be cleaned and calibrated (see P25 and P25).
					Yes		See Q2
			2	Have you upgraded the system software to the latest version?	No	C	Upgrade system software
					Yes	T	CIS unit might need replacement

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
2	Copy problem	I get thin lines of wrong colors in my copy	1	Are the lines vertical and also present in your preview?	Yes	C	Erase the parameter block. Then clean and calibrate the scanner (see P25 and P25).
					No		See Q2
			2	Are the lines horizontal and equally spaced?	Yes	C	Check printheads by starting printhead test on Printer. By using the built-in test print function in the Designjet Scan Copy application, you can also get an idea whether the Printer is performing OK
					No		See Q3
			3	Are the lines horizontal, but irregular (maybe only 1 line)?	Yes	C	The lines could be caused by a data error. Upgrade system software
					No		See Q4
			4	Do you have a great number of regular spaced lines very close to each other and restricted to one side (1 camera) only?	Yes	T	You might have a CIS element error. Replace CIS unit

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
3	Copy problem	I get thick lines of slightly wrong colors in my copy	1	Are the lines vertical and also present in your preview?	Yes	C	The scanner needs to be cleaned and calibrated (see P25 and P25).
					No		See Q2
			2	Are the lines horizontal and equally spaced?	Yes	C	Check printheads by starting printhead test on Printer. By using the built-in test print function in the Designjet Scan Copy application, you can also get an idea whether the Printer is performing OK
					No		See P2.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
4	Copy problem	Some colors are not the same when I compare the master print with the copy	1	Is the scanner clean and calibrated?	No	C	See P1. Clean and calibrate the scanner (see P25 and P25).
					Yes		See Q2
			2	Do you use the correct media profile for the actual media?	No	C	If you are using e.g. Glossy Media for this copy, the media profile selected should also be for Glossy Media.
					Yes		See Q3
			3	Is the media profile valid?	No	C	Create a new media profile (see P26)
					Yes		See Q4

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
			4	Is the option 'Ink Printer Original' set in accordance with your original?	No	C	If original was printed using an Inkjet Printer, set this option (see P27)
					Yes		See Q5
			5	Is the media you are printing on the same type as the original?	No	C	e.g. Use Glossy Media to reproduce a Glossy original
					Yes	C	Create a new media profile (see P26)

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
5	Copy problem	Only a part of the master print is being copied	1	Have you selected 'Auto size'?	Yes	C	The scanner needs to be cleaned (see P24)
					No		See Q3
			2	Is the length too short and the width OK?	Yes	C	The problem may be with the Printer (not able to print close to the edges) or Panel PC (Hard Disk is full).
					No	C	Check that the margins that are set are not too big. Also check Scanner Media Offsets

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
6	Copy problem	Which setting will give me the best result when copying?	-	-	-	C	See section about media profile (P4). Use copy quality best. Choose the correct Type of original ("Map" for maps, "Photo" for photos, etc). Eventually go to Original Setup to fine adjust colors and sharpening. (See also online help for more details - button with "?" symbol)

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
7	Copy Problem	Nesting feature is not working	1	Is the correct printer selected?	No	C	Select the correct Printer
					Yes		See Q2
			2	Is the Hard Disk close to being full?	Yes	C	Free up some space, or try to run a nesting job with only 2 or 3 small pictures. If that works, see P27.
					No	C	Make sure that Nesting is set: Select: Output Layout Nesting optimized

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
8	Copy problem	The Collate Copy function does not work	1	Is your Hard Disk close to full?	Yes	C	Free up some space, or try to run a collate job with a smaller picture.
					No	C	Follow the step by step instructions in the online help under Collate Copy .

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
9	Copy problem	The lines are not accurate	1	Are the lines wavy and irregular?	Yes	C/T	C: The original could be curled or crumpled. Try to flatten the original (in case of very irregular waves there could be a mechanical problem with the scanner). T: check motor and belt drive tension
					No		See Q2
			2	Are the lines not sharp?	Yes	C/T	C: Are you using the correct copy method? Try sharpening.
					No		See Q3
			3	Are the lines broken and the errors situated in a vertical column between 2 columns?	Yes	C	You might have a visible stitching error (see P28).
					No	C	Check the dpi. In the case of too low resolution, jagged diagonal lines will appear.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
10	Copy Problem	One side of the preview is black	1	Have you upgraded the system software to the latest version?	No	C	Upgrade system software.
					Yes	T	Most likely a CIS module error. Replace the CIS unit.

Troubleshooting general scanner issues

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
12	System Error	What should I do when the program hangs?	1	Are you running a copy job?	Yes	C	Making a copy takes a lot of resources according to the settings. Wait till the copy is done before performing another action.
					No		Restart the system. If the problem comes back, reinstall the system.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
13	File problem	When I scan to file, the file is very big	1	Are you scanning in color?	Yes	C	Scanning large drawings will generate very big files. An A0 color drawing scanned at 300 dpi will generate a file size of approx. three Gigabytes when scanned in an uncompressed format. In order to reduce file size, select TIFF - pack bits as format. You can reduce size even more by selecting JPEG format, but this format will reduce picture quality.
					No		See Q2
			2	Are you scanning in gray tones?	Yes	C	Scanning large drawings will generate big files. An A0 gray tone drawing scanned at 300 dpi will generate a file size of approx. 300 Mbytes when scanned in an uncompressed format. In order to reduce file size, select TIFF - pack bits as format. You can reduce size even more by selecting JPEG format, but this format will reduce picture quality.
					No		In order to reduce file size on scanned B/W drawings, select TIFF group 4 compression.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
14	File problem	When I scan to file my application cannot read the file	1	Did you get an error message when creating the file?	Yes	C	Check that you have enough disk space and scan to file again, choosing TIFF uncompressed as format
					No	C	We only recommend to use the built-in viewer for file viewing. Large format drawing files may not load correctly in other viewers due to file size. Try to scan a smaller original (A4).

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
15	Network Problem	I cannot access the system from the network	1	Is the PC connected to the network?	Yes	C	Do basic network troubleshooting.
					No	C	Connect the PC to the Network.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
16	Scan to network	I cannot access network drivers	1	With the Panel PC connected to the LAN, can you access the Panel PC from another computer on the network?	Yes	C	Go to Q2
					No	C	Check the network performance and connection to the scanner Panel PC.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
			2	Is the folder of the server you are trying to map already mapped by another user in the Panel PC?	Yes	C	Windows does not allow the same server to be mapped by two different users on one computer. Use the access connection previously mapped or delete the connection and map a new access connection.
					No	C	Go to Q3
			3	Do you have permission to access and write to the network folder you are trying to map?	Yes	C	Go to Q4
					No	C	You cannot access this network folder. Select a network folder for which you have read and write permissions.
			4	Are you using the correct user name and password?	Yes	C	Try to map the network file from another computer by selecting Windows Explorer, Tools, Map network drive . If you are able to map the drive in this manner, you should also be able to map through the Panel PC.
					No	C	Use the correct user name and password.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
18	Scanner Calibration Problem	Scanner Calibration did not succeed	1	Did any error occur when performing the Scanner?	Yes	C	See Q2
					No	C	Clean and then run the scanner again (see P24 and P 25). If that does not help, see Q5.
			2	Error: Basic calibration was performed, but failed to stitch scanner or Could not find horizontal line or Could not read bar lines or Could not recognize the scanned IT8 picture .	Yes	C	Clean and then run the scanner again (see P24 and P 25). If that does not help, see Q5.
					No		See Q3.
			3	Error: Sheet not recognized .	Yes	C	Reinsert calibration sheet correctly and run the scanner again. If that does not help, see Q5.
					No		See Q4.
			4	Have you upgraded the system software to the latest version?	No	C	Upgrade system software. Clean the scanner and then run Scanner Maintenance again (see P24 and P 25).
					Yes	T	Check the CIS modules.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
19	System error	I cannot install my application on the system.	-	-	-	C	The copy system is only meant to handle the factory installed software and applications.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
20	Updating	How do I update the system?	-	-	-	C	Download the new system file from the the HP Support web site and copy into a USB drive. Go to System Options > Advanced > Update software, and follow the instructions.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
21	Start-up Problem	The system does not power up	1	Is the system dead (no LEDs are lit, the Panel PC screen is black, and no fan-noise can be heard)?	Yes	C	1. Check that all power switches on the equipment are ON. 2. Check if there is power at the wall outlet. 3. Check power cables between wall outlet and the individual units.
					No		See Q2.
			2	Does Panel PC start with the normal initial screen?	Yes	C	See Q5.
					No		See Q3.
			3	Does Panel PC start normally, but the software does not work?	Yes	C	Reinstall system software
					No		See Q4
			4	Is the Panel PC dead (no fan noise can be heard and no screen image appears)?	Yes	T	Troubleshoot the Panel PC.
					No		See Q5.
			5	Is the Scanner dead (no fan noise can be heard and no LEDs are lit)?	No		See Q6.
					Yes	T	Check, and if necessary replace: 1. Power Supply Unit 2. Scanner controller board
			6	Does the scanner hangup with all LEDs lit?	Yes	T	Try the following: 1. Erase parameter block 2. Update the system software 3. Replace the Scanner controller Board
					No		See P23.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
22	Mechanical Problem	I cannot load the original	1	Please try to load a new piece of A4 paper at the center of the scanner. Does this paper load?	Yes	C	You have a problem with your original. Please check that paper edges are not bent or curled in any way.
					No		See Q2.
			2	Can paper be loaded by pressing the "Forward" key?	Yes	C	See Q3.
					No	T	Try replacing the following: 1. Power Supply Unit 2. Feed motor (Stepper motor) 3. Scanner Controller Board
			3	Does the Ready LED turn ON when activating Original Sensor (insert paper)?	No	T	Check, and if necessary replace: 1. Paper/lid sensors 2. Scanner Controller Board
					Yes	C	Check the settings in the software for media loading.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
23	Error code	I get an Error Code, what do I do?	-	-	-	-	Re-power the system, and check if the error code reappears. If it does, see Q1.
			1	Have you upgraded the system software to the latest version?	No	C	Upgrade the system software. Check if Error Codes reappears. If it does, see system errors list in chapter 2.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
23a	Error Code	I still get an error code, what do I do?		Does the Diagnostic LED (and, in some cases also other LEDs) blink?	Yes	C	Lower Guide Plate to Normal position, start Preview Scan to obtain an Error Code or check if WIDSystem gives an Error Code. If it does, see system errors list in chapter 2.
		"No scanner found"	1	Does the scanner start normally?	No	C	See P23.
					Yes	C	See Q2.
			2	Are the interface cables (Ethernet) properly connected to the scanner and the Panel PC?	Yes	C	See Q3.
			3	Have you upgraded your system software?	Yes	T	1. Replace network cable 2. Replace Scanner Controller Board

