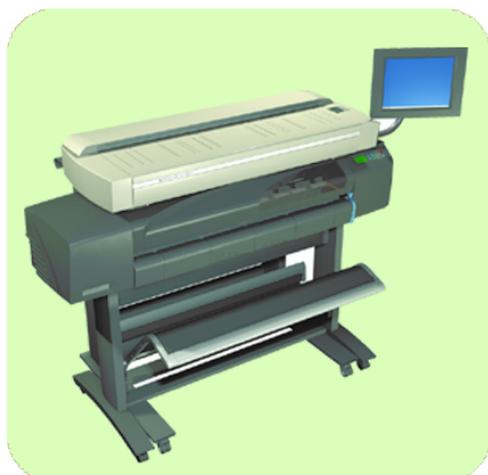


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First Edition, April 2002

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WARNING

The procedures described in this manual are to be performed by HP-qualified service personnel only.

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

Refer to the beginning of Chapter 4 of this manual, 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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service manual

hp designjet
copier cc800ps

Using this Manual

Purpose

This Service Manual contains information necessary to troubleshoot and service:

- **hp** designjet copier cc800ps - Model Q1262A

For information about using this product, refer to the corresponding User and Quick Reference Guides.

This Service Manual is about the Scanner and the integration with the printer as a copier. In order to troubleshoot the printer, refer to 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 are located in Chapter 3.

Conventions

A small arrow \Rightarrow is used to indicate other parts of the Service Manual where you can find information related to the topic you are consulting.

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Troubleshooting

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Guide to Troubleshooting the hp designjet copier

Is the Problem with the Printer or Scanner

If you encounter 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.
- 1 vertical white, black or color line.

If you encounter 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 original print is the same as the copied print, then the problem is associated with the Printer.
 - If the original print is NOT the same as the copied print, then the problem is associated with the Scanner.

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).

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

- Check the USB connection to the Printer.
- Check the selected settings: List, Collate, Scan to file...

Troubleshooting System Error Codes

Chapter 2 - *System Error Codes* 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 SCANtest 6 Diagnostic Software

The purpose of the SCANtest 6 diagnostic software is to support the troubleshooting and adjustment of the Scanner.

When the SCANtest 6 diagnostic software has been started, the Scanner is switched ON in Test Mode, and the Diagnostic LED on the Operator Panel is turned ON.

Scanner Test Program Menu

- Test 1: Scanner Information
- Test 2: LED Test
- Test 3: Key Test
- Test 4: Original-Sensor Test
- Test 5: Lamp Test
- Test 6: Motor Test
- Test 7: Complete Hardware Test
- Test 9: Camera Adjustment
- Test 11: Stitching and Vertical Alignment
- Test 12: Adjust Y-Axis Scaling
- Test 13: Switch Scanner to Test Mode
- Test 20: Noise Test
- Test 21: Scan Dump

If SCANtest 6 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: Scanner Information

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

- Scanner Model:
- Firmware Release:
- Firmware Release Date:
- Firmware Build:
- FPGA Revision:
- FPGA Release Date:
- Boot Code Revision:
- Boot Code Release Date:
- Scanner ID Switch:
- SCSI ID:

Test 2: 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. If the LED test fails, replace the Right Cover (which contains the Operator Panel).

Test 3: Key Test

This test checks the functionality of the Keys on the Operator Panel. When the test is executed, each key on the Operator Panel will turn an LED ON when pressed.

| Key | LED |
|---------------------|---------------|
| Forward and Reverse | Ready (Green) |
| Power | Wait (Yellow) |

The only way to know if the test fails is by inspection, there is no error message that is displayed.

If the Key test fails, replace the Right Cover (which contains the Operator Panel).

Test 4: Original-Sensor Test

This test checks the functionality of the Media Sensors and the Media Thickness Detector.

When the test is executed, the following LEDs turn ON when one of the Media Sensors is activated, or when one or both Adjustment Sliders for Media Thickness are pulled out from Normal position:

| Actuator | LED |
|---------------------------------------|---------------|
| Media Entry Sensor | Ready (Green) |
| Media Exit Sensor | Ready (Green) |
| Adjustment Slider for Media Thickness | Wait (Yellow) |

To test the Adjustment Slider for Media Thickness (located on the Guide Plate), press the slider to one side and the Wait LED switches On.

