
Rimage AutoPrinter™ Diagnostic Tests



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Rimage AutoPrinter Diagnostic Tests

This document provides the information needed to access, select, and perform the AutoPrinter diagnostic tests for AutoPrinter firmware versions 3.609 and higher. If your system has a firmware version lower than version 3.609, refer to www.rimage.com/support.html for the proper diagnostic test instructions.

The AutoPrinter is part of the Rimage Producer series of products which includes the AutoEverest and AutoPrism AutoPrinters. The term 'system' is used throughout this document to refer to these products.


 **Important!** Make sure that the system is not in an error state before you perform any of the diagnostic tests. Refer to the [Error Codes](#) section on page 10. For more information about operation and maintenance, refer to your system's User Guide.

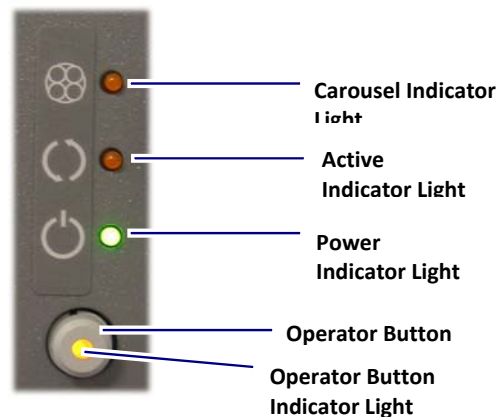
Operator Panel

The system has one button and four indicator lights on the operator panel.

You use the operator button to enter diagnostic mode and select diagnostic tests.

The carousel, active, and operator button indicator lights indicate certain conditions during the diagnostic test cycles.

 **Note:** The operator button indicator light remains illuminated during all of the diagnostic tests.




Access and Select Diagnostic Tests


Access Diagnostic Mode

1. Power on the **system**.
2. Allow the system to initialize. This may take several minutes.
3. Open the **front door** of the system.
4. Press and hold the **operator button**. The carousel light and the active light blink.
5. Hold the **operator button** in for about 10 seconds until the active light turns off and the carousel light illuminates solidly.
6. Release the **operator button**. The system is in diagnostic mode.

Select a Diagnostic Test

1. In diagnostic mode, press the **operator button** the same number of times as the test number (indicated in the test title).
2. Hold the **operator button** in on the last press for five seconds to select the test.
3. When the carousel light is illuminated solidly, release the **operator button**. The active indicator light illuminates.
 **Note:** The carousel indicator light turns off when you cycle through the diagnostic tests, and it illuminates solidly when a test is selected. When you release the operator button, the active indicator light illuminates, which indicates that the system is ready to begin the selected diagnostic test.
4. Continue with the desired diagnostic test.

Exit Diagnostic Test Mode



1. If a diagnostic test is currently in process, press the **operator button** once to stop the test.
 **Note:** In diagnostic test 1 (carousel diagnostic test), you must press and hold the operator button in until the carousel light and the active light turn off to stop the test and return to diagnostic mode.
2. When the diagnostic test is stopped, press the **operator button** six times and hold it in on the sixth press. The active light and the carousel light illuminate.
3. Release the **operator button**. The system exits diagnostic mode and the system resets.

Perform Diagnostic Tests

Diagnostic Test 1 – Carousel Diagnostic Test

This test has two parts. The first part evaluates the position of the carousel, and the second part evaluates the alignment of the lift arm to the carousel.

Check the Position of the Carousel

1. Make sure that the system is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1. Press and hold the operator button to select diagnostic test 1.
2. When the carousel light is illuminated solidly, release the **operator button**. The active light illuminates.
3. Press the **operator button** to rotate the carousel from the current bin position to the next bin position.
 **Note:** While the carousel is rotating, the operator button light turns off. If the carousel is positioned at the target position after each rotation, the operator button light illuminates.
4. Repeat **step 3** for each of the carousel bins.
 **Note:** After the carousel rotates clockwise from bin 1 to the last bin, it rotates counterclockwise from the last bin to bin 1.

5. Proceed to **step 4** in the [Check the Alignment of the Lift Arm to the Carousel](#) section to continue with the second part of diagnostic test 1.

OR

Press and hold the **operator button** until the carousel light and the active light turn off to exit the test and return to diagnostic mode.