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
24	Cleaning	How do I clean the scanner?	-	-	-	C	Clean the Glass Plate on both sides with mild detergent, and wipe thoroughly with a lint-free cloth until dry. Check for scratches. Deep scratches on the glass plate or pressure rollers means replacement of the part.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
25	Color Calibration	How do I color calibrate the scanner?	1	Do you have the correct and "as new" scanner maintenance sheet for the scanner?	Yes	C	Clean scanner (see P24). Insert the scanner maintenance sheet. Start scanner calibration. The process is automatic and will also include stitching.
					No	C	Get Correct/New Scanner Maintenance Sheet.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
26	Media Validation	What is media validation? How do I validate?	—	—	-	C	If the validate feature is chosen, a new color patch sheet is printed and can be scanned for validation. In this way it can be determined whether the produced color map has passed.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
27	Ink Printer Original	What is Ink Printer Original?	-	—	-	C	When the original has been printed on an Inkjet printer this option should be enabled.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
28	Visible stitching Errors	What is a visible stitching error?	-	-	-	C	A visible stitching error appears typically as a column of broken lines between 2 CIS modules. Normally it can be solved by running Scanner Calibration, which will perform an automatic stitching adjustment. With some curled or creased/crumpled originals it is necessary to straighten out the original to prevent it from lifting from the glass plate.

Troubleshooting Specific Scanner Issues

P#	Category	Problem	Q#	Question	Yes/No	C/T	Solution
29	Vertical lines (possible dust problem)	The image has a vertical, white or black line, which could be caused by dust. To verify that the line is caused by dust, preview the image and inspect the preview using the viewing section buttons.	-	-	-	C	Perform Scanner Maintenance: Cleaning and Scanner Calibration. Using Test 20 from Service Tools may help to identify dusty/ dirty areas.

P#	Category	Problem	Q#	Question	Yes/No	C/T	Solution
30	Firmware	You are receiving firmware-related errors.	-	-	-	C	Try upgrading the System Software.

P#	Category	Problem	Q#	Question	Yes/No	C/T	Solution
31	Stepper Motor	The Stepper Motor does not work.	-	-	-	C	Try the following: 1. Use Test 6: Motor Test to check the functionality of the Stepper Motor. 2. Replace the Stepper Motor. 3. Replace the scanner controller board.

P#	Category	Problem	Q#	Question	Yes/No	C/T	Solution
32	CIS unit	The CIS modules do not work	1	Are some CIS modules working when opening the scanner cover?	Yes	-	Replace CIS unit.
					No	-	If none of the CIS modules work when opening the scanner cover, replace scanner controller board.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
33	Skewing	There is a skewing problem	-	-	-	C	Try the following: 1. Ensure that the Scanner Cover is closed and latched. 2. Clean the rollers with isopropyl alcohol. 3. Check the rollers. 4. Replace the CIS unit.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
34	Media Loading	The media cannot be loaded or there are other media loading problems.	-	-	-	C	Try the following: 1. Check the Original Sensor (green LED when loading media), or use Test 46: Paper Sensor Test to check the functionality of the sensor. 2. Use Test 6: Motor Test to check the functionality of the Stepper Motor.

P#	Category	Problem	Q#	Question	Yes/ No	C/T	Solution
36	Software	You are experiencing problems with the software	-	-	-	C	Try the following: 1. Reload the software. 2. After reloading the software, set-up the system on the network again (if necessary). 3. If the problems persist, reinstall the software, and delete the user's files (press F12).

P#	Category	Problem	Q#	Question	Yes/No	C/T	Solution
37	Firmware	All of the LEDs in the scanner's front panel are flashing when you turn on the scanner (as shown in the image below), indicating that printer firmware needs to be upgraded. NOTE: This describes a different situation than when the scanner is turned on in special boot mode, in which the LEDs also flash.	-	-	-		The most probable reason for this situation is that the last system software upgrade attempt was not successful. To remedy this situation, upgrade the system software.

Most common Image Quality issues

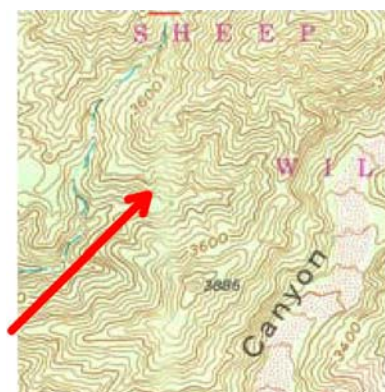
Banding Problems

Bad/no gray balance calibration (CIS module to module match).



Image Quality Problems

Scanning originals on a CIS scanner, that then have folds or are crumpled, is often perceived as a scanner defect. In reality the defect is a technology limitation due to the original's very short distance from sensor to surface, also called "Focal Length". We also have a very short "Focus Depth", meaning, if the original is NOT in contact with the glass plate, it is very likely to be out of focus.

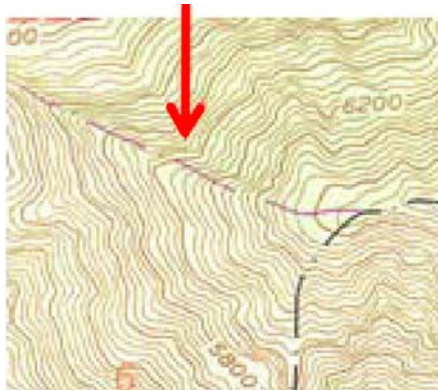


Dust Problems

There are image quality problems that are not related to hardware errors. These could be due to either insufficient cleaning, bad calibration, or limitations in the CIS technology.

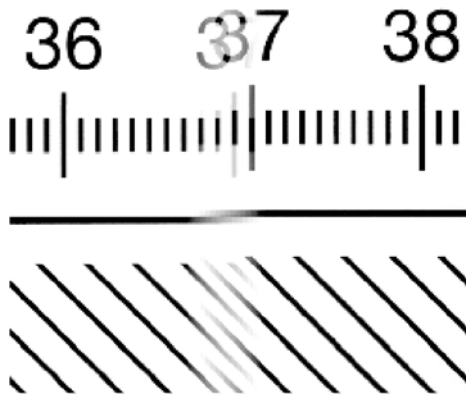
Streaks running in the scan direction which seem to appear and disappear during the scan are most likely caused by dust. Clean the scanner and the original. The streaks are often a darker shade of color.

Streaks that run in the scan direction, that are color dependent or a lighter shade, are often calibration related. Dust that was present in the scanner during calibration, but has been cleaned away since.



Stitching Problems

Other issues could be that the scanner simply needs to be calibrated, either because the parameter block has been erased, never been calibrated, or that the scanner has been moved.



Cleaning the Scanning Area

The following parts must be cleaned using a soft lint-free cloth and a mild, streak-free, cleaning detergent. Alternatively, the parts may be cleaned without the use of cleaning detergents by using a damp micro-fibre cleaning cloth (soak the cloth with water and wring until damp):

- Main scanner cover. Clean the main scanner cover to ensure that no dust is introduced into the scanning area when you scan an original.
- White pressure rollers
- The Glass Plate. Do not recommend that customers clean the underside of the glass plate; it should only be cleaned by an HP support technician.
- The Feed Rollers. These may be cleaned with a damp micro-fibre cleaning cloth.

