
Rimage Catalyst™ Perform Diagnostic Tests

This document provides the information needed to access, select, and perform the Catalyst diagnostic tests for firmware versions 10.000 or higher.

The 6000N and 6000 are part of the Rimage Catalyst family of products. The terms 'Catalyst,' 'system,' and 'autoloader' are used throughout this document to refer to these products.



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Rimage Catalyst™ Perform Diagnostic Tests

This document provides the information needed to access, select, and perform the Catalyst diagnostic tests. These tests apply to the Catalyst 6000N and Catalyst 6000.

The terms 'Catalyst,' 'system,' and autoloader are used throughout this document to refer to these products.

Important! Make sure that the Catalyst system is not in an error state before you perform any of the diagnostic tests. For information about Catalyst system operation and maintenance, refer to the *Rimage Catalyst User Guide*.

The **system button** used throughout these tests is pictured here.



Access and Select Diagnostic Tests

Access Diagnostic Mode

1. Power on the **autoloader**.
2. Allow the autoloader to initialize. This may take several minutes.
3. Open the **front door** of the autoloader.
4. Press and hold the **system button** until [BUTTON DIAGNOSTIC] displays on the display panel.
Note: Other status messages display on the display panel while the system button is being held in. Do not release the button until the display panel displays [BUTTON DIAGNOSTIC].
5. Release the **system button**. [CHOOSE DIAGNOSTIC] displays on the display panel. The autoloader is in diagnostic mode.

Select a Diagnostic Test

1. Press the **system button** the same number of times as the test number (indicated in the test title).
2. Hold the **system button** in on the last press for five seconds to start the selected test.
For example: To start diagnostic test 3 (calibrate diagnostic test), press the **system button** three times and hold on the third press.
Tip: To display each diagnostic test number and name, press the **system button** at a rate that is slow enough to read the test on the display panel. If you pass the desired diagnostic test, release the system button and wait for the autoloader to return to diagnostic mode. The display panel displays [CHOOSE DIAGNOSTIC].
3. Continue with the desired diagnostic test.

Exit Diagnostic Mode

1. If a diagnostic test is currently in process, press the **system button** once to stop the test.
Note: To exit diagnostic test 1 (carousel diagnostic test), press and hold the system button to stop the test and return to diagnostic mode.
2. When the diagnostic test is stopped, press the **system button** six times and hold it in on the sixth press. The display panel displays [EXIT DIAGNOSTIC].
3. Release the **system button**. The autoloader exits diagnostic mode and the system resets.

Use a Disc with an Index Mark

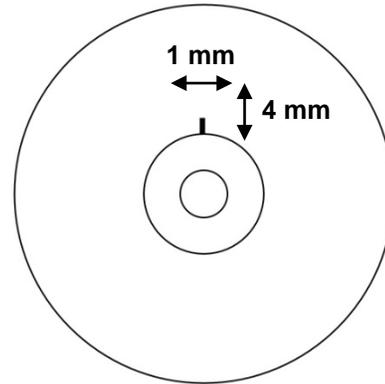
If your Catalyst system uses a Prism™ printer with the Perfect Print function, you can use a disc with an index mark during the diagnostic test cycles that involve the printer. During certain cycles of diagnostic test 2 (cycle diagnostic test), the lift arm rotates to locate the index mark on the disc, if one is present.

If your Catalyst system does not use a Prism printer with the Perfect Print function, you do not need to use a disc with an index mark during any of the diagnostic tests.

Create a Disc with an Index Mark

If you need to create a disc with an index mark for the Prism Perfect Print function, use a black permanent marker to draw a line on a disc near the center, as shown.

Note: The mark should be at least 1 mm wide and 4 mm long.



Perform Diagnostic Tests

Diagnostic Test 1 – 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 autoloader is in diagnostic mode. Follow the instructions in the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **system button** one time and hold it in on the first press until the display panel displays [01 SOLENOID DIAGNOSTIC].
3. Release the **system button**. The gripping mechanism opens and closes. Each time the mechanism opens and closes, the cycle count increments by one on the display panel.
4. Press the **system button** to stop the test.

Diagnostic Test 2 – Cycle Diagnostic Test

This test has seven modes. The mode selected is determined by the open/closed state of the printer, recorders, and diverter elements, and the placement of discs at the start of the test. The cycle begins when the autoloader 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 recorder(s) are properly aligned.