Check the Alignment of the Lift Arm to the Carousel

1. Make sure that the system is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press and hold the **operator button** to select diagnostic test 1.
3. When the carousel light is illuminated solidly, release the **operator button**. The active light illuminates.

4. Place a disc on the **lift arm**. Press the disc into the gripper while you press the disc release button.
5. Release the **disc release button**. The gripper holds the disc.




6. Press the **operator button** to rotate the carousel to bin 1.
7. Manually move the **lift arm** and the attached **disc** down into bin 1. Make sure that the disc does not interfere with the carousel as it moves into the bin.


 **Important!** If the disc interferes with the carousel in step 7, the lift arm may be miscalibrated or there may be an issue with the carousel positioning hardware. Perform Diagnostic Test 3 – Calibrate Diagnostic Test on page 5 to calibrate the lift arm and the carousel.

8. Manually move the **lift arm** out of bin 1.
9. Repeat **steps 6 - 8** for the remaining bins.
10. Press the **disc release button** to release the **disc** and remove it from the lift arm.
11. Press and hold the **operator button** until the carousel light and the active light turn off to exit the test and return to diagnostic mode.
12. Release the **operator button**. The carousel light illuminates.
13. Refer to the [Exit Diagnostic Mode](#) section on page 2 to exit diagnostic mode.

Diagnostic Test 2 – Cycle Diagnostic Test

This test has six modes. The modes are determined by whether or not a disc is present and where it is placed. The cycle begins when the system detects an open printer tray or recorder tray, or the disc diverter in the down position. The lift arm moves to the location of the disc, if one is present.

 **Important!** Before you cycle media, make sure that the printer and recorders are properly aligned.


 **Note:** After diagnostic test 2 is selected, the system pauses and the operator button light flashes. This pause allows you to load media into the system and select the devices to use during the test cycle. When the diagnostic test begins, the operator button light turns off.


Cycle a Disc between the Carousel Bins

This test cycles media between the carousel bins.

1. Make sure that the system is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **operator button** two times and hold it in on the second press to select diagnostic test 2.
3. When the carousel light is illuminated solidly, release the **operator button**. The active light illuminates and the operator button light flashes.
4. Make sure that the recorder and printer trays are closed and the disc diverter is in the home position.
5. Place one or more **discs** in bin 1.


 **Important!** Make sure bin 4 is empty before you begin this test.


 **Tip:** If you need to rotate the carousel to load media into bin 1, rotate it manually. Pressing the operator button prompts diagnostic test 2 to begin.

6. Press the **operator button**. The operator button light turns off.
 - The system checks all bins for media and then rotates to bin 1.
 - The lift arm picks a disc from bin 1 and releases the disc into bin 4.
 - The lift arm checks bin 1 for more discs.
 - If no discs are found in bin 1, the lift arm proceeds to the next bin to check for discs.
 - If no discs are found in the next bins, the lift arm picks a disc from bin 4 and releases it into bin 3.
-  **Note:** The cycle continues until you press the operator button to stop the test.
7. Press the **operator button** to stop the test and return to diagnostic mode.
8. Remove the **disc(s)** from the carousel.

Diagnostic Test 3 – Calibrate Diagnostic Test

This test has two modes. The first mode calibrates the lift arm to accurately detect the number of discs in the carousel bins. The second mode calibrates the carousel.

 **Important!** If you are updating the system firmware, you must prompt the system to run the carousel calibration test immediately after the lift arm calibration test.

 **Note:** After diagnostic test 3 is selected, the system pauses and the operator button light flashes. This pause allows you to load media into the system and select the devices to use during the cycle. When the diagnostic test begins, the operator button illuminates solidly.

Calibrate the Lift Arm

This test calibrates the lift arm to accurately detect the number of discs in the carousel bins.


1. Remove all **discs** from the carousel bins.
2. Make sure that the system is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
3. Press the **operator button** three times and hold it in on the third press to select diagnostic test 3.
4. When the carousel light is illuminated solidly, release the **operator button**. The active light illuminates and the operator button light flashes. The lift arm moves to the home position.

 **Important!**


- If you are updating the system firmware, you must prompt the system to run the carousel calibration test immediately after the lift arm calibration test. Move the lift arm to the top of the lift column at this time and then continue to step 5.
- If you want to proceed with the lift arm calibration test only, continue to step 5 at this time.