Once all these procedures have been completed, the scanner will be ready to work correctly.

The Cleaning Procedure

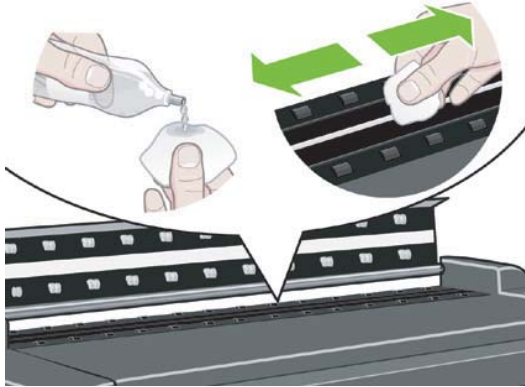
When cleaning any part of the scanning area DO NOT use abrasives, acetone, benzene or fluids that contain these chemicals. Do not spray liquids directly onto the scanner glass plate or anywhere else in the scanner.

1. Turn the scanner power off.
2. Disconnect the scanner power cable.

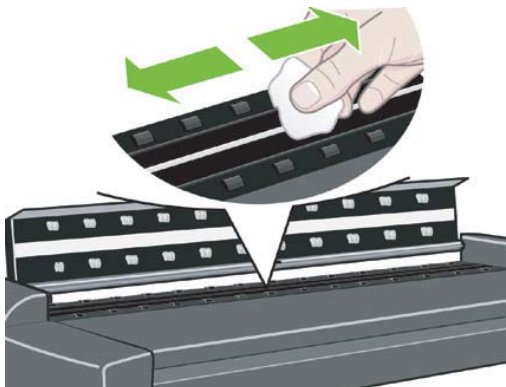
3. Open the Guide Plate by pushing the left and right locking levers inwards, and flipping upwards to expose the scan area.



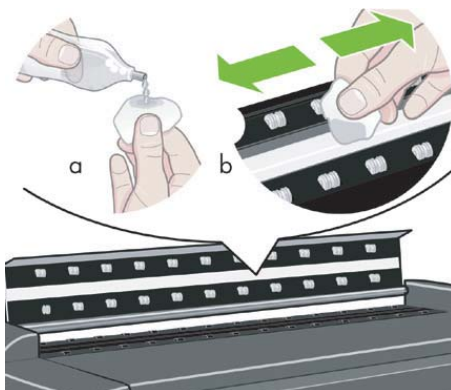
4. Gently wipe the Glass Plate. Clean the glass with a lint-free cloth and a mild, streak-free, glass cleaner.



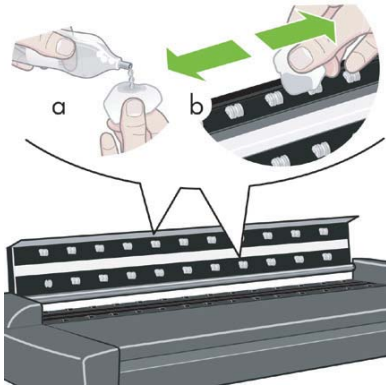
5. Dry the glass completely using a separate clean, dry lint-free cloth like the one provided with the maintenance kit.



6. Clean the white pressure rollers. Wipe the white metal area with a lint-free cloth and a mild, streak-free, glass cleaner.



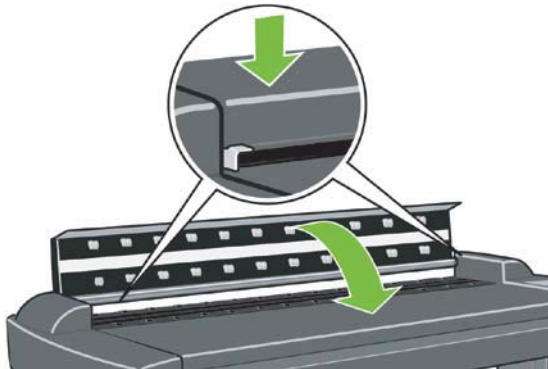
7. Clean the platen rollers. Wipe the rollers with a lint-free cloth and a mild, streak-free, glass cleaner.



8. Dry the platen and rollers completely using a separate clean, dry lint-free cloth.



9. Close the Guide Plate.



10. Use the dust sheet to protect the Scanner when not in use.



CAUTION: Ensure that the scanner is turned off before covering it with the dust sheet. The scanner will overheat if covered while turned on.

Troubleshooting Specific Panel PC Problems

- [Power failure](#)

- [Boot up fails](#)
- [LCD fails](#)
- [No backlight and no display](#)
- [With backlight but no display](#)
- [The HDD fails](#)
- [DDR DRAM fails](#)

The following section is related to the PanelPC and it's related components.

Power failure

If the power has been turned on, and there is no message on the screen, try the following:

- Make sure the power cord is correctly connected.
- Plug the power cord to another power outlet.
- The system fan should start up if there is power in the PanelPC. If not, replace the External Power Supply.

Boot up fails

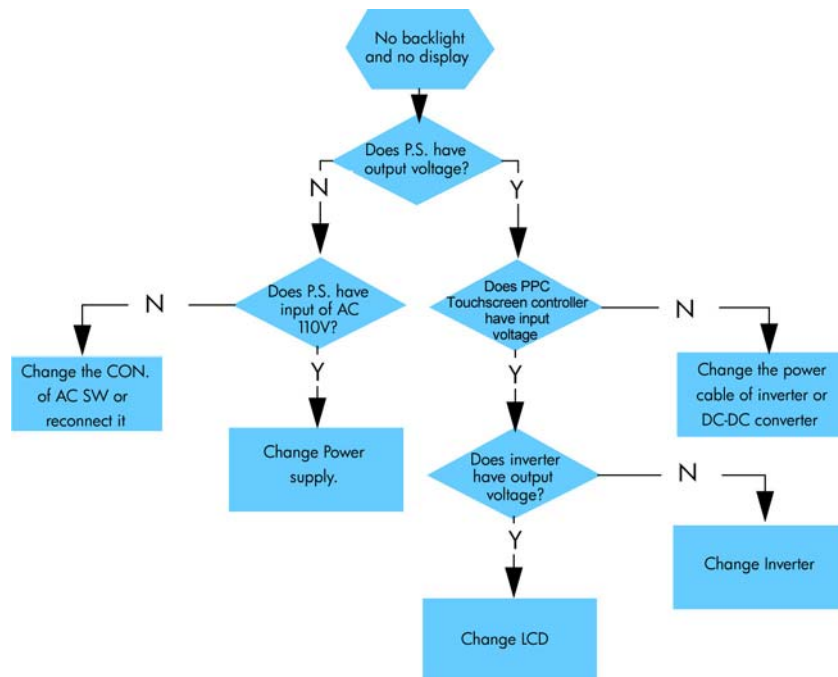
The PanelPC issues a series of beeps which can be used to identify which part is failing.

- One short beep: No error during POST (Power on Self-Test).
- One long beep followed by two short beeps: Video initial error.
- One long beep followed by nine short beeps: BIOS Bootblock error.
- Single long beep repeatedly: DRAM error.

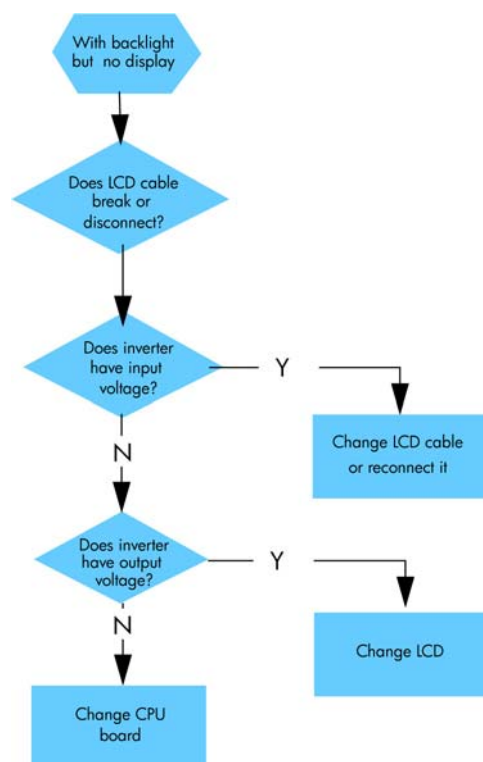
LCD fails

The failure of the LCD display can be divided into two issues, the PanelPC has no backlight and no display, or the Panel PC has the backlight but there is no display. Use the two troubleshooting flow charts to solve the problem:

No backlight and no display



With backlight but no display



The HDD fails

The HDD is running, and the system configuration has identified the HDD's ID while booting up. Try the following:

- Set the type of hard disk to AUTO in STANDARD CMOS SETUP.
- Reconnect the cable between HDD and main board.
- Change the HDD.