To test the Media Sensors, load a Sheet of media (A4) and the Ready LED switches ON and when you remove it the Ready LED switches OFF.

If the test fails (if any of the LEDs fail to switch ON), then the problem will be related to corresponding Sensor.

Test 5: Lamp Test

This test checks the functionality of the Lamp and associated electronics.

When the test is executed, a message on the screen will indicate whether the **Lamp** is turned ON or OFF (Lamp power is turned ON/OFF) and whether the **Light** is ON/OFF (Light is detected or not). The Lamp is delayed for approximately 2 seconds when switched ON.

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 7: Complete Hardware Test

This test checks the various functions of the Driver and Camera Boards.

Test 9: Camera Adjustment

This test contains a Software Oscilloscope that allows you to check and adjust the CCD-Cameras. The following functions can be selected from the Test Program Menu.

- Uncorrected or Corrected Light Profile.
- Red, Green, or Blue Color Channel.
- Special Detail Views for Light Profile, Scan Width, and Vertical Positioning.
- Forward / Reverse controls for the Camera Motor.
- Save screen images.
- Print screen images.

The content of the Detail Views is marked on the upper overview window by red vertical lines. The continuous lines refer to the left Detail View and the dashed lines to the right Detail View.

To perform the Camera Adjustment, refer to Chapter 5 of this Service Manual.

Test 11: Stitching and Vertical Alignment

This test is also included in the Scanner Maintenance Software.

This test performs Automatic Vertical Alignment and Horizontal Stitching.

Once the test has been started:

- Insert SM Calibration Sheet.
- Select Vertical Alignment to align the cameras.
- Select Horizontal Stitching to stitch the cameras.

The screen image can be saved or printed.

This test allows manual setting of the Stitch Values. The Stitch Values are stored in the Flash Memory on the Driver Board.

The Vertical Alignment may be adjusted manually by controlling the Camera Motor from the control field '<<dddd>>'. The two buttons marked '<<' respectively '>>' are used to start the motor and to determine the direction of rotation. When started, the motor runs for dddd milli-seconds as entered into the control field.

Test 12: Adjustment of Y-Axis Scaling

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 Driver Board.

Test 13: Switch Scanner to Test Mode

This test allows you to switch the scanner back to Test Mode. Useful if the scanner gets out of Test Mode, e.g. if it has to be turned OFF/ON during troubleshooting.

Test 20: Noise 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.

When the test is executed, it scans the White Calibration Area of the SM Calibration Sheet and displays, for each color channel, the graytone values of each separate pixel averaged over the scanned band.

The displayed image of the SM Calibration Sheet will be superimposed by low level noise caused by the CCD chip, and larger spikes most likely caused by dust, dirt, scratches, or similar defects on the Glass Plate. In rare cases, larger spikes may be caused by dust, dirt, or pixel faults on the CCD chip.

The positions of larger spikes are shown by the numbers (cm or inch units) opposite to the spikes. The numbers refer to the Sideload-ruler on the

scanner. Larger spikes going downwards are often caused by dust, dirt, scratches, or similar defects on the Glass Plate and may be removed by cleaning the Glass Plate. Downward spikes often show up as darker vertical lines in the scanned image.

Larger spikes going upwards are often caused by dust or dirt present on the Glass Plate during the last calibration with Scanner Maintenance. These defects are memorized by the Light Profiles stored in the Flash Memory and can only be removed by cleaning of the Glass Plate followed by running Scanner Maintenance again. Upward spikes show up as very bright vertical lines in the scanned image.

White vertical lines in the scanned image may be found even if Noise Test shows a perfectly 'clean' scanner. In this case, the cause may be white dust or particles on the backside of the Glass Plate having the same color as the white background. In this case, the Light Profiles of SCANTest 6, Test 9 may show upwards going spikes when a dark original is placed in the scan-area.

Test 21: SCANDump

The purpose of this test is to create a file, SCANDump.con, which contains Light Profiles and other scanner data for diagnostics purposes.

When the test is executed, the file SCANDump.con will be placed in the directory c:\Temp\. The files contained in SCANDump.con may be unpacked by SCANview 6 by double clicking on SCANDump.con. The unpacked Light Profiles may be viewed by SCANview 6. If other files are included, use an appropriate reader or viewer.