Note: After diagnostic test 2 is selected, the autoloader pauses, allowing you to load media and select the device(s) to use during the test cycle.

Cycle a Disc between the Carousel Bins

This tests cycles media between the carousel bins.

1. Make sure that the autoloader is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **system button** two times and hold it in on the second press until the display panel displays [02 CYCLE SELECTED].
3. Release the **system button**.
4. Make sure that the recorder and printer trays are closed and output bin is full.
5. Place one or more **discs** in bins 1 and/or 2, with bin 3 empty.

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Important! Make sure bin 3 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 system button prompts diagnostic test 2 to begin.

6. Press the **system button**. The autoloader checks all devices. When the test begins, the display panel displays [02 CYCLE CYCLE = 000000].

Tip: The cycle count shows the total number of cycles for the system and does not reset to 0 for any reason.

- The lift arm picks a disc from bin 1 and releases it into bin 3.
- 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 3 and releases it into bin 1.
- Each time a disc is picked and placed in a bin, the cycle count increments by one on the display panel.

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

7. Press the **system button** to stop the test and return to diagnostic mode.
8. Remove the **disc(s)** from the carousel.

Cycle a Disc between the Carousel Bins and the Output Bin

This test cycles media from the carousel bins to the output bin.

1. Make sure that the autoloader is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **system button** two times and hold it in on the second press until the display panel displays [02 CYCLE SELECTED].
3. Release the **system button**.
4. Make sure that the recorder tray(s) and the printer tray are closed and the output bin is not full.
5. Place one or more **discs** in bins 1, 2 and 3

Important! Make sure there is at least one disc in every bin before you begin this test.

Tip: If you need to rotate the carousel to load media into the bins, rotate it manually. Pressing the system button prompts diagnostic test 2 to begin.

6. Press the **system button**. The autoloader checks all devices and the disc diverter moves up to the home position. When the test begins, the display panel displays [02 CYCLE CYCLE =000000].

Tip: The cycle count shows the total number of cycles for the system and does not reset to 0 for any reason.

- The lift arm picks a disc from bin 1 and moves past the disc diverter.
Note: The lift arm starts to pick discs from bin 1. If there is not a disc in bin 1, the lift arm proceeds to bin 2.
- The disc moves into the output bin.
- The cycle count increments by one on the display panel.

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

7. Press the **system button** to stop the test and return to diagnostic mode.
8. Remove the **disc(s)** from the carousel.

Cycle a Disc between the Carousel Bins and the Printer

This test cycles media between the carousel bins and the printer tray.

Note: During each cycle, the lift arm locates the index mark on the disc, if one is present. Refer to the [Use a Disc with an Index Mark](#) section on page 2.

1. Make sure that the autoloader is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **system button** two times and hold it in on the second press until the display panel displays [02 CYCLE SELECTED].

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3. Release the **system button**.
4. Make sure the recorder tray(s) are closed and the output bin is full.
5. Place one or more **discs** in bins 1 and/or 2, with bin 3 empty.

Important! Make sure bin 3 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 system button prompts diagnostic test 2 to begin.

6. Press the **printer button** to open the printer tray.
7. Press the **system button**. The autoloader checks all devices and the printer tray closes. When the test begins, the display panel displays [02 CYCLE CYCLE = 000000].

Tip: The cycle count shows the total number of cycles for the system and does not reset to 0 for any reason.

- The lift arm lowers to bin 1 and picks up a disc.
Note: The lift arm starts to pick discs from bin 1. If a disc is not in bin 1, the lift arm proceeds to the next bin.
- The lift arm moves to its home position above the printer. The printer tray opens.
- The lift arm rotates the disc to locate the index mark, if one is present.
- The lift arm releases the disc on to the printer tray.
- The lift arm picks up the disc from the printer tray and releases it into bin 3.
- The cycle count increments by one on the display panel.
Note: The cycle continues until you press the system button to stop the test.

8. Press the **system button** to stop the test and return to diagnostic mode.
9. Remove the **disc(s)** from the carousel.

Cycle a Disc between the Carousel Bins, the Printer, and the Output Bin

This test cycles media between the carousel bins, the printer tray, and the output bin.

