

Component Procedures: Backup Lamp

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Component Procedures: Backup Lamp

Backup Lamp Replacement (Article 10373)

Callout Component Name

Preliminary Procedures Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement . Disconnect the electrical connector bulb socket from the back up lamp.

Preliminary Procedures

- Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .
- Disconnect the electrical connector bulb socket from the back up lamp.

1 Back Up Lamp Screw (Qty: 3) Caution: Refer to Fastener Caution . Tip: Flex the top of the rear bumper energy absorber in order to access the lower back up lamp screws. Tighten 2.5 Nm (22 lb in)

2.5 Nm (22 lb in)

2 Back Up Lamp

Tail Lamp Replacement - Inboard (Article 10419)

Callout Component Name

Preliminary Procedures Remove the tail lamp filler closeout panel. Refer to Tail Lamp Closeout Filler Replacement . Remove the tail lamp bezel. Refer to Tail Lamp Bezel Replacement . Disconnect the bulb socket from the tail lamp. Remove the three tail lamp nuts. Release the three locating tabs securing the tail lamp to the rear bumper fascia pocket. Push the tail lamp assembly outward from the rear bumper fascia.

Preliminary Procedures

- Remove the tail lamp filler closeout panel. Refer to Tail Lamp Closeout Filler Replacement .
- Remove the tail lamp bezel. Refer to Tail Lamp Bezel Replacement .
- Disconnect the bulb socket from the tail lamp.
- Remove the three tail lamp nuts.
- Release the three locating tabs securing the tail lamp to the rear bumper fascia pocket.
- Push the tail lamp assembly outward from the rear bumper fascia.

1 Tail Lamp Inboard Nut (Qty: 3) Caution: Refer to Fastener Caution . Tighten 2.5 Nm (22 lb in)

2.5 Nm (22 lb in)

2 Tail Lamp Bulb Socket Warning: Refer to Halogen Bulb Warning .

3 Tail Lamp Assembly Inboard

Tail Lamp Replacement - Outboard (Article 10423)

Callout Component Name

Preliminary Procedures Remove the tail lamp filler closeout panel. Refer to Tail Lamp Closeout Filler Replacement . Remove the tail lamp bezel. Refer to Tail Lamp Bezel Replacement . Disconnect the bulb socket from the tail lamp. Remove the three tail lamp nuts. Release the three locating tabs securing the tail lamp to the rear bumper fascia pocket. Push the tail lamp assembly outward from the rear bumper fascia.

Preliminary Procedures

- Remove the tail lamp filler closeout panel. Refer to Tail Lamp Closeout Filler Replacement .
- Remove the tail lamp bezel. Refer to Tail Lamp Bezel Replacement .
- Disconnect the bulb socket from the tail lamp.
- Remove the three tail lamp nuts.
- Release the three locating tabs securing the tail lamp to the rear bumper fascia pocket.
- Push the tail lamp assembly outward from the rear bumper fascia.

1 Tail Lamp Outboard Nut (Qty: 3) Caution: Refer to Fastener Caution . Tighten Tighten the nuts to 2.5 Nm (22 lb in)

Tighten the nuts to 2.5 Nm (22 lb in)

2 Tail Lamp Bulb Socket Warning: Refer to Halogen Bulb Warning .

3 Tail Lamp Assembly Outboard

Backup Lamps Malfunction (Automatic Transmission) (Article 10301)

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.

Diagnostic Fault Information

Circuit Short to Ground Open/High Resistance Short to Voltage Signal Performance

F33UA Fuse B+ B2545 01, B2545 04 B2545 01, B2545 04 — —

Backup Lamps Control B2545 02 B2545 01, B2545 04 1 —

Backup Lamp Ground - Left — 1 — —

Backup Lamp Ground - Right — 1 — —

1. Backup Lamps Malfunction

Circuit/System Description

With the engine running and the transmission in the reverse position, the transmission control module (TCM) sends a serial data message to the body control module (BCM). The message indicates that the gear selector is in the reverse position. The BCM applies battery voltage to the backup lamps control circuit illuminating the backup lamps. Once the driver moves the gear selector out of the reverse position, a message is sent by the TCM via serial data requesting the BCM to remove battery voltage from the backup lamps control circuit. The engine must be running for the backup lamps to operate.