The files are also placed as a button on the active desktop and is called SCANDump. The files can be stored on a disk and can be sent by e-mail.

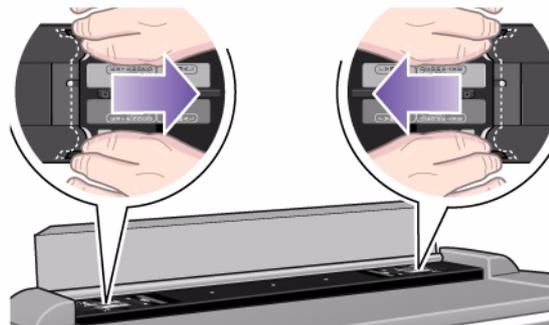
Cleaning the Scanning Area

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.

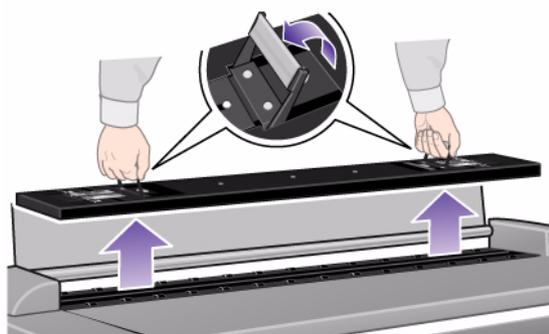
- 1 Turn the scanner power off.
- 2 Disconnect the scanner power cable.
- 3 Open the scanner cover by placing your fingers just inside the insertion slot and flip the cover upwards to expose the scan area.



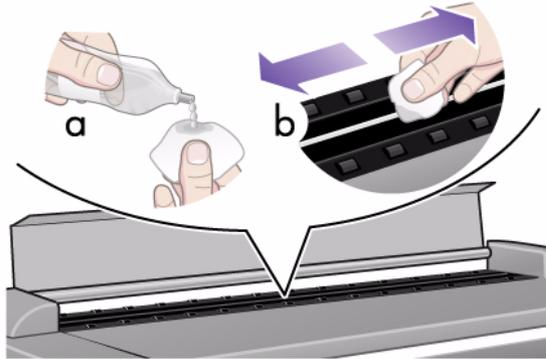
- 4 Remove the Guide Plate by pressing down on the Plate as you pull the left and right sliders towards the scanner's center until the metal safety buttons on each side of the scanner, pop up.



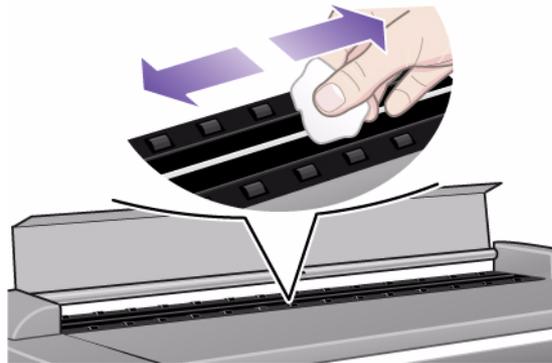
- 5 Use the two handles to lift out the Guide Plate as soon as you feel the sliders disengage.



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



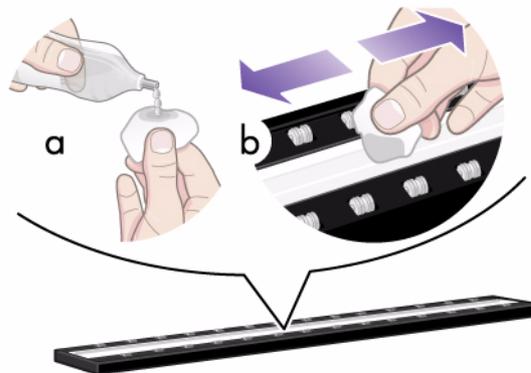
- 7** Dry the glass completely using a separate clean, dry lint-free cloth like the one provided with the maintenance kit.