Note: During each cycle, the lift arm locates the index mark on the disc, if one is present. Refer to the [Use a Disc with an Index Mark](#) section on page 2.

1. Make sure that the autoloader is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **system button** two times and hold it in on the second press until the display panel displays [02 CYCLE SELECTED].
3. Release the **system button**.
4. Make sure the recorder tray(s) are closed, with output bin not full.
5. Place one or more **discs** in bin 1, 2 or 3.

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

6. Press the **printer button** to open the printer tray.
7. Press the **system button**. The autoloader checks all devices. The printer tray closes and the disc diverter moves up to the home position. When the test begins, the display panel displays [02 CYCLE CYCLE = 000000].

Tip: The cycle count shows the total number of cycles for the system and does not reset to 0 for any reason.

- The lift arm moves down to bin 1 and picks up a disc.
Note: The lift arm starts to pick discs from bin 1. If a disc is not in bin 1, the lift arm proceeds to the next bin.
- The lift arm moves to the home position and the printer tray opens.
- The lift arm rotates the disc to locate the index mark, if one is present.
- The lift arm releases the disc on to the printer tray.

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- The lift arm picks up the disc from the printer tray.
- The disc diverter drops and the lift arm releases the disc on to the disc diverter.
- The disc moves into the output bin.
- The cycle count increments by one on the display panel.

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

8. Press the **system button** to stop the test and return to diagnostic mode.
9. Remove the **disc(s)** from the carousel.

Cycle a Disc between a Recorder and the Printer

This test cycles media between a recorder tray and the printer tray.

Note: During each cycle, the lift arm locates the index mark on the disc, if one is present. Refer to the *Use a Disc with an Index Mark* section on page 2.

Important! Before you cycle media between a recorder and the printer, make sure that the printer and recorder(s) are properly aligned.

1. Make sure that the autoloader is in diagnostic mode. Refer to the *Access and Select Diagnostic Tests* section on page 1.
2. Press the **system button** two times and hold it in on the second press until the display panel displays [02 CYCLE SELECTED].
3. Release the **system button**.
4. Open one **recorder tray**.
5. Place one **disc** on the open recorder tray.

Important! Do not close the recorder tray.

6. Open the **printer tray**.
7. Press the **system button**. The autoloader checks all devices and the printer tray closes. When the test begins, the display panel displays [02 CYCLE CYCLE = 000000].

Tip: The cycle count shows the total number of cycles for the system and does not reset to 0 for any reason.

- The lift arm picks up the disc from the recorder tray and rotates the disc to locate the index mark, if one is present.
- The lift arm moves to the home position.
- The printer tray opens and the lift arm places the disc on the printer tray.
- The printer tray clamps and unclamps the disc.
- The lift arm picks up the disc from the printer tray and the printer tray closes.
- The lift arm places the disc on the recorder tray.
- The cycle count increments by one on the display panel.

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

8. Press the **system button** to stop the test and return to diagnostic mode.
9. Remove the **disc** from the recorder tray.
10. Close the **recorder tray**.

Cycle at a Recorder

Important! Before you cycle media, make sure that the printer and recorder(s) are properly aligned.

1. Make sure that the autoloader is in diagnostic mode. Refer to the *Access and Select Diagnostic Tests* section on page 1.
2. Press the **system button** two times and hold it in on the second press until the display panel displays [02 CYCLE SELECTED].
3. Release the **system button**.

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4. Make sure that the **printer tray** is closed.
5. Open one **recorder tray**.
6. Place one **disc** on the recorder tray.

Important! Do not close the recorder tray.

7. Press the **system button**. The autoloader checks all devices. When the test begins, the display panel displays [02 CYCLE CYCLE = 000000].

Tip: The cycle count shows the total number of cycles for the system and does not reset to 0 for any reason.

- The lift arm picks up the disc from the recorder tray and places the disc back down on the recorder tray.
- Each time that the disc is picked up and placed on the recorder tray, the cycle count increments by one on the display panel.

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

8. Press the **system button** to stop the test and return to diagnostic mode.
9. Remove the **disc** from the recorder tray.
10. Close the **recorder tray**.

Cycle the Lift Arm and the Printer

Important! Before you cycle media, make sure that the printer and recorder(s) are properly aligned.