The HDD is not running, and the system configuration can not identify the HDD's ID while booting up. Try the following:

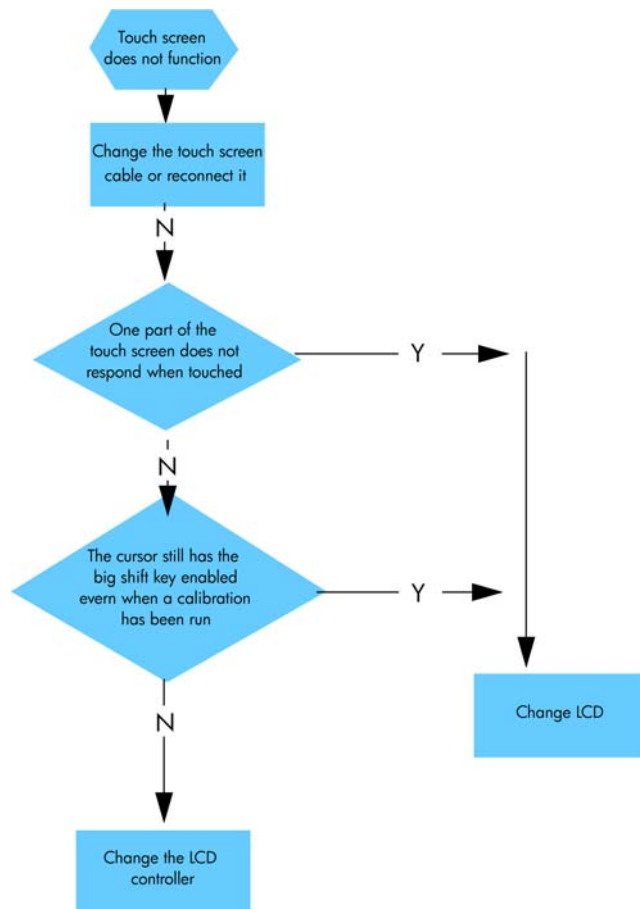
- Reconnect the cable between HDD and main board.
- Change the cable between HDD and main board.
- Change the HDD.

DDR DRAM fails

If the computer repeatedly makes a long beep, and the display is blank when you power on, this indicates a DDR DRAM error, replace the DDR DRAM.

Touch screen fails

Follow the steps in the flowchart below to quickly check if the touch screen fails:



Touch screen is working but can't control the cursor

Try the following:

- Run the calibration program.
- Check that the cable between the LCD controller and the LCD is connected in the correct position.
- Replace the LCD controller.
- Replace the LCD.

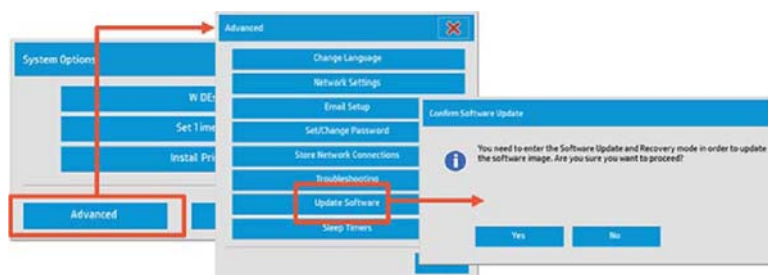
Upgrade Scanner Software

Upgrade the HD Pro Scanner system software

System software on the web is divided in 5 packages to facilitate the download:

1. Download all 5 files (1 to 5) from <http://www.hp.com/go/designjethdproscanner/software>. Save all of them to the same folder on your computer.
2. Extract part1; all of the parts extract one after the other to the selected folder.
3. After, the full System SW is located in the folder previously selected. The file size should be 3.32GB and the extension is ".sif".
4. Copy the System SW to a standard USB flash drive, formatted as FAT32,

5. Insert the USB drive into the PPC USB port.
6. Start the software update process as shown below:



2 System Error Codes

- [System Error Codes for the Scanner Only on page 29](#)
- [Error Codes for the JetImage Software RIP on page 36](#)
- [Error Messages for the Touch Screen on page 40](#)

System Error Codes for the Scanner Only

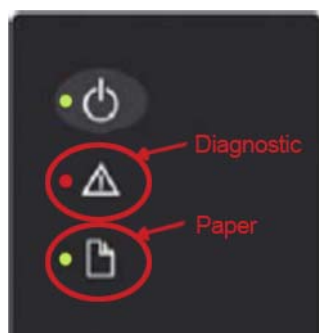
Introduction

The following pages contain a list of system error codes and their respective descriptions and recommended corrective actions. Only try one recommended action at a time and check if the error code has disappeared.

If you have an error code which is not documented in this Service Manual or you have an error which you cannot resolve, then report the error to the HP Response Center or the nearest HP Support Office. When reporting the error, have the following information ready:

- Model and Serial Number of the scanner.
- Which firmware revision the printer and the scanner is using.
- SW version.
- The complete error number.
- ScanDump of Light Profiles.

Error Codes displayed on the Keypad



An error condition is indicated by a flashing Diagnostic Indicator. The error may be identified by an Error Code Number being displayed on the screen and/or by the following combinations of flashing (F) indicators on the Operator Panel: See [The Software Modules on page 29](#) for an overview, and the lists of individual error codes that follow after for details.

Flash Code	Diagnostic	Paper
BOOT	F	F
ERR_GENERAL	F	OFF
ERR_SU	F	F
ERR_CB	F	2 X F
ERR_SMC	F	5 X F

1 X F, 2 X F, means that the Paper Indicator flashes 1, 2, times every time the Diagnostic Indicator is turned on. F, F, means that both indicators are flashing simultaneously.

The Software Modules

The first set of numbers in the error code refer to a part of the Scanner software or the Scanner.

Software Modules	Comments/Notes
51 - Scanner API	Low level scanner control library. All scanner communication goes through this API.
52 - Image Format Library	Printer and file formatting. All printing and file read/write is formatted/decoded by this library.
53 - Copy Engine	The central processing engine in the (JETimage) software.
54 - Closed Loop Calibration	Color Management math library that calculates the media profiles.
55 - Test Software	Scanner Maintenance / SCANTest.
56 - Jetimage container	All user interface and business logic except for Scanner Maintenance / SCANTest and WIDEsSystem.
57 - WIDEsSystem (WS)	Scanner surveillance utility
100 - Scanner	Mechanical part of the Scanner.

Software Related Errors

System Error: 100-00119

Description:

Invalid SCSI command.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-00120

Description:

Invalid value in SCSI CDB.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-00121

Description:

Invalid SCSI parameter list length.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-00123

Description:

Unsupported SCSI parameter.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-00124

Description:

Invalid SCSI parameter value.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-00125

Description:

Incorrect scanner status. Please check the paper path and reload the media.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-00126

Description:

SCSI time-out.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-00127

Description:

The scanner keyboard was used during communication with the scanner.

Corrective Action:

- ▲ User interaction

System Error: 100-00128

Description:

The scanner has paper jam. Please reload the media.

Corrective Action:

1. User interaction
2. Related mechanical parts
3. Lamp and Motor driver board
4. Switch Mode Power Supply
5. Main controller board

System Error: 100-00129**Description:**

The scanner does not support this test command in normal mode. Please restart test program.

Corrective Action:

- ▲ User interaction

System Error: 100-00131**Description:**

The scanner is initializing. Please retry the operation when the scanner has finished initializing.

Corrective Action:

- ▲ User interaction

System Error: 100-00132**Description:**

The scanner is warming up. Please retry the operation when the scanner has finished warming up.

Corrective Action:

- ▲ User interaction

System Error: 100-50122**Description:**

Pop request failed, position unknown.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-50123**Description:**

Pop request failed, invalid command.

Corrective Action:

1. PC (cable, PC hardware/software etc.)
2. Update system software

System Error: 100-50218**Description:**

Data never arrives in the Image.

Corrective Action:

- ▲ Update system software

System Error: 100-50231**Description:**

System software download is in progress.

Corrective Action:

- ▲ Update system software

System Error: 100-50232**Description:**

System software is incomplete. Please download new system software.

Corrective Action:

- ▲ User interaction

System Error: 100-50234**Description:**

Scanner is in safe mode. Please reboot scanner or download new system software.

Corrective Action:

1. User interaction
2. Main controller board

System Error: 100-50237**Description:**

Host PC does not support SSE2 calculations.

Corrective Action:

- ▲ User interaction

System Error: 100-50259**Description:**

System software unable to identify controller board id.

Corrective Action:

- ▲ Main controller board

System Error: 100-50260

Description:

System software unable to identify controller board variant.

Corrective Action:

- ▲ Main controller board

System Error: 100-50268

Description:

ETH PHY loopback error.

Corrective Action:

- ▲ Main controller board

System Error: 100-50269

Description:

Flash error.

Corrective Action:

- ▲ Main controller board

System Error: 100-50270

Description:

RAM error.