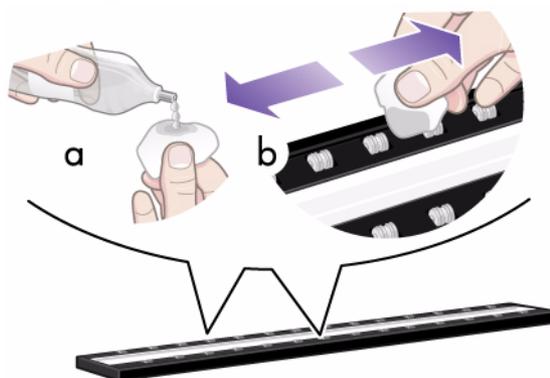
- 8** Turn the Guide Plate, that was removed in step 5, upside down.



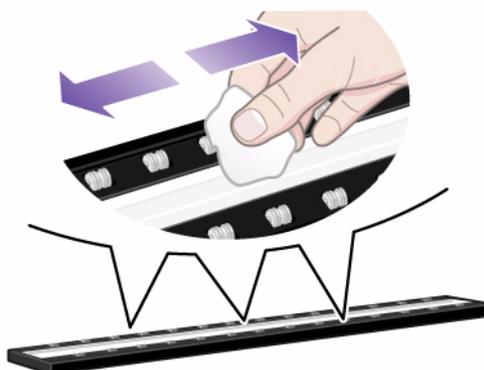
- 9** Clean the white background assembly. Wipe the white metal area with a lint-free cloth and a mild, streak-free, glass cleaner.



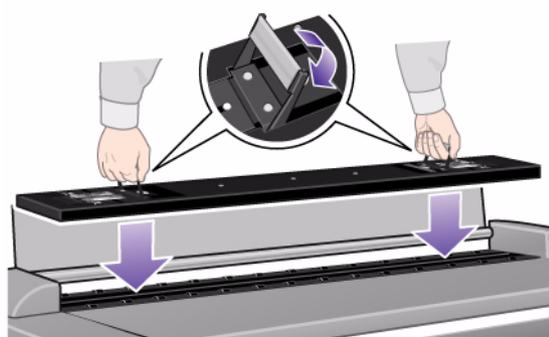
- 10** Clean the platen rollers. Wipe the rollers with a lint-free cloth and a mild, streak-free, glass cleaner.



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



- 12** Replace the Guide Plate.
- Lift the Guide Plate into its original position.
 - Press down on the metal safety buttons while pulling the slider towards the center of the scanner to let the two sliders move back and lock the Plate into place.



- 13** Close the scanner cover.

Adjusting the Driver Board

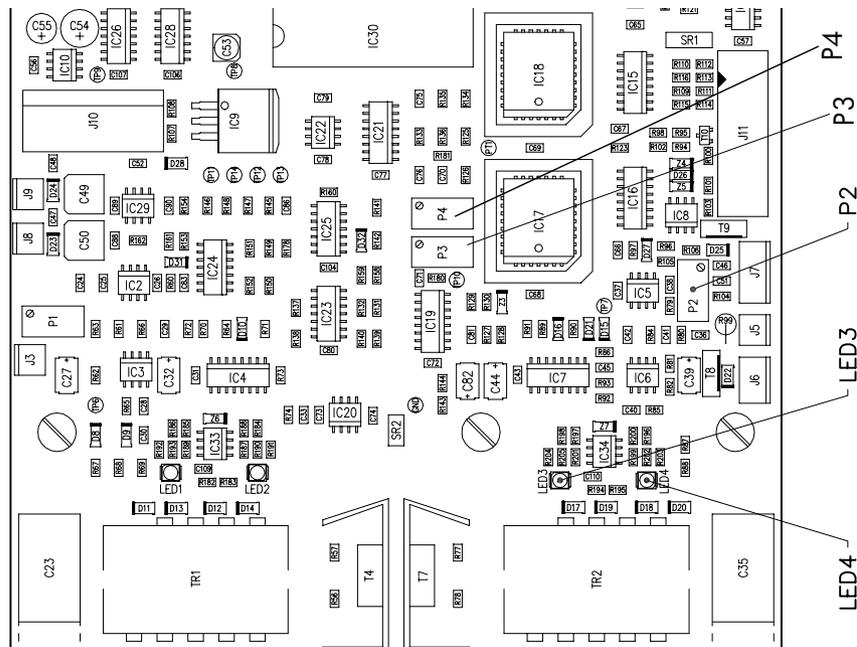
After reinstalling the Driver Board or the Lamp Sensor, you must adjust the Driver Board as follows:

1. Switch the scanner ON and leave for at least 30 minutes.
2. Turn P2 Counter-Clockwise until LED 3 switches OFF (LED 4 should be ON).
3. Slowly turn P2 Clockwise until LED 3 switches ON.

