



# LA31

# Switches And Controls

**Uniform  
Procedures For  
Collision Repair  
UPCR**

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v.4.0



## 1. Description

This procedure describes methods for diagnosis, replacement, and inspection of lamp-control switches, relays, and timer modules.



## 2. Purpose

The purpose of this procedure is to provide industry-accepted requirements for performing high-quality repair of lamp-control devices. This procedure is intended for use by professionals who are qualified through training and experience.



## 3. Referenced Documents

The following documents are considered part of this procedure by reference.

### 3.1 Procedures

- EL01 Wire Repair
- EL11 Troubleshooting
- HM01 Hazardous Materials
- LA01 Front Driving Lamps
- LA11 Tail, Parking, And Back-Up
- LA21 Stop, Turn, And Cornering
- PS01 Personnel Safety

### 3.2 Other Information

- Equipment-specific information
- Vehicle-specific repair information



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## 4. Equipment And Material Requirements

### 4.1 Electronic Equipment

Use electronic testing equipment as described in **EL11**.



## 5. Damage Analysis

### 5.1 General Damage

Inspect lamp switch and control circuits for these types of damage:

- visible damage
- corrosion
- blown fuse
- cut, pinched, or corroded wires
- loose or corroded grounds or connectors
- improper previous repairs

If electrical systems do not function correctly, plan to troubleshoot the circuit to isolate the cause. See **EL11**.

Determine the parts that will be replaced and the wiring that will be repaired. See **EL01** for wire repair procedures. If the ignition lock cylinder will be replaced, it may be necessary to have the cylinder coded to the original keys or new keys made for the vehicle. Verify the availability of replacement parts.



## 6. Personnel Safety

### 6.1 General Safety

General safety information is in **PS01**.

### 6.2 Electrical Testing Safety

Electrical testing safety information is in **EL11**.



## 7. Environmental Safety

### 7.1 Transmission Fluid

If replacing a transmission-mounted park-neutral switch, properly clean and dispose of any spilled transmission fluid. Hazardous material safety information is in **HM01**.



## 8. Vehicle Protection

### 8.1 Electrical Parts

To protect electrical parts from damage:

- Protect connectors, and wiring from dirt, heat, static electricity, and moisture.
- Loosen or remove any wiring harnesses or electrical parts that could be damaged during the repair process.



## 9. Repair Procedure

Troubleshoot the lamp circuits to isolate faulty electrical parts. See **EL11**. Switches may require partial removal for some electrical tests.

If a switch requires replacement, see **9.1** for ignition switch replacement, **9.2** for headlamp or hazard warning switch replacement, **9.3** for turn-signal or multi-function switch replacement, **9.4** for stop-lamp switch replacement, or **9.5** for park-neutral switch replacement.

### 9.1 Ignition Switch Replacement

**Note:** If the vehicle is equipped with an ignition immobilizer system, follow the vehicle maker's recommendations.

To replace an ignition switch installed in the instrument panel:

- 1. Disconnect and isolate the negative battery cable and disarm the passive restraint system. Follow the vehicle maker's recommendations for recording electronic memories.
- 2. Remove the trim or kick panels, if required for access to the electrical connectors.
- 3. Disconnect the ignition switch connector from the floor or bulkhead wiring harness.
- 4. Remove any fasteners holding the ignition switch in position. Plan to replace any damaged or one-time fasteners with the same type, grade, and size.
- 5. Remove the ignition switch.
- 6. Install the replacement ignition switch, duplicating the original mounting method. Torque all fasteners to the vehicle maker's recommendations.
- 7. Reconnect any electrical connectors.
- 8. Reconnect the battery.
- 9. Reinstall the trim or kick panels removed for access.
- 10. Inspect the ignition switch operation for all of its functions. See **11.1**.