5. Place one **disc** in bin 1.


 **Important!** Place only one disc in bin 1.

 **Tip:** If you need to rotate the carousel to load media into bin 1, rotate it manually. Pressing the operator button prompts diagnostic test 3 to begin.

6. Press the **operator button**. The operator button light illuminates.
 - The lift arm moves down into bin 1.
 - The lift arm picks up and releases the disc.
 - The lift arm moves up to its home position.
 - The lift arm moves back down into bin 1, picks up the disc, and releases the disc into bin 2.
 - The carousel rotates back to bin 1.

 **Important!** If you moved the lift arm to the top of the lift column in step 4, the lift arm moves to the carousel and the operator button light flashes. Place one disc on the lift arm and continue to step 8 in the *Calibrate the Carousel* section.

- The system exits diagnostic test 3 and the system resets.

 **Note:** Diagnostic test 3 causes the system to exit diagnostic mode. To continue with the diagnostic tests, refer to the [Access and Select Diagnostic Tests](#) section on page 1.


Calibrate the Carousel

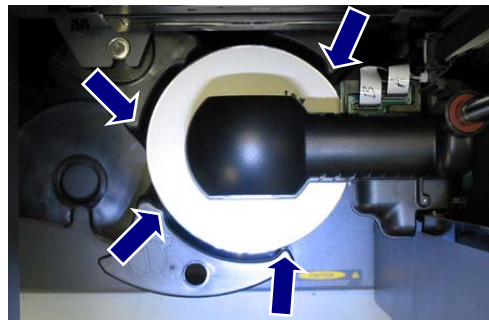
This test measures the position of the carousel, as well as the gear-train backlash of the carousel.


1. Remove all **discs** from the carousel bins.
2. Make sure that the system is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
3. Press the **operator button** three times and hold it in on the third press to select diagnostic test 3.
4. When the carousel light is illuminated solidly, release the **operator button**. The active light turns on and the operator button light flashes. The lift arm moves to its home position.
5. Move the **lift arm** to the top of the lift column.
6. Place one **disc** on the lift arm. Press the **disc** into the gripper while you press the **disc release button**.
7. Press the **operator button**. The operator button light illuminates. The carousel rotates and the lift arm lowers to bin 1.
8. Manually, slowly lower the **lift arm** and the attached **disc** into bin 1.

 **Note:** The system will not allow the disc to move below about 0.25 inches from the top of the carousel.

9. Manually, slightly rotate the **carousel** so that the distance between the edges of the carousel and the edge of the disc is equal on all four points, as shown.


 **Note:** The edge of the disc should not touch any part of the carousel. If you cannot center the carousel in this step, the lift arm may need to be readjusted.



10. Press the **operator button**. The operator button light illuminates.
 - The lift arm lowers and pins the disc into the bottom of bin 1 to measure the gear-train backlash of the carousel.
 - The lift arm releases the disc and the system measures the position of the carousel.
 - If the carousel offset is less than 0, the carousel indicator light illuminates.
 - If the carousel offset is greater than 0, the active indicator light illuminates.
 - If the carousel offset is equal to 0, both the carousel light and the active indicator light illuminate.
 - The system exits diagnostic test 3 and the system resets.
-  **Note:** Diagnostic test 3 causes the system to exit diagnostic mode. To continue with the diagnostic tests, refer to the [Access and Select Diagnostic Tests](#) section on page 1.

Diagnostic Test 4 – Sensor Diagnostic Test

This test verifies that the various sensors used in the system function correctly.

 **Note:** During the sensor diagnostic test, the operator button light flashes briefly each time the status of a sensor changes.

Access and Start the Sensor Diagnostic Test

1. Make sure that the system is in diagnostic mode. Follow the instructions in the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **operator button** four times and hold it in on the fourth press to select diagnostic test 4.
3. When the carousel light is illuminated solidly, release the **operator button**. The active light illuminates and the carousel light flashes.

 **Note:** The carousel light continues to flash during the sensor diagnostic test.

Lift Home Sensor

This test verifies that the lift home sensor functions correctly. The lift home sensor detects when the lift arm reaches the top of the lift column.