Corrective Action:

- ▲ Main controller board

System Error: 100-50271

Description:

Scanner has no MAC address.

Corrective Action:

- ▲ Main controller board

System Error: 100-50600

Description:

Main controller board error.

Corrective Action:

1. Main controller board
2. Switch Mode Power Supply

System Error: 100-50601**Description:**

CIS unit error.

Corrective Action:

1. CIS Unit
2. Main controller board

System Error: 100-50602**Description:**

System software error. Please download latest system software.

Corrective Action:

1. Update system software
2. Main controller board

System Error: 100-50603**Description:**

Unrecoverable scanner state. Please reboot the scanner. Download of the latest system software and PC application/driver may be required.

Corrective Action:

1. Reboot scanner
2. Update system software
3. PC driver/software

Error Codes for the JetImage Software RIP

-13 Unable to rename the folder.

Cause	Solution
Unable to rename the folder.	Occurs during file browsing operations, usually due to a share issue.

-12 Unable to delete the folder.

Cause	Solution
Unable to delete the folder (occurs during file browsing operations, typically if a folder is shared).	Close all the applications and try again.

-11 The folder must be empty.

Cause	Solution
The folder must be empty (occurs during file browsing operations).	Check that the folder is empty before deleting it.

-2 No media profile selected for current printer.

Cause	Solution
No media profile selected for current printer.	Prepare a Media Profile before performing the operation.

-1 No printer selected.

Cause	Solution
No printer selected.	Select a printer. A printer must be configured in the application before trying to print.

02 Invalid scan coordinates. The paper frame was placed fully outside the scan image.

Cause	Solution
Invalid scan coordinates. The paper frame was placed fully outside the scan image.	Try repositioning the paper frame so that it covers some of the scannable area.

06 Not enough disk space for spool file.

Cause	Solution
Not enough disk space for spool file.	Make sure that the environment TEMP (or secondary TMP) points to a folder with plenty of space.

08 The scanner is currently on standby. Please press the soft power button on the scanner to activate it.

Cause	Solution
The scanner is currently on standby.	Press the soft Power button on the scanner to activate it.

00003 Scanning invalid size of area requested for scanning.

Cause	Solution
Negative scan-width specified.	Reselect the scan area and try again.

01003 Error printing colorsheet.

Cause	Solution
Error printing colorsheet.	Try the following: • Check the printer to make sure it is switched ON and connected to the scanner. • Try printing a test print to make sure that the printer is working.

01013 Error detecting index-mark.

Cause	Solution
Skew: Error detecting the index mark.	Try the following: • Try restarting the system. • If the problem persists, view the scandump.tif file for further diagnosis.

01014 Sheet bad aligned.

Cause	Solution
Sheet badly aligned.	Try the following: • Reinsert the sheet, making sure that it is straight and at the right position. • If the problem persists, view the scandump.tif file for further diagnosis.

01015 Error detecting left margin.

Cause	Solution
Error detecting the left margin of the sheet.	Try the following: • Try reinserting the sheet. • If the problem persists, view the scandump.tif file for further diagnosis.

01016 Error detecting right margin.

Cause	Solution
Error detecting the right margin of the sheet.	Try the following: • Try reinserting the sheet. • If the problem persists, view the scandump.tif file for further diagnosis.

01017 Error reading colorsheet.

Cause	Solution
Error reading the colorsheet. The end of the sheet is reached before expected.	Check that the correct colorsheet is being used.

01018 CLC aborted.

Cause	Solution
The Close Loop Calibration (CLC) has been aborted.	The user has cancelled the color map operation.

01019 Wrong insert position.

Cause	Solution
The sheet has been inserted in the wrong position.	Try the following: • Reinsert the sheet, making sure that it is at the right position. • If the problem persists, view the scandump.tif file for further diagnosis.

01020 Can't find top of sheet.

Cause	Solution
The top of the sheet couldn't be found.	Reinsert the sheet, making sure that it is at the right position.

01021 Can't find bottom of sheet.

Cause	Solution
The bottom of the sheet couldn't be found.	Reinsert the sheet, making sure that it is at the right position.

02004 Unable to open device for reading.

Cause	Solution
Unable to open the device for reading.	Check that the device (file) is available.

02005 Unable to open device for writing.

Cause	Solution
Unable to open the device for writing.	Check that the device (file or printer) is available.

02006 Unable to read from device.

Cause	Solution
Unable to read from the device.	Try the operation again.

02007 Unable to write to device.

Cause	Solution
Unable to write to the device.	Try the operation again.

02013 Destination already exists.

Cause	Solution
Destination already exists.	Try the operation again with a different file name.

03008 Device not available.

Cause	Solution
Scanner not found.	Try the following: • Check that the scanner is turned ON. • Check the connection to the scanner.

13496 The scanner is initializing or warming up.

Cause	Solution
The scanner is initializing.	This happens if you try to scan too quickly after powering ON the scanner. Wait a short while and then try scanning again.

17977 Media is present in scanner, but command was aborted by user.

Cause	Solution
User interfered with the scanner.	Try the operation again.

17980 Paper jam.

Cause	Solution
Paper jam.	Check rollers and mechanical paper detectors for any paper jam. Once paper jam is cleared, try the operation again.

Error Messages for the Touch Screen

BIOS ROM checksum error - system halted.

Cause	Solution
Error during initialization.	Reboot the system and enter the BIOS setting. Load Setup Default and save the BIOS setting.

CMOS battery failed.

Cause	Solution
The battery life is approximately three years before it requires replacement.	Replace the CMOS Battery.

CMOS checksum error - defaults loaded.

Cause	Solution
Error detected in the CMOS.	Reboot the system and enter the BIOS setting. Load Setup Default and save the BIOS setting.

Display switch is set incorrectly

Cause	Solution
Problem found with the Touch Screen.	Connect the Touch Screen to a CRT Monitor and check the resolution setting for the display. If the CRT Monitor is working well then it seems there is an LCD problem.

Hard Disk install failure.

Cause	Solution
No Hard Disk detected, error related to Hard Disk Drive.	Try the following: • In the BIOS setup select Standard CMOS Features and check if the IDE/SATA detection method is set to AUTO (password to access the BIOS is bigcoco)? ◦ If Yes: In Advanced BIOS features, set HDD to first boot device. ◦ If No: Choose auto for all IDE/SATA detection. • Check if HDD can be detected in the boot-up system configuration table: ◦ If Yes: check the boot up files in HDD, recover it if necessary. ◦ If No: replace HDD.

Primary master hard disk fail.

Cause	Solution
No Hard Disk detected, error related to Hard Disk Drive.	Try the following: • In the BIOS setup select Standard CMOS Features and check if the IDE/SATA detection method is set to AUTO (password to access the BIOS is bigcoco)? ◦ If Yes: In Advanced BIOS features, set HDD to first boot device. ◦ If No: Choose auto for all IDE/SATA detection. • Check if HDD can be detected in the boot-up system configuration table: ◦ If Yes: check the boot up files in HDD, recover it if necessary. ◦ If No: replace HDD.

Secondary master hard disk fail.

Cause	Solution
No Hard Disk detected, error related to Hard Disk Drive.	Try the following: • In the BIOS setup select Standard CMOS Features and check if the IDE/SATA detection method is set to AUTO (password to access the BIOS is bigcoco)? ◦ If Yes: In Advanced BIOS features, set HDD to first boot device. ◦ If No: Choose auto for all IDE/SATA detection. • Check if HDD can be detected in the boot-up system configuration table: ◦ If Yes: check the boot up files in HDD, recover it if necessary. ◦ If No: replace HDD.

Primary slave hard disk fail.

Cause	Solution
No Hard Disk detected, error related to Hard Disk Drive.	Try the following: • In the BIOS setup select Standard CMOS Features and check if the IDE/SATA detection method is set to AUTO (password to access the BIOS is bigcoco)? ◦ If Yes: In Advanced BIOS features, set HDD to first boot device. ◦ If No: Choose auto for all IDE/SATA detection. • Check if HDD can be detected in the boot-up system configuration table:

Primary slave hard disk fail.

Cause	Solution
	◦ If Yes: check the boot up files in HDD, recover it if necessary. ◦ If No: replace HDD.

Secondary slave hard disk fail.

Cause	Solution
No Hard Disk detected, error related to Hard Disk Drive.	Try the following: • In the BIOS setup select Standard CMOS Features and check if the IDE/SATA detection method is set to AUTO (password to access the BIOS is bigcoco)? ◦ If Yes: In Advanced BIOS features, set HDD to first boot device. ◦ If No: Choose auto for all IDE/SATA detection. • Check if HDD can be detected in the boot-up system configuration table: ◦ If Yes: check the boot up files in HDD, recover it if necessary. ◦ If No: replace HDD.