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## 9. Repair Procedure (cont'd)

To replace an ignition switch installed in the steering column:

1. Disconnect and isolate the negative battery cable and disarm the passive restraint system. Follow the vehicle maker's recommendations for recording electronic memories.
2. Disconnect the driver and passenger airbag connectors. Follow the vehicle maker's recommendations.
3. Tilt the column to the center position, if required.
4. Remove the steering column cover panel.
5. Remove the trim panel, if required for access to the ignition switch.
6. Turn the ignition lock cylinder to LOCK and remove the key. Note: In some cases it may be necessary to remove the lock cylinder. Follow the vehicle maker's recommendations.
7. Disconnect the steering column bulkhead connector from the vehicle wiring harness.
8. Disconnect the ignition switch actuator rod or cable, if required.
9. Disconnect or remove other connectors, parts, or fasteners to allow removal of the ignition switch assembly.
10. Remove the ignition switch assembly.
11. Install the replacement ignition switch assembly, duplicating the original mounting method. Torque all fasteners to the vehicle maker's recommendations.
12. Reconnect the ignition switch actuator rod or cable, if required.
13. Reinstall the lock cylinder, if required. Plan to replace any one-time fasteners with the same type, grade, and size.
14. Reconnect all electrical connectors.
15. Reinstall parts that were removed for access.
16. Reconnect the battery.
17. Inspect the ignition switch operation for all of its functions. See **11.1**. Adjust the switch, or actuator rod or cable, if required.
18. Reinstall the steering column cover panel.
19. Reset electronic memories and re-activate the passive restraint system. Follow the vehicle maker's recommendations.

### 9.2 Headlamp Or Hazard Warning Switch Replacement

To replace a headlamp or hazard warning switch installed in the instrument panel:

1. Disconnect and isolate the negative battery cable. Follow the vehicle maker's recommendations for recording electronic memories.
2. Position the steering wheel in the full-down position, if required.
3. Position the column shift lever to the lowest position, if required.
4. Remove the switch knob.
5. Remove trim panels, if required for access to the connectors or switch fasteners.
6. Disconnect the switch connector.
7. Remove the headlamp or hazard warning switch.

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## 9. Repair Procedure (cont'd)

- 8. Install the replacement headlamp or hazard warning switch, duplicating the original mounting method. Torque all fasteners to the vehicle maker's recommendations.
- 9. Reconnect all electrical connectors.
- 10. Reinstall parts that were removed for access.
- 11. Reinstall the switch knob.
- 12. Reconnect the battery.
- 13. Reset electronic memories. Follow the vehicle maker's recommendations.
- 14. Inspect the lamp switch operation for all of its functions. See **11.2**. Inspect the hazard warning switch operation. See **11.3**.

To replace a headlamp or hazard warning switch installed in the steering column:

- 1. Disconnect and isolate the negative battery cable and disarm the passive restraint system. Follow the vehicle maker's recommendations for recording electronic memories.
- 2. Disconnect the driver and passenger airbag connectors. Follow the vehicle maker's recommendations.
- 3. Tilt the column to the center position, if required.
- 4. Remove the steering column cover panel.
- 5. Remove the trim panel, if required for access to the headlamp or hazard warning switch.
- 6. Disconnect the electrical connectors from the switch.
- 7. Remove the headlamp or hazard warning switch.
- 8. Install the replacement switch, duplicating the original mounting method. Torque all fasteners to the vehicle maker's recommendations.
- 9. Reconnect all electrical connectors.
- 10. Reinstall parts that were removed for access.
- 11. Reinstall the steering column cover panel.
- 12. Reconnect the battery.
- 13. Reset electronic memories and re-activate the passive restraint system. Follow the vehicle maker's recommendations.
- 14. Inspect the headlamp switch operation for all of its functions. See **11.2**. Inspect the hazard warning switch operation. See **11.3**.

### 9.3 Turn-Signal Or Multi-Function Switch Replacement

To replace a turn-signal or multi-function switch:

- 1. Disconnect and isolate the negative battery cable and disarm the passive restraint system. Follow the vehicle maker's recommendations for recording electronic memories.
- 2. Disconnect the driver and passenger airbag connectors. Follow the vehicle maker's recommendations.
- 3. Tilt the column to the center position, if required.

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## 9. Repair Procedure (cont'd)

- 4. Remove the steering column cover panel.
- 5. Remove the trim panel, if required for access to the turn-signal or multi-function switch.
- 6. Disconnect the electrical connectors from the switch.
- 7. Remove the turn-signal or multi-function switch.
- 8. Install the replacement switch, duplicating the original mounting method. Torque all fasteners to the vehicle maker's recommendations.
- 9. Reconnect all electrical connectors.
- 