1. Manually move the **lift arm** away from the top of the lift column. The operator button light flashes to show the change in status.
2. Manually move the **lift arm** toward the top of the lift column. The operator button light flashes.
3. To exit the test now and return to diagnostic mode, press the **operator button**.

To continue with the next sensor test, follow the *Carousel Home Sensor* instructions.

Carousel Home Sensor


This test verifies that the carousel home sensor functions correctly. The carousel home sensor detects the bin position of the carousel, as well as whether the carousel is installed.

1. Make sure the **carousel** is installed in the correct position.
2. Manually rotate the **carousel** counterclockwise. When the carousel home sensor detects the **home position**, the operator button light flashes to show the change in status.

 **Tip:** You can rotate the carousel in either direction. The sensor must detect the gap in the metal carousel base once per revolution.

 **Note:** The home position is a gap in the metal carousel base.

3. Rotate the **carousel** clockwise, away from the carousel home position. The operator button light flashes.

 **Tip:** You can also test the carousel position counter system during this sensor test. When you manually rotate the carousel, verify that the carousel light illuminates solidly. Refer to the [Carousel Position Counter System](#) instructions on page 8.

4. To exit the test now and return to diagnostic mode, press the **operator button**.

To continue with the next sensor test, follow the *Media Sensor* instructions.

Media Sensor

This test verifies that the gripper media sensor that is located in the lift arm functions correctly.

1. With the tip of your finger, press and hold the **disc plunger**. The operator button light flashes to show the change in status.
2. Release the **disc plunger**. The operator button light flashes.
3. To exit the test now and return to diagnostic mode, press the **operator button**.


To continue with the next sensor test, follow the *Rotator Home Sensor* instructions.

Rotator Home Sensor

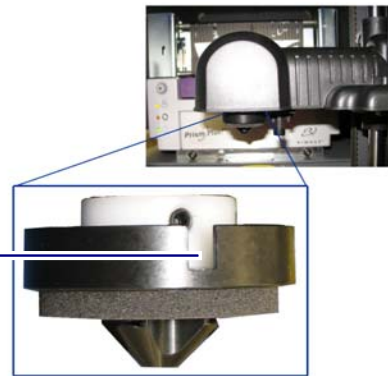
This test verifies that the rotate home sensor on the gripper assembly functions correctly.

1. Manually rotate the **grripper hub** counterclockwise.

When the rotate home sensor detects the rotate home position, the operator button light flashes to show the change in status.

 **Note:** You can rotate the gripper hub in either direction. The rotate home position is a gap in the ring of the gripper hub. There are two gaps in the ring of the gripper hub. The rotate home position is detected two times each revolution.

Rotate
Home
Position



2. To exit the test now and return to diagnostic mode, press the **operator button**.

To continue with the next sensor test, follow the *Carousel Position Counter System* instructions.

Carousel Position Counter System

This test verifies that the carousel motor sensor functions correctly.

1. Manually move the **carousel**. The carousel light illuminates solidly while the carousel is in motion.
2. To exit the test now and return to diagnostic mode, press the **operator button**.

To continue with the next sensor test, follow the *Lift Position Counter System* test instructions.

Lift Position Counter System

This test verifies that the lift arm motor sensor functions correctly.

1. Manually move the **lift arm**. The active indicator light illuminates solidly while the lift arm is in motion.
2. To exit the test now and return to diagnostic mode, press the **operator button**.
3. Refer to the [Exit Diagnostic Mode](#) section on page 2 to exit diagnostic mode.

Diagnostic Test 5 – Solenoid Diagnostic Test

This test powers on and off the gripper solenoid, which moves the gripper fingers. It is used to verify proper mechanical alignment of the solenoid.

1. Make sure that the system is in diagnostic mode. Follow the instructions in the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **operator button** five times and hold it in on the fifth press to select diagnostic test 5.
3. When the carousel light is illuminated solidly, release the **operator button**. The active light illuminates.

The gripper mechanism opens and closes. The operator button flashes during each cycle.

 **Note:** The cycle continues until you press the operator button to stop the test.

4. Press the **operator button** to stop the test.

Exit Diagnostic Mode

When the diagnostic test is stopped, press the **operator button** six times and hold it in on the sixth press. The active indicator light and the carousel light illuminate. The system exits diagnostic mode, and the system resets.