The correct voltages are:

- P3 until TP12 = $10\text{mV} \pm 10\text{mV}$
- P4 until TP13 = $10\text{mV} \pm 10\text{mV}$

If P2 is turned further Clockwise, LED 4 will eventually turn OFF. If both LED's are ON, the lamp driver is within the acceptable working range. If either of the LED's is OFF, the lamp driver should be adjusted.





System Error Codes

2

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System Error Codes for the Copier Only

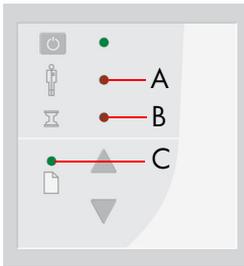
Introduction

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

Error Codes Displayed on the Operator Panel



A flashing Diagnostic Indicator indicates an error condition. The error can be identified by an error code number being displayed on the Touch Screen and/or by the following combination of flashing indicators on the Operator Panel:

| Diagnostic LED (A) | Wait LED (B) | Ready LED (C) | Error Description |
|--------------------|---------------|-----------------|--|
| Flashing | Flashes Once | OFF | Correction of camera A failed |
| Flashing | Flashes Twice | OFF | Correction of camera B failed |
| Flashing | OFF | Flashes Once | Error on Camera Drive Board |
| Flashing | OFF | Flashes Twice | Error on Camera Board |
| Flashing | OFF | Flashes 3 times | Invalid Scanner ID setting |
| Flashing | OFF | Flashes 4 times | Error on Interface Board |
| Flashing | OFF | Flashes 5 times | Invalid Smart Card |
| Flashing | Flashing | Flashing | Scanner is in Boot Mode |
| Flashing | OFF | OFF | Refer to Error Codes |
| OFF | Flashing | Red | Guideplate assembly is not in the right position, to solve it press down the guideplate to move it to the original position (step 0: 2mm/0.8") |

| | |
|-----------------------------|---|
| System Error: | 08-147 |
| LED Code | Not Applicable. |
| Problem Description: | Error related to the switch setting on the Operators Panel. |
| Corrective Action: | Try the following: <ul style="list-style-type: none">■ Check the ID switch settings on the Operators Panel (00011000 (0=OFF, 1=ON)).■ Check that the Operators Panel is correctly connected.■ The Operators Panel is faulty, replace the Right Cover ⇒ Page 4-8. |
| System Error: | 08-149 |
| LEDs Code | Diagnostic = Flashing, Wait = OFF, Ready = Flashes 5 times. |
| Problem Description: | Error related to the Smart Card. |
| Corrective Action: | Try the following: <ul style="list-style-type: none">■ Check that the Smart Card Reader is correctly connected to the Controller Board.■ Check that the Smart Card is correctly inserted.■ Replace the Smart Card.■ Replace the Smart Card Reader ⇒ Page 4-29. |
| System Error: | 08-208 |
| LED Code | Not Applicable. |
| Problem Description: | Operators Panel check failed. |
| Corrective Action: | Try the following: <ul style="list-style-type: none">■ Check that the Operators Panel is correctly connected.■ The Operators Panel is faulty, replace the Right Cover ⇒ Page 4-8. |

System Error: 30-140
LEDs Code Diagnostic = Flashing, Wait = Flashes once, Ready = OFF.
Problem Description: Correction of Camera A failed.
Corrective Action: Try the following:

- Make sure that the Glass Plate and the White Background Plate are clean.
- Run SCANtest 6, test 9 and check the light profile. If the light profile is distorted, the cause maybe:
 - Incorrect vertical positioning of the camera.
 - Incorrect vertical alignment, run SCANtest 6, test 11 or Scanner Maintenance.
 - If the lamp does not turn ON, replace the lamp and if necessary, replace the Driver board ⇒ Page 4-24.
 - Corrupted Basic Calibration - Erase the parameter block and run the Scanner Maintenance.
 - Replace the Camera Board for Camera A ⇒ Page 4-16.

