

# **Component Procedures: Daytime Running Lamp**

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# Component Procedures: Daytime Running Lamp

## Parts and Labor (itype\_189)

### Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Bulbs > Exterior Bulbs, R&R > Daytime Lamp > ?	C	0.9	0.0
Remove & Replace	Bulbs > Exterior Bulbs, R&R > Daytime Lamp > ?	C	0.9	0.0
Remove & Replace	Bulbs > Exterior Bulbs, R&R > Daytime Lamp > ?	C	0.5	0.0
Remove & Replace	Bulbs > Exterior Bulbs, R&R > Daytime Lamp > ?	C	0.3	0.0

### Daytime Running Lamp Bulb Replacement (RS) (Article 10380)

Callout Component Name

Preliminary Procedure Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .

Preliminary Procedure

Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .

1 Forward Lamp Harness Connector Tip: Disconnect the forward lamp harness connector from the daytime running lamp bulb socket.

2 Daytime Running Lamp Bulb Warning: Refer to Halogen Bulb Warning . Tip: Rotate the bulb socket counterclockwise and remove from the ( DRL ) lamp projector.

### Daytime Running Lamp Bulb Replacement (SS) (Article 10381)

Callout Component Name

Preliminary Procedure Open and support the hood assembly in order to reach and remove the headlamp bulb accessory covers and bulb sockets.

Preliminary Procedure

Open and support the hood assembly in order to reach and remove the headlamp bulb accessory covers and bulb sockets.

1 Headlamp Bulb Accessory Cover Tip: Rotate the cover a quarter turn counter-clockwise and remove from the headlamp assembly .

2 Daytime Running Lamp Bulb Warning: Refer to Halogen Bulb Warning . Procedure Disconnect the electrical connector from the bulb socket. Rotate the bulb socket counterclockwise and remove from the headlamp assembly.

Procedure

- Disconnect the electrical connector from the bulb socket.

- Rotate the bulb socket counterclockwise and remove from the headlamp assembly.

### Daytime Running Lamp Bulb Replacement (ZL1) (Article 10382)

Callout Component Name

Preliminary Procedure Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .

Preliminary Procedure

Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .

1 Daytime Running Lamp Bulb Warning: Refer to Halogen Bulb Warning . Procedure Disconnect electrical connector. Rotate the daytime running lamp bulb counterclockwise to remove from the daytime running lamp.

Procedure

- Disconnect electrical connector.

- Rotate the daytime running lamp bulb counterclockwise to remove from the daytime running lamp.

### Daytime Running Lamp Replacement (RS) (Article 10383)

Callout Component Name

Preliminary Procedures Remove the front wheel liner. Refer to Front Wheelhouse Liner Replacement . Disconnect the electrical connector from the daytime running lamp bulb socket. Remove the fog lamp bezel. Refer to Front Fog Lamp Bezel Replacement .

Preliminary Procedures

- Remove the front wheel liner. Refer to Front Wheelhouse Liner Replacement .

- Disconnect the electrical connector from the daytime running lamp bulb socket.

- Remove the fog lamp bezel. Refer to Front Fog Lamp Bezel Replacement .

1 Daytime Running Lamp Assembly Procedure Using a 10 mm, six point socket, push outward and release each of the daytime running lamp tabs from the front bumper fascia opening. Position and press the lamp assembly back

into the front bumper fascia opening until all three lamp assembly tabs are secure to the front bumper fascia.

#### Procedure

- Using a 10 mm, six point socket, push outward and release each of the daytime running lamp tabs from the front bumper fascia opening.
- Position and press the lamp assembly back into the front bumper fascia opening until all three lamp assembly tabs are secure to the front bumper fascia.

### **Daytime Running Lamp Replacement (ZL1) (Article 10384)**

#### Callout Component Name

Preliminary Procedures Remove the front wheel liner. Refer to Front Wheelhouse Liner Replacement . Remove the fog lamp bezel. Refer to Front Fog Lamp Bezel Replacement .

#### Preliminary Procedures

- Remove the front wheel liner. Refer to Front Wheelhouse Liner Replacement .
- Remove the fog lamp bezel. Refer to Front Fog Lamp Bezel Replacement .

1 Daytime Running Lamp Procedure Disconnect the electrical connector from the daytime running lamp bulb socket. Using a 10 mm, six point socket, push forward and release each of the daytime running lamp tabs from the front bumper fascia opening. Position and press the daytime running lamp back into the front bumper fascia opening until all three tabs are secured to the front bumper fascia.

#### Procedure

- Disconnect the electrical connector from the daytime running lamp bulb socket.
- Using a 10 mm, six point socket, push forward and release each of the daytime running lamp tabs from the front bumper fascia opening.
- Position and press the daytime running lamp back into the front bumper fascia opening until all three tabs are secured to the front bumper fascia.