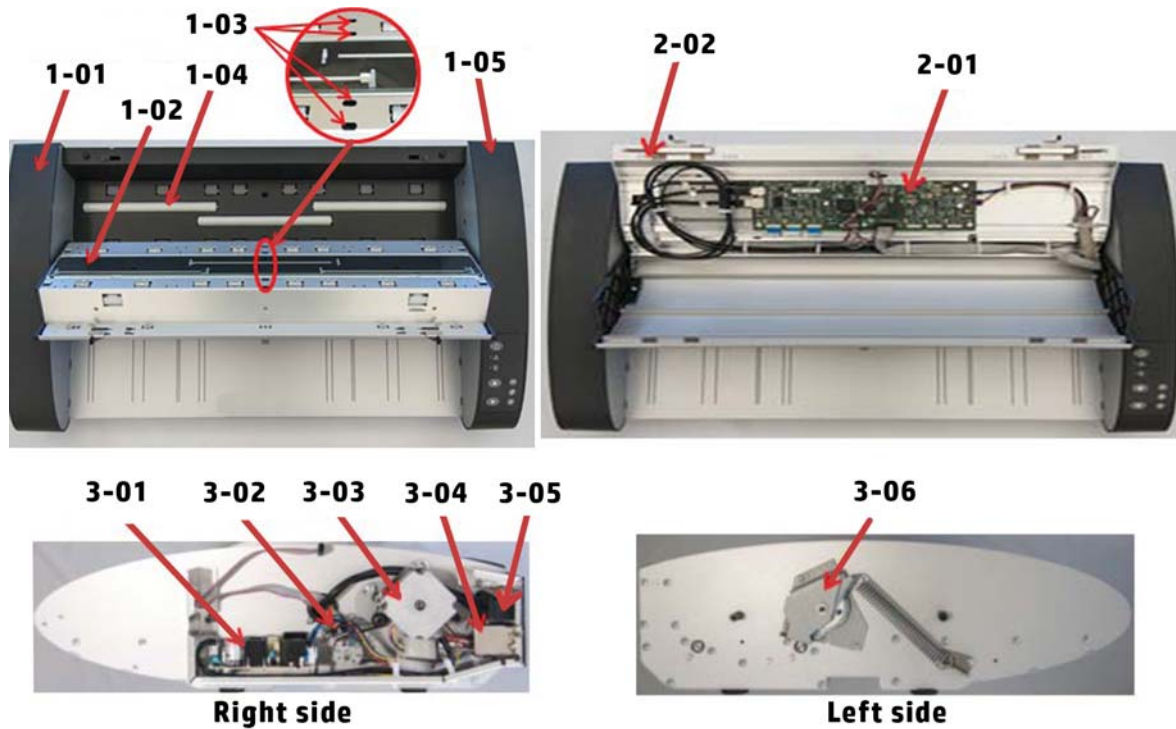
Memory test fail.

Cause	Solution
Memory test has failed.	Try the following: • Re-install the SDRAM and check if the problem is solved: ◦ If Yes: There was a poor connection between the Main Board and the SDRAM Memory Module. ◦ If No: Replace the SDRAM Memory Module.

3 Parts and Diagrams

- [Scanner on page 44](#)
- [Panel PC on page 45](#)

Scanner



Number in photo	Description	HP Part Number
1-01	Left Side Cover	G6H50-67009
1-02	Glass Plate	CM719-60013
1-03	Paper/LID Sensor	G6H51-67016
1-04	Pressure Rollers (6 pcs)	G6H50-67008
1-05	Right Side Cover including operators panel	G6H50-67013
2-01	Controller Board	G6H50-67004
2-02	CIS Unit 44" except controller board	G6H50-67005
3-01	Power Supply	G6H50-67003
3-02	Optointerrupter (Tacho sensor, ATAC sensors)	G6H51-67015
3-03	Stepper Motor Assembly	G6H51-67010
3-04	Power Entry Module with EMI Filter	G6H50-67006
3-05	Cable Interface	G6H50-67012
3-06	Spring for CIS bridge	G6H50-67011
N/A	Paper guide (2 pcs)	G6H50-67014
N/A	Return Guide	G6H50-67015
N/A	Calibration Sheet	G6H50-67002
N/A	Castors	G6H51-67026
N/A	Europe Power Cord SV KIT	CQ533-60001
N/A	America Power Cord SV KIT	CQ533-60002
N/A	Asia Power Cord SV KIT	CQ533-60003

Panel PC

HP Part Number	Description	Image
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67035	PPC Cable Harness	
G6H51-67042	PPC External PSU	
G6H51-67046	PPC Front Bezel Module	
G6H51-67051	PPC Panel Module	
G6H51-67048	Rear Cover	

G6H51-67047	PPC Motherboard cover	
G6H51-67044	PPC Touch Screen Controller	
G6H51-67049	PPC LED light board	
G6H51-67041	PC Main Board	
G6H51-67039	PPC HDD	
G6H51-67043	PPC SDRAM	
G6H51-67045	PPC Cooler module	

4 Removal and Installation

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- [Safety Precautions](#)
- [Electrostatic Discharge \(ESD\) Precautions](#)
- [Required Tools](#)
- [Open the CIS Unit](#)
- [Scanner Controller Board](#)
- [Right Side Cover](#)
- [Power Supply](#)
- [Left Side Cover](#)
- [Stepper Motor Assembly](#)
- [Tacho Sensor](#)
- [Paper and Lid Sensors](#)
- [Complete CIS Unit](#)
- [Power Entry Module](#)
- [Cable Interface](#)
- [Spring for CIS Bridge](#)
- [Pressure Rollers](#)

Introduction

This chapter is a step-by-step guide to the removal and installation of the key components in the product. You may find it useful to tick off the steps as they are performed. Use the illustration at each procedure to identify the parts referred to in the text.

The procedures appear in order of removal. So the whole product can be stripped down by starting at the beginning of this chapter and working through the subsequent procedures.

Safety Precautions

Review WARNING and CAUTION instructions before you service the product. Follow these warnings and cautions for your protection and to avoid damaging the product.



NOTE: Serious shock hazard leading to death or injury may result if you do not take the following precautions:

Ensure that the AC power outlet (mains) has a protective earth (ground) terminal.

Switch off the printer, the scanner, and the PC, and then disconnect them from the power source prior to performing any maintenance.

Prevent water or other liquids from running onto electrical components or circuits, or through openings in the module.

Electrostatic Discharge (ESD) Precautions

To prevent damage to the product circuits from high-voltage electrostatic discharge (ESD):

1. Do not wear clothing that is subject to static build-up.
2. Do not handle integrated circuits (ICs) in carpeted areas.
3. Do not remove an IC or a printed circuit assembly (PCA) from its conductive foam pad or conductive packaging until you are ready to install it.
4. Ground (earth) your body while disassembling and working on the Scanner. This can be done by touching any metallic part of the Scanner.
5. After removing a cover from the Scanner, attach an earthing (ground) lead between the PCA common and earth ground. Touch all tools to earth ground to remove static charges before using them on the Scanner.
6. After removing any PCA from the Scanner, place it on a conductive foam pad or into its conductive packaging to prevent ESD damage to any ICs on the PCA.

Required Tools

The following Common Hand Tools are required to disassemble and repair the Scanner:

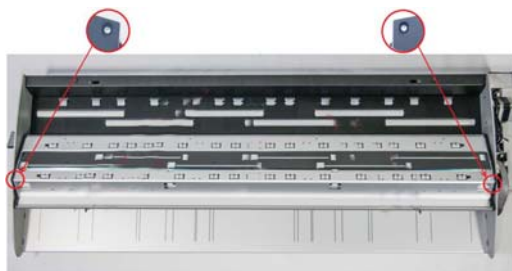
- Torx 10 Straight
- Torx 15 Straight & Angled
- Torx 20 Straight & Angled



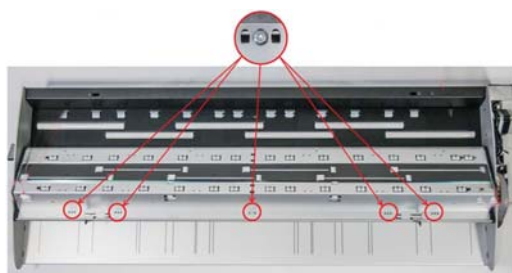
NOTE: Before replacing any electrical parts such as the Scanner Control Unit or CIS Unit, try calibrating the scanner in order to get the scanner to recreate the content of the parameter block. This will solve the problem in most cases.

Open the CIS Unit

1. Remove the screws (x2, Torx 15)



2. Remove the screws (x5, Torx 15).



3. Remove the cover from the CIS unit.

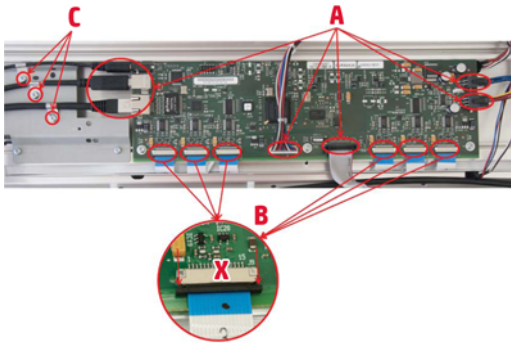
Scanner Controller Board

Removal

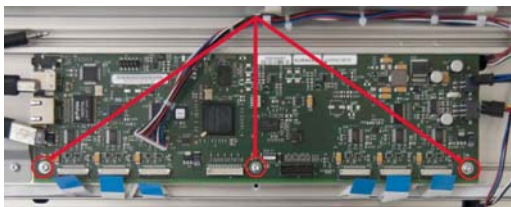
Prerequisites: Turn off the scanner, disconnect the power cord, and [Open the CIS Unit on page 49](#).