System Error: 30-141
LEDs Code Diagnostic = Flashing, Wait = Flashes twice, Ready = OFF.
Problem Description: Correction of Camera B failed.
Corrective Action: Try the following:

- Make sure that the Glass Plate and the White Background Plate are clean.
- Run SCANtest 6, test 9 and check the light profile. If the light profile is distorted, the cause maybe:
 - Incorrect vertical positioning of the camera.
 - Incorrect vertical alignment, run SCANtest 6, test 11 or Scanner Maintenance.
 - If the lamp does not turn ON, replace the lamp and if necessary, replace the Driver board ⇒ Page 4-24.
 - Corrupted Basic Calibration - Erase the parameter block and run the Scanner Maintenance.
 - Replace the Camera Board for Camera B ⇒ Page 4-16.

| | |
|-----------------------------|---|
| System Error: | 32-144 |
| LEDs Code | Not Applicable. |
| Problem Description: | Stitching failed (it has not been possible for the processor to detect one and only one image of the stitching wire in the scanned input). |
| Corrective Action: | <p>Try the following:</p> <ul style="list-style-type: none"> ■ Make sure that the Glass Plate and the White Background Plate are clean. ■ Run SCANtest 6, test 9 and check the Camera A and B images of the stitching wire. ■ The CCD-centering of one of the CCD-Cameras maybe so much out of adjustment that the image of the stitching wire falls outside the range where it can be detected by the copier - Run SCANtest 6, test 9 and check the CCD-centering. ■ Run the Scanner Maintenance. ■ Replace the Main Electronics Board ⇒ Page 4-27. |
| System Error: | 40-xxx |
| LEDs Code | Diagnostic = Flashing, Wait = OFF, Ready = Flashes twice. |
| Problem Description: | Error on Camera Board. |
| Corrective Action: | <p>Try the following:</p> <ul style="list-style-type: none"> ■ Run SCANtest 6, test 7 to verify the error. ■ Check that all the cable are connected correctly. ■ Run SCANtest 6, test 9 and check the light profiles. ■ Erase the Parameter Blocks. ■ Run the Scanner Maintenance. ■ Replace the Camera Board ⇒ Page 4-16. |
| System Error: | 50-xxx (17 to 28, 51 to 81 and 90 to 99) |
| LEDs Code | Diagnostic = Flashing, Wait = OFF, Ready = Flashes once. |
| Problem Description: | Error on the Main Electronics Board. |
| Corrective Action: | <p>Try the following:</p> <ul style="list-style-type: none"> ■ Check that all the cables are connected correctly to the Main Electronics Board. ■ Replace the Main Electronics Board ⇒ Page 4-27. ■ Run Scanner Maintenance. ■ Upgrade the Scanner Firmware. |

System Error: 50-100 to 50-214

LEDs Code Not Applicable.

Problem Description: Firmware related error.

Corrective Action: Try the following:

- Upgrade the Firmware.
- Erase the Parameter blocks.
- Run Scanner Maintenance.

System Error: 60-xxx (2 to 34, 82, 83)

LEDs Code Diagnostic = Flashing, Wait = OFF, Ready = Flashes 4 times.

Problem Description: The touch screen does not detect the Scanner.

Corrective Action: Try the following:

- Reboot the Scanner.
- Open the WIDSystem (more information maybe available).
- Check that all cables are connected correctly.
- Replace the USB Cable.
- Replace the Interface Board ⇒ Page 4-31.

Parts and Diagrams

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Copier Stand, Touch Screen and Misc. Items

| Copier Stand, Touch Screen and Misc. Items | | | |
|---|-----------------------|-----------------|---|
| Reference on Drawing | HP Part Number | Quantity | Description/Comments |
| 1 | Q1261-60009 | 1 | Stand |
| 2 | Q1261-60022 | 1 | Touch Screen (Exchange Part) |
| 3 | Q1261-60030 | 1 | Nameplate |
| 4 | Q1261-60036 | 1 | Paper Guides |
| - | Q1261-60024 | 1 | Hardware Kit |
| - | Q1261-60038 | 1 | Service Patterns (includes the focus pattern and the calibration sheet) |
| - | Q1261-60039 | 1 | Optical Pattern |