### **Daytime Running Lamps Malfunction (Article 10307)**

#### 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

Ambient Light Sensor Signal B2645 03 B2645 07 B2645 07 —

Daytime Running Lamp Control - Left (T4F) B2600 02 B2600 04 B2600 01 —

Daytime Running Lamp Control - Right (T4F) B2605 02 B2605 04 B2605 01 —

Daytime Running Lamp Control (T4A) 1 1 1 —

Ambient Light Sensor Ground — B2645 07 1 —

Daytime Running Lamp Ground - Left (T4F) — 1 — —

Daytime Running Lamp Ground - Right (T4F) — 1 — —

Daytime Running Lamp Ground (T4A) — 1 — —

#### 1. Daytime Running Lamps Malfunction

##### Circuit/System Description

##### Daytime Running Lamps (T4A)

The ambient light sensor is used to monitor outside lighting conditions. The ambient light sensor provides a voltage signal that will vary between 0.2 and 4.9 V depending on outside lighting conditions. The body control module (BCM) provides a 5 V reference signal to the ambient light sensor which is permanently grounded. The BCM monitors the ambient light sensor signal circuit to determine if outside lighting conditions are correct for either daytime running lights ( DRL ) or automatic headlamp system control when the headlamp switch is in the AUTO position. In daylight conditions the BCM will command the DRL's ON by applying voltage to the DRL control circuit illuminating the DRL's. Any function or condition that turns on the headlamps will cancel DRL operation.

##### Daytime Running Lamps (T4F)

The ambient light sensor is used to monitor outside lighting conditions. The ambient light sensor provides a voltage signal that will vary between 0.2 and 4.9 V depending on outside lighting conditions. The body control module (BCM) provides a 5 V reference signal to the ambient light sensor which is permanently grounded. The BCM monitors the ambient light sensor signal circuit to determine if outside lighting conditions are correct for either daytime running lights (DRL) or automatic headlamp system control when the headlamp switch is in the AUTO position. In daylight conditions, the BCM will command the DRLs ON by applying a pulse width modulated (PWM) voltage to the left and right DRL control circuits illuminating the DRLs. Any function or

condition that turns on the headlamps will cancel DRL operation.

Reference Information

Schematic Reference

Headlights/Daytime Running Lights (DRL) 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

Daytime Running Lamp Malfunction – with T4F

- Ignition OFF, exterior lamps OFF, disconnect the harness connector at the appropriate E4 daytime running lamp.
- Test for less than 5  $\Omega$  between the ground circuit terminal 2 and ground.
- If 5  $\Omega$  or greater
- Ignition OFF.
- Test for less than 2  $\Omega$  in the ground circuit end to end.
- If 2  $\Omega$  or greater, repair the open/high resistance in the circuit.
- If less than 2  $\Omega$ , repair the open/high resistance in the ground connection.
- If less than 5  $\Omega$
- 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 Dedicated Daytime Running Lamp Command ON and OFF with a scan tool.
- If the test lamp is always OFF
- Ignition OFF, disconnect the X4 harness connector at the K9 body control module.
- Test for infinite resistance between the control circuit and ground.
- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance
- Test for less than 2  $\Omega$  in the control circuit end to end.
- If less than 2  $\Omega$ , replace the K9 body control module.
- If the test lamp is always ON
- Ignition OFF, disconnect the X4 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 E4 daytime running lamp.

Daytime Running Lamp Malfunction – with T4A

- Ignition OFF, disconnect the X2 harness connector at the X50A fuse block – underhood.
- Connect a test lamp between the control circuit terminal 19 and B+, ignition ON.
- Verify the test lamp turns ON and OFF when commanding the Front Fog Lamps ON and OFF with a scan tool.
- Ignition OFF, disconnect the X5 harness connector at the K9 body control module, ignition ON.
- If less than 1 V
- Test for infinite resistance between the control circuit terminal and ground.
- If infinite resistance, replace the K9 body control module.
- Ignition OFF, connect the X2 harness connector at the X50A fuse block – underhood.
- Ignition OFF, exterior lamps OFF, disconnect the harness connector at the E4C daytime running lamp – left.
- Verify the test lamp turns ON and OFF when commanding the Front Fog Lamps ON and OFF with a scan tool.
- Ignition OFF, disconnect the X1 harness connector at the X50A fuse block – underhood.
- If less than 2  $\Omega$ , replace the X50A fuse block – underhood.
- Ignition OFF, disconnect the X1 harness connector at the X50A fuse block – underhood, ignition ON.
- Test for less than 1 V between the control circuit and ground.
- If less than 1 V, replace the X50A fuse block – underhood.

Repair Instructions

Perform the Diagnostic Repair Verification after completing the repair.

- Daytime Running Lamp Replacement
- Daytime Running Lamp Bulb Replacement
- Control Module References for BCM replacement, programming, and setup