1. Make sure that the autoloader is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **system button** two times and hold it in on the second press until the display panel displays [02 CYCLE SELECTED].
3. Release the **system button**.
4. Make sure the **recorder tray(s)** are closed.
5. Open the **printer tray**.
6. Place a **disc** on the printer tray.

Important! Do not close the printer tray.

7. Press the **system button**. The autoloader checks all devices. When the test begins, the display panel displays [02 CYCLE CYCLE = 000000].

Tip: The cycle count shows the total number of cycles for the system and does not reset to 0 for any reason.

- The lift arm picks up the disc from the printer tray and rotates the disc to locate the index mark, if one is present.
- The lift arm places the disc back on the printer tray.
- Each time that the disc is picked up and placed on the printer tray, the cycle count increments by one on the display panel.

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

8. Press the **system button** to stop the test and return to diagnostic mode.
9. Remove the **disc** from the printer tray.
10. Close the **printer tray**.
11. Refer to the [Exit Diagnostic Mode](#) section on page 1 to exit diagnostic mode.

Diagnostic Test 3 – Calibrate Diagnostic Test

Important! Do not perform this test unless recommended to do so by a Rimage technician. Performing this test could negatively impact system performance.

This test calibrates the lift arm and the carousel.

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

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 autoloader is in diagnostic mode. Refer to the [Access and Select Diagnostic Tests](#) section on page 1.
3. Press the **system button** three times and hold on the third press until the display panel displays [03 CALIBRATE].
4. Release the **system button**. The display panel shows [EMPTY BIN 1 DISC ON GRIPPER]
5. Press the **system button**. The system moves the disc close to the top of the carousel and the display panel shows [ADJUST CAROUSEL]
6. Move the carousel by hand until bin 1 is centered on the disc in the gripper. The gripper can be moved by hand into the carousel to compare the disc edge to the carousel wall.
7. Press the **system button** once the bin is centered.
 - The system will drop the disc into bin 1 then automatically measure the lift and gripper length. It will then pick the disc up from bin 1. When finished, the display panel will show [MOVE LIFT TO OUTPUT BIN]
8. Move the gripper so that the disc is just above the highest tips of the output slide. This sets the position to release the disc into the external output bin. Press the **system button** to set the position.
 - The gripper releases the disc
 - The system then checks to ensure bin 1 is empty. If bin 1 is empty, the display panel will show [CALIBRATION SAVED]
 - If bin 1 was not empty, the system will not be able to save the calibration and the display panel will show [CALIBRATION NOT SAVED]. The test will need to be repeated with all discs removed from bin 1.
 - Once the calibration is complete, the system will automatically exit diagnostics and the software can be restarted.

Diagnostic Test 4 – Sensors Diagnostic Test

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

Note: A beep sounds each time the status of a sensor changes.

Access and Start the Sensors Diagnostic Tests

1. Make sure that the autoloader is in diagnostic mode. Follow the instructions in the [Access and Select Diagnostic Tests](#) section on page 1.
2. Press the **system button** four times and hold on the fourth press until the display panel displays [04 SENSOR DIAGNOSTIC].
3. Release the **system button**.

Sensor Results

The display panel shows the status of each sensor and the location of the carousel and lift arm.

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L+00000 ODCGTRI C+00000 0000000

- L+00000 is the 5-digit lift position count. It increments/decrements if the lift is moved by hand
- C+00000 is the 5-digit carousel position count. It increments/decrements if the carousel is moved by hand.

The right half of the display shows the status of individual sensors, with each sensor identified by a single letter.

- 0 indicates that the sensor is clear/closed
- 1 indicates that the sensor is interrupted/open

The sensors are represented with:

- O – Output bin full
- D – Door open/closed
- C – Carousel home position
- G – Gripper disc detect
- T – Gripper tray detect
- R – Perfect Print rotator home – Only applies to Catalyst systems with Perfect Print option
- I – Index mark sensor – Only applies to Catalyst systems with Perfect Print option

Exit Diagnostic Mode

When the diagnostic test is stopped, press the **system button** six times and hold it in on the sixth press until the display panel displays [EXIT DIAGNOSTIC]. The autoloader exits diagnostic mode and the system resets.

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When you contact Rimage Services, please provide:

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

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