

Rear Vision Camera System Malfunction

Diagnostic Instructions

- Perform the [Diagnostic System Check - Vehicle](#) prior to using this diagnostic procedure.
- Review [Strategy Based Diagnosis](#) for an overview of the diagnostic approach.
- [Diagnostic Procedure Instructions](#) provides an overview of each diagnostic category.

Circuit/System Description

The inside rearview mirror (ISRVM) has only one voltage source for operation of all mirror functions. With the ignition in RUN all functions of the ISRVM will default to ON. The dual temperature display and rear vision indicators will be illuminated. The ISRVM receives a 12-volt signal from the body control module (BCM) indicating that the vehicle is in reverse gear. The rear vision display will then be deployed from the ISRVM providing a view to the rear of the vehicle. When the display is extended the ISRVM will supply the camera with a 12-volt power source. If a problem exists with the object detection display not deploying or if a proper video signal is not detected, the rear vision ON/OFF indicator located on the ISRVM will flash.

Reference Information

Schematic Reference

Object Detection Schematics

Connector End View Reference

Object Detection Connector End Views

Description and Operation

Object Detection Description and Operation

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Circuit/System Verification

1. Inspect the rearview camera for any debris on the lens or a damage bezel or bezel seal.
Clean any debris from the lens. If the lens, bezel, or bezel seal are damaged, replace as necessary
2. Ignition ON, vehicle in PARK, verify the backup lamps are OFF.
If the backup lamps are illuminated, refer to Rear Vision System Always On.
3. Command the backup lamps ON with a scan tool, a clear rear view image should be displayed

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on the rear view camera display.

If a clear image is not displayed, refer to [Rear Vision System Does Not Display](#).

Circuit/System Testing

Rear Vision System Always On

1. Ignition OFF, disconnect the harness connector at the inside rear view mirror.
2. Ignition ON, vehicle in PARK, verify a test lamp does not illuminate between the control circuit terminal 9 and ground.
If the test lamp illuminates, test the control circuit for a short to voltage. If the circuit test normal, refer to [Backup Lamps Always On](#) .
3. If all circuits test normal, replace the inside rear view mirror.

Rear Vision System Does Not Display

1. Ignition OFF, disconnect the harness connector at the inside rearview mirror.
2. Ignition ON, vehicle in PARK, verify that a test lamp illuminates between the ignition circuit terminal 13 and ground.
If the test lamp does not illuminate, test the ignition circuit for a short to ground or an open/high resistance.
3. Verify that a test lamp illuminates between the ignition circuit terminal 13 and the ground circuit terminal 8.
If the test lamp does not illuminate, test the ground circuit for an open/high resistance.
4. Park brake applied, transmission in reverse, verify that a test lamp illuminates between the control circuit terminal 9 and ground.
If the test lamp does not illuminate, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the body control module (BCM).
5. Ignition OFF, connect the harness connector at the inside rearview mirror. Disconnect the harness connector at the rear view camera.
6. Park brake applied, transmission in reverse, verify a test lamp illuminates between the ignition circuit terminal C and ground.
If the test lamp does not illuminate, test the ignition circuit for a short to ground or an open/high resistance. If the circuit tests normal, test or replace the inside rearview mirror.
7. Park brake applied, transmission in reverse, verify a test lamp illuminates between the ignition circuit terminal C and the ground circuit terminal D.
If the test lamp does not illuminate, test the ground circuit for an open/high resistance. If the circuit tests normal, test or replace the inside rearview mirror.
8. Ignition OFF, disconnect the harness connector at the inside rearview mirror.
9. Ignition ON, test for less than 1 volt between the following signal circuit terminals and ground:
 - Video + circuit terminal 1
 - Video- circuit terminal 2If greater than the specified value, test the signal circuit for a short to voltage.
10. Test for infinite resistance between the following signal circuit terminals and ground:
 - Video + circuit terminal 1
 - Video- circuit terminal 2If less than the specified value, test the signal circuit for a short to ground.
11. Test for less than 2 ohms of resistance between the video + circuit terminal 1 at the inside rearview mirror and the video + circuit terminal A at the rear view camera.

If greater than the specified range, test the video+ circuit for an open/high resistance.

12. Test for less than 2 ohm of resistance between the video- circuit terminal 2 at the inside rearview mirror and the video- circuit terminal E at the rear view camera.
13. If all circuits test normal, replace the rear view camera and test the system for proper operation. If the condition continues after replacement, replace the inside rearview mirror.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the diagnostic procedure.

- [Rearview Camera Replacement](#)
- [Control Module References](#) for ISRVM replacement, setup, and programming