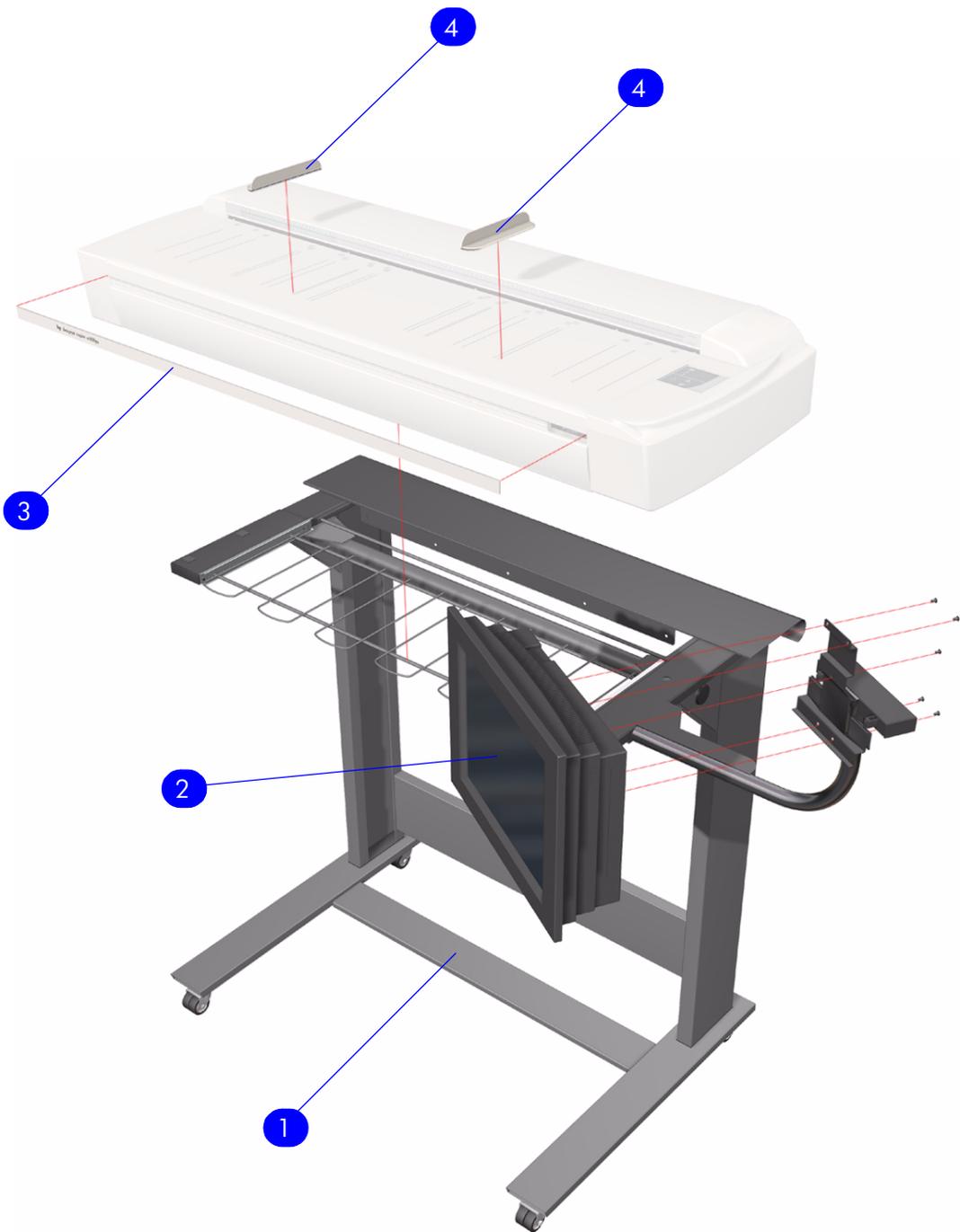


Figure 1: Copier Stand, Touch Screen and Misc. Items

Copier Covers

| Copier Covers | | | |
|----------------------|----------------|----------|---------------------------------------|
| Reference on Drawing | HP Part Number | Quantity | Description/Comments |
| 1 | Q1261-60003 | 1 | Top Cover |
| 2 | Q1261-60004 | 1 | Left Cover |
| 3 | Q1261-60005 | 1 | Right Cover (includes Operator Panel) |
| 4 | Q1261-60006 | 1 | Rear Cover |
| 5 | Q1261-60007 | 1 | Top Profile |