1. Disconnect the cables (A), release the lock (X) on the ribbon cables, and pull the cable out (B).

 **NOTE:** If required; remove the screws on the wire bracket (C).



2. Remove the screws (x3, Torx 10):



Installation

- ▲ Replace the Scanner Controller Board and reverse the removal steps.

Right Side Cover

Removal

Prerequisites: Turn off the scanner, disconnect the power cord, and [Open the CIS Unit on page 49](#).

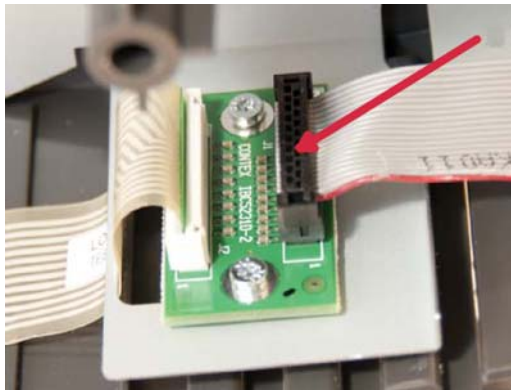
1. Remove the screws (x2, Torx 20).



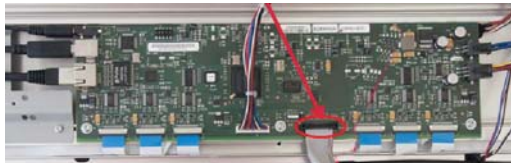
2. Carefully remove the cover.

⚠ CAUTION: The keypad ribbon is attached to the cover.

3. Disconnect the keypad ribbon cable.



4. Disconnect the keypad ribbon cable.



5. Pull the cable out through the side cover.



Installation

- ▲ Replace the Right Side Cover and reverse the removal steps.

Power Supply

Removal

Prerequisites: Turn off the scanner, and disconnect the power cord.

CAUTION: The power supply is double pole/neutral fusing.

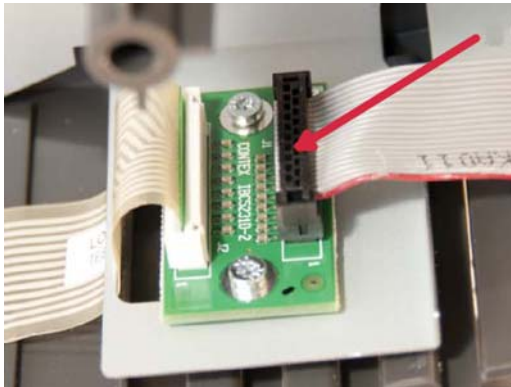
1. Remove the screws (x2, Torx 20).



2. Carefully remove the cover.

CAUTION: The keypad ribbon is attached to the cover.

3. Disconnect the keypad ribbon cable.



4. Disconnect the cables (x2).



5. Remove the screws (x4, Torx 10), and lift the Power Supply out.



Installation

- ▲ Replace the Power Supply and reverse the removal steps.

Left Side Cover

Removal

1. Remove the screws (x2, Torx 20).



2. Remove the cover.

Installation

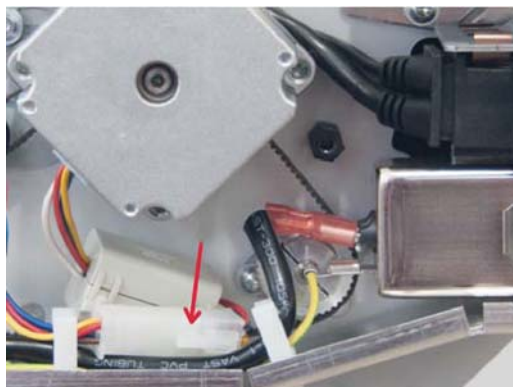
- ▲ Replace the Left Side Cover and replace the screws.

Stepper Motor Assembly

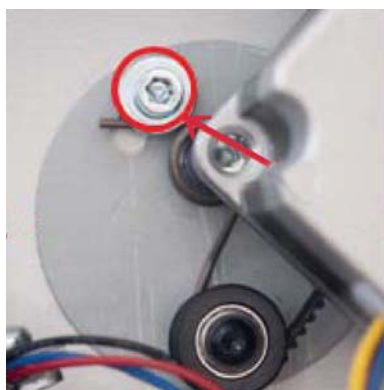
Removal

Prerequisites: Turn off the scanner, disconnect the power cord, and [Open the CIS Unit on page 49](#).

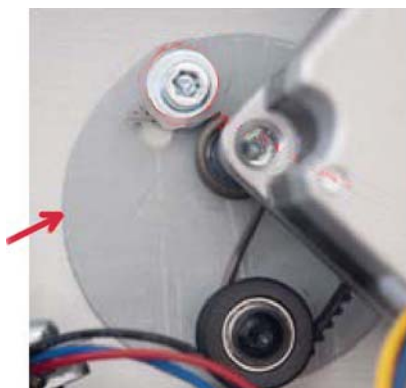
1. Remove the [Right Side Cover on page 51](#).
2. Disconnect the motor cable.



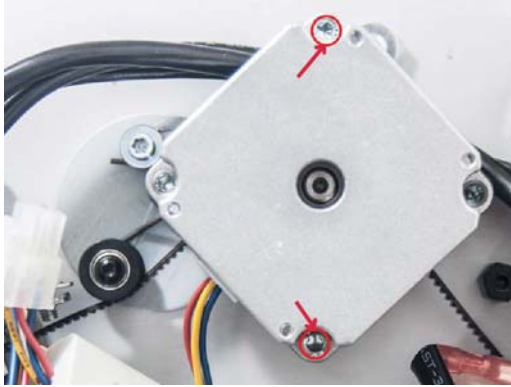
3. To release belt tension; loosen the screw (Torx 10) (don't remove).



4. Push the tension wheel upwards, and tighten the screw again.



5. Remove the screws (x2, Torx 20).



6. Remove the Stepper Motor Assembly.

Installation

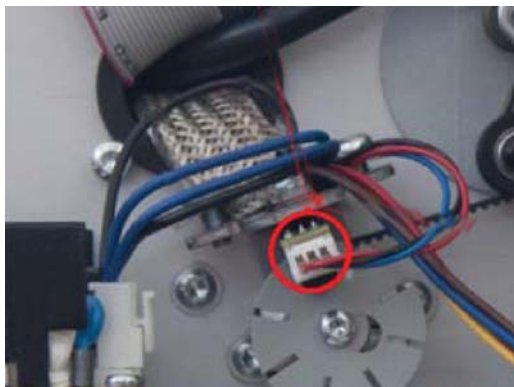
- ▲ Replace the Stepper Motor Assembly, and reverse the removal steps.

Tacho Sensor

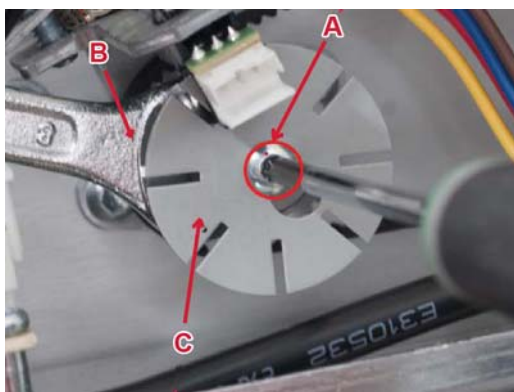
Removal

Prerequisites: Turn off the scanner, disconnect the power cord, and [Open the CIS Unit on page 49](#).

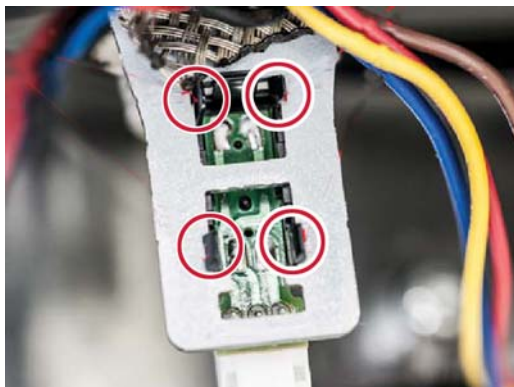
1. Remove the [Right Side Cover on page 51](#).
2. Disconnect the sensor cable.



3. Loosen, but don't remove, the Torx 10 screw (A). Hold in place with the 8mm wrench (B), and remove the tacho wheel (C).