Reference Information

Schematic Reference

Exterior Lights Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Exterior Lighting Systems Description and Operation

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Testing

- Ignition OFF, disconnect the X5 harness connector at the K9 body control module, ignition ON.
- Verify a test lamp illuminates between the B+ circuit terminal 4 and ground.
- If the test lamp does not illuminate and the circuit fuse is good
- Ignition OFF, disconnect the X2 harness connector at the X50A fuse block – underhood.
- Test for less than 2 Ω in the B+ circuit end to end.
- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , verify the fuse is not open and there is voltage at the fuse.
- If the test lamp does not illuminate and the circuit fuse is open
- Test for infinite resistance between the B+ circuit and ground.
- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance, replace the K9 body control module.
- If the test lamp illuminates
- Ignition OFF, connect the X5 harness connector at the K9 body control module.
- Ignition OFF, exterior lamps OFF, disconnect the harness connector at the appropriate E5 backup lamp.
- Test for less than 5 Ω between the ground circuit terminal 2 and ground.
- If 5 Ω or greater
- Ignition OFF.
- Test for less than 2 Ω in the ground circuit end to end.
- If less than 2 Ω , repair the open/high resistance in the ground connection.
- If less than 5 Ω
- Connect a test lamp between the control circuit terminal 1 and ground, ignition ON.
- Verify the test lamp turns ON and OFF when commanding the Backup Lamps ON and OFF with a scan tool.
- If the test lamp is always OFF
- Ignition OFF, disconnect the X7 harness connector at the K9 body control module.
- Test for infinite resistance between the control circuit and ground.
- If infinite resistance
- Test for less than 2 Ω in the control circuit end to end.
- If less than 2 Ω , replace the K9 body control module.
- If the test lamp is always ON
- Ignition OFF, disconnect the X7 harness connector at the K9 body control module, ignition ON.
- Test for less than 1 V between the control circuit terminal and ground.
- If 1 V or greater, repair the short to voltage on the circuit.
- If less than 1 V, replace the K9 body control module.
- If the test lamp turns ON and OFF

- Test or replace the appropriate E5 backup lamp.
- Repair Instructions
- Perform the Diagnostic Repair Verification after completing the repair.
- Backup Lamp Replacement
- Control Module References for BCM replacement, programming, and setup

Backup Lamps Malfunction (Manual Transmission) (Article 10303)

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.

Diagnostic Fault Information

Circuit Short to Ground Open/High Resistance Short to Voltage Signal Performance

F33UA Fuse B+ B2545 01, B2545 04 B2545 01, B2545 04 — —

Backup Lamp Switch Signal 1 1 1 —

Backup Lamp s Control B2545 02 B2545 01, B2545 04 1 —

Backup Lamp Switch Ground — 1 — —

Backup Lamp Ground - Left — 1 — —

Backup Lamp Ground - Right — 1 — —

1. Backup Lamps Malfunction

Circuit/System Description

The engine control module (ECM) provides a signal circuit to the backup lamp switch which is permanently grounded. With the engine running and the transmission in the reverse position, the backup lamp switch signal circuit is pulled low and the ECM responds by sending a serial data message to the body control module (BCM). The message indicates that the gear selector is in the reverse position. The BCM applies battery voltage to the backup lamps control circuit illuminating the backup lamps. Once the driver moves the gear selector out of the reverse position, a message is sent by the ECM via serial data requesting the BCM to remove battery voltage from the backup lamps control circuit. The engine must be running for the backup lamps to operate.

Reference Information

Schematic Reference

Exterior Lights Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Exterior Lighting Systems Description and Operation

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

- Engine ON.
- Verify the scan tool Reverse Position Switch parameter changes between ON and OFF while shifting the vehicle between the neutral and reverse gears.
- If the parameter does not change Refer to Backup Lamp Switch Malfunction.
- If the parameter changes
- Verify the backup lamps turn ON and OFF when commanding the Backup Lamps ON and OFF with a scan tool.
- If the backup lamps do not turn ON and OFF Refer to Backup Lamps Malfunction.
- If the backup lamps turn ON and OFF
- All OK.

Circuit/System Testing

Backup Lamp Switch Malfunction

- Ignition OFF, exterior lamps OFF, all doors closed, disconnect the harness connector at the B16 backup lamp switch. It may take up to 2 minutes for all vehicle systems to power down.
- Test for less than 5 Ω between the appropriate ground circuit terminal listed below and ground.
- Terminal B – with M10
- Terminal 2 – with MV5
- If 5 Ω or greater

- Ignition OFF.
- Test for less than 2 Ω in the ground circuit end to end.
- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , repair the open/high resistance in the ground connection.
- If less than 5 Ω
- Ignition ON.
- Verify the scan tool Reverse Position Switch parameter is Off.
- If not Off
- Ignition OFF, disconnect the appropriate harness connector listed below at the K20 engine control module.
- X1 – with M10
- X2 – with MV5
- Test for infinite resistance between the appropriate signal circuit terminal listed below and ground.
- Terminal A – with M10
- Terminal 1 – with MV5
- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance, replace the K20 engine control module.
- If Off
- Install a 3 A fused jumper wire between the appropriate signal circuit terminal listed below and ground.
- Verify the scan tool Reverse Position Switch parameter is On.
- If not On
- Test for less than 1 V between the appropriate signal circuit terminal listed below and ground.
- If 1 V or greater, repair the short to voltage on the circuit.
- If less than 1 V
- Test for less than 2 Ω in the signal circuit end to end.
- If less than 2 Ω , replace the K20 engine control module.
- If On
- Test or replace the B16 backup lamp switch.

Backup Lamps Malfunction

- Ignition OFF, disconnect the X5 harness connector at the K9 body control module, ignition ON.
- Verify a test lamp illuminates between the B+ circuit terminal 4 and ground.
- If the test lamp does not illuminate and the circuit fuse is good
- Ignition OFF, disconnect the X2 harness connector at the X50A fuse block – underhood.
- Test for less than 2 Ω in the B+ circuit end to end.
- If less than 2 Ω , verify the fuse is not open and there is voltage at the fuse.
- If the test lamp does not illuminate and the circuit fuse is open
- Test for infinite resistance between the B+ circuit and ground.
- If infinite resistance, replace the K9 body control module.
- If the test lamp illuminates
- Ignition OFF, connect the X5 harness connector at the K9 body control module.
- Ignition OFF, exterior lamps OFF, disconnect the harness connector at the appropriate E5 backup lamp.
- Test for less than 5 Ω between the ground circuit terminal 2 and ground.
- Connect a test lamp between the control circuit terminal 1 and ground, ignition ON.
- Verify the test lamp turns ON and OFF when commanding the Backup Lamps ON and OFF with a scan tool.
- If the test lamp is always OFF
- Ignition OFF, disconnect the X7 harness connector at the K9 body control module.
- Test for infinite resistance between the control circuit and ground.
- If infinite resistance
- Test for less than 2 Ω in the control circuit end to end.
- If less than 2 Ω , replace the K9 body control module.
- If the test lamp is always ON
- Ignition OFF, disconnect the X7 harness connector at the K9 body control module, ignition ON.
- Test for less than 1 V between the control circuit terminal and ground.
- If less than 1 V, replace the K9 body control module.
- If the test lamp turns ON and OFF
- Test or replace the appropriate E5 backup lamp.

Repair Instructions

Perform the Diagnostic Repair Verification after completing the repair.

- Backup Lamp Replacement
- Backup Lamp Switch Replacement
- Control Module References for BCM or ECM replacement, programming, and setup