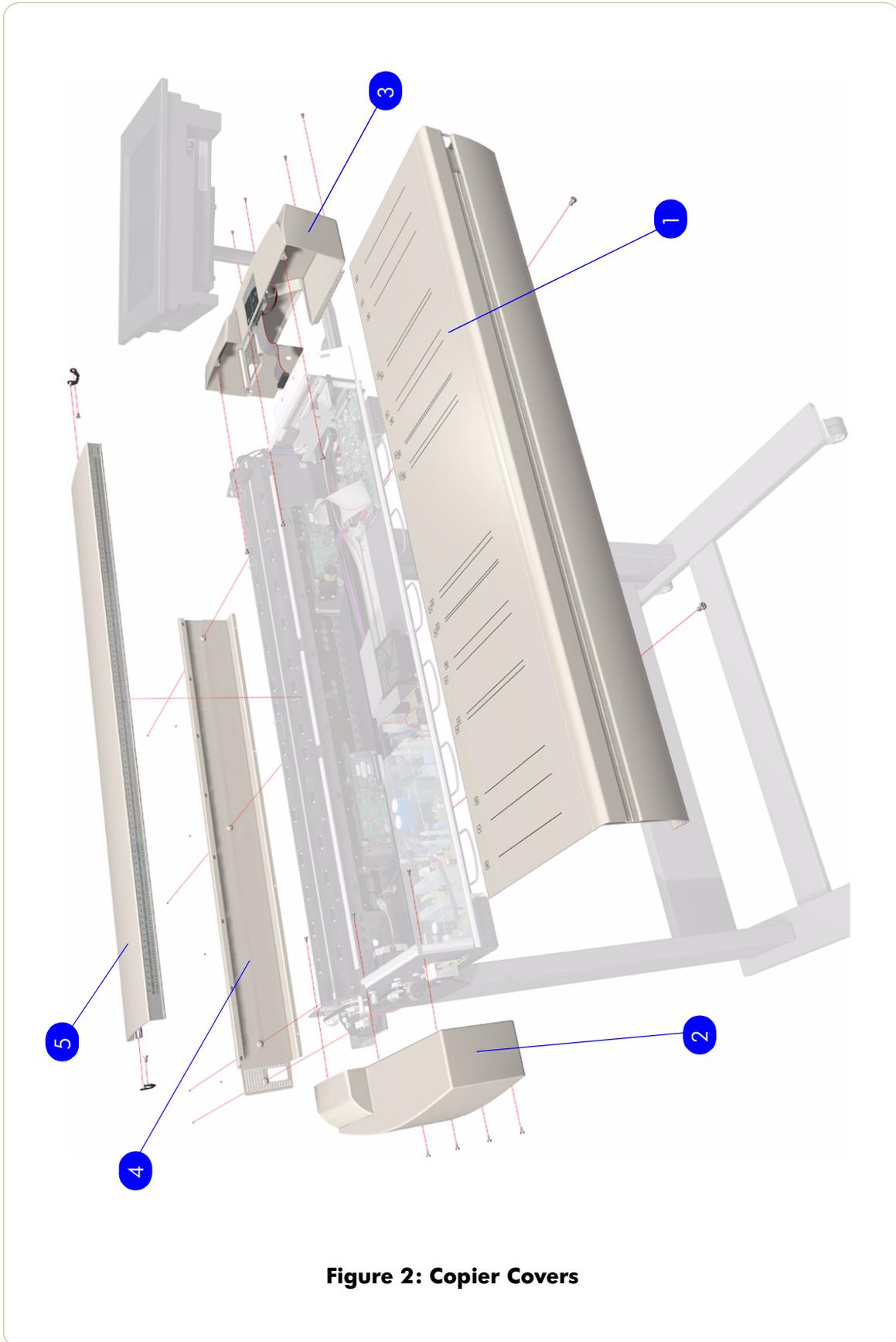


Figure 2: Copier Covers



Top Assemblies

| Top Assemblies | | | |
|----------------------|----------------|----------|--|
| Reference on Drawing | HP Part Number | Quantity | Description/Comments |
| 1 | Q1261-60028 | 1 | Guide Plate (includes the White Background Assembly) |
| 2 | Q1261-60010 | 1 | Glass Plate |
| 3 | Q1261-60026 | 1 | White Background Assembly |
| 4 | Q1261-60027 | 1 | Fluorescent Lamp |