4. Gently push together the lock flaps, and remove sensor.



Installation

- ▲ Replace the Tacho Sensor, and reverse the removal steps.

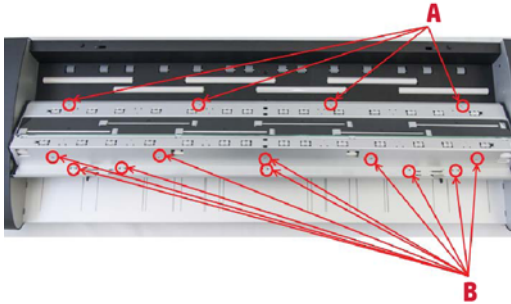
Paper and Lid Sensors

Removal

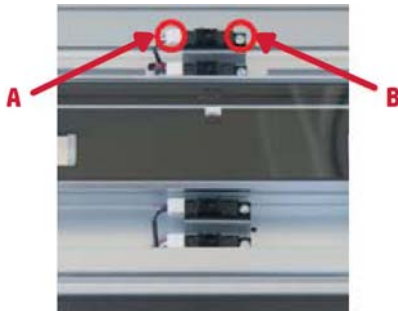
Prerequisites: Turn off the scanner, disconnect the power cord, and [Open the CIS Unit on page 49](#).

1. **For Load and Paper sensor (A):** Remove the screws (x4, Torx 10) and roller cover.

For Lid and Exit sensor (B): [Open the CIS Unit on page 49](#), remove the screws (x10, Torx15), and flip out the roller cover.



2. Disconnect the sensor cable (A), and remove the screw (x1,Torx 10) and Sensor (B).



Installation

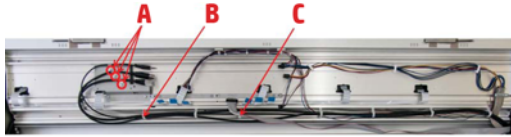
- ▲ Replace the Sensor, and reverse the removal steps.

Complete CIS Unit

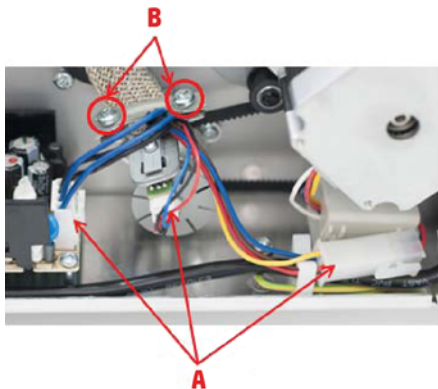
Removal

Prerequisites: Turn off the scanner, and disconnect the power cord. Remove the [Scanner Controller Board on page 50](#) and the [Right Side Cover on page 51](#).

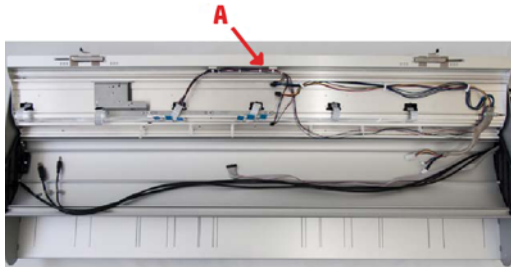
1. Remove the grounding screws (A), un-clip the USB cable (B), and un-clip the Keypad cable (C).



2. Disconnect the cables (A), remove the screws and bracket (B), and guide the cables back into the CIS unit.



3. Lift out the CIS unit by its top edge.



Installation

- ▲ Replace the CIS Unit, and reverse the removal steps. Run a full calibration on the scanner.

Power Entry Module

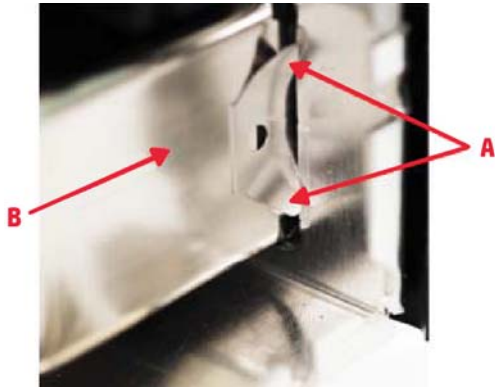
Removal

Prerequisites: Turn off the scanner, and disconnect the power cord. Remove the [Right Side Cover on page 51](#).

1. Remove the cables.



2. Push the lock flaps in on both sides (A), and push the module out through the back (B).



Installation

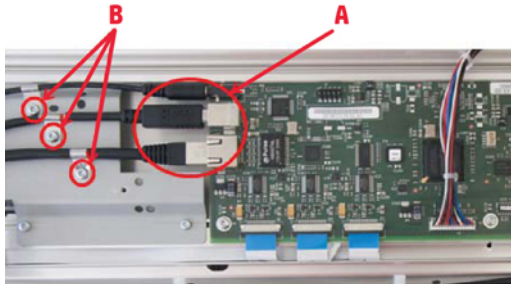
- ▲ Replace the Power Entry Module, and reverse the removal steps.

Cable Interface

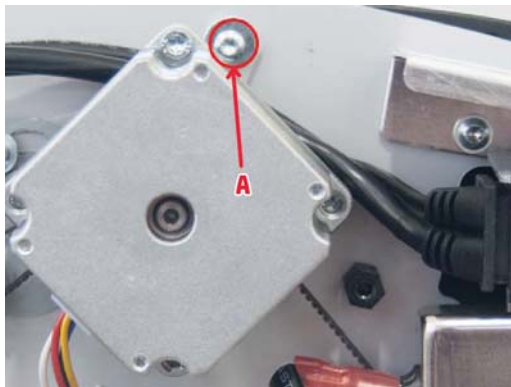
Removal

Prerequisites: Turn off the scanner, and disconnect the power cord. Remove the [Scanner Controller Board on page 50](#) and the [Right Side Cover on page 51](#).

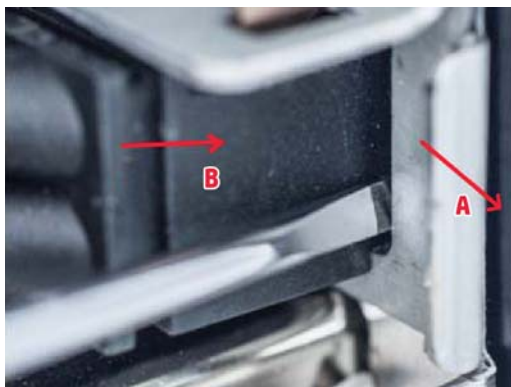
1. Disconnect the USB cable (A), remove the grounding screw (B), and un-clip the cable from the CIS unit.



2. Remove the screw (x1, Torx 15) (A), and carefully pull the cable out of the CIS bridge.



3. Remove the clip by sliding it outwards (A), then push the USB connector and cable out through the back (B).



Installation

- ▲ Replace the Cable Interface, and reverse the removal steps.

Spring for CIS Bridge

Removal

Prerequisites: Turn off the scanner, and disconnect the power cord. Remove the [Scanner Controller Board on page 50](#) and the [Left Side Cover on page 54](#).

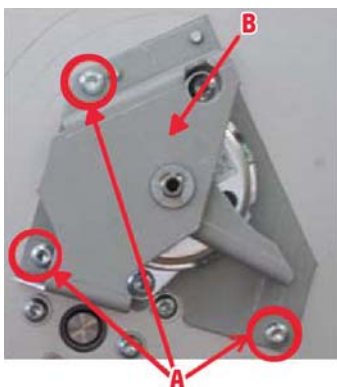
1. Remove the Spring.



2. Loosen the screws to release the clamp (inside the CIS unit).



3. Remove the screws (x3, Torx 15) (A), and pull out the assembly (B).



Installation

- ▲ Replace the Assembly, and reverse the removal steps.



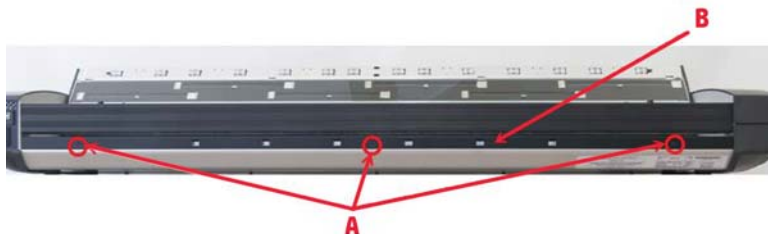
NOTE: Remember to tighten the clamp.

Pressure Rollers

Removal

Prerequisites: Turn off the scanner, disconnect the power cord, and [Open the CIS Unit on page 49](#).

1. Remove the screws (x3, Torx 10) (A), and pull the Roller Cover sheet out through the back (B).



2. Carefully pull the Pressure Roller out (repeat for all 6).



Installation

- ▲ Replace the Pressure Rollers, and reverse the removal steps.



NOTE: Remember to calibrate the scanner.