Error Codes

If an error occurs, the carousel indicator light blinks a number of times. The number of blinks indicates the error number. The light repeats the same number of blinks and pauses between each repetition. Use the table below to determine the problem and the solution.

Error #	Problem	Solution
1	Recovered error (retry required). The last command was completed successfully with a recovery action.	Not applicable.
2	The system was powered on and is not ready.	Retry the operation.
3	Lost media. Indicates that the system did not grip the media, could not find the index mark during Perfect Print, or the media is not present.	Verify that media is present. If media is present: <ul style="list-style-type: none">• Verify that the media is not warped or misshaped.• Make sure that the lift arm is properly aligned with the printer, recorder, and carousel bin.• Verify that the lift arm functions properly.• Run the media sensor test (diagnostic test 4) to verify that the media present sensor functions properly.
4	A disc was dropped.	Look in the carousel for the dropped media. The dropped media could be upside down.
5	Illegal parameter in the command.	Repeat the previous operation.
6	Door open. Indicates that the door is open or was opened during operation.	Close the door.
7	No device detected. The lift arm was requested to locate a recorder or printer drawer and could not find one.	Verify that there is power to the recorders and the printer. Use Rimage System Manager to determine if the printer and recorders are online. If either device is not online, refer to the system's User Manual to properly connect it.
8	No carousel.	Place the carousel in the system or verify that the carousel is properly seated.
9	Printer did not respond.	Look at the indicator lights on the front panel of the printer to verify that the printer is powered on. Verify that the control cable is connected at the rear of the printer.

10	Cannot position the carousel.	Look for obstructions that may not allow the carousel to rotate. Verify that the carousel is properly seated and the locating pin is in the carousel bracket.
11	Cannot position the lift arm.	Use diagnostic test 3 to verify that the lift arm functions properly. Make sure the printer is aligned with the gripper fingers.
12	Tray detect sensor does not function.	Use diagnostic test 4 to make sure that the tray detect sensor functions properly.
13	Reserved.	Not applicable.
14	Printer is busy.	The printer could still be in the initialization stage. Verify whether the printer is powered on, locked up, or if the side cover is open.
15	Host communication failure.	Make sure that the serial cable is connected from the system to the PC.
16	Program FLASH failure; cannot program the FLASH memory.	Update the firmware. Refer to the Rimage website, www.rimage.com , for instructions. If the updated firmware does not solve the problem, replace the main circuit board.
17	Rotate medium failure.	<ol style="list-style-type: none"> 1. If you are using Perfect Print, verify that the disc has an index mark and that the color, placement, and size of the mark are correct. 2. Make sure that the sensor selector switches under the lift arm assembly are set to the index sensor, not the edge sensor. 3. Place a disc on the lift arm and manually rotate the disc around the gripper hub. If the disc does not rotate, contact Rimage.
18	Mailslot failure.	Use diagnostic test 4 to verify that the output bin sensor and the disc diverter home position sensor function correctly. Use diagnostic test 2 to make sure that the disc diverter functions correctly.



19 Perfect Print failure. Perfect Print normally aligns to the index mark on the disc, drops the disc onto the printer drawer, aligns the lift arm to avoid collision with the printer's center pin, picks up the disc, and realigns to the index mark. This error indicates that the second alignment rotation was outside of the allowed tolerance of $360^{\circ} \pm 15^{\circ}$.

More than one index mark was detected on the disc, or the disc was placed incorrectly on the printer drawer during the initial alignment.

1. Inspect the disc for multiple index marks or other print marks in the index mark path. If the center marks are within the index mark zone, the error could be caused by the calibration process.
2. Verify that there is proper alignment between the printer and the lift arm.
3. Verify that the printer drawer is seated properly on the mounting plate.

Support information

Contact Rimage US, Asia/Pacific, Mexico/Latin America:

-  **Web:** www.rimage.com/support
-  **KnowledgeBase:** <http://rimage.custhelp.com>
-  **North America:** 800-553-8312
-  **Asia/Pacific, Mexico/Latin America:** 952-946-0004

When you contact Rimage Support, please provide:

- Unit serial number and software version.
- Functional and technical description of the problem.
- Exact error message received.

Contact Rimage Europe:

-  **Web:** www.rimage.de
-  **Email:** support@rimage.de
-  **Tel:** +49-(0) 1805-7462-43
-  **Fax:** +49-(0) 6074-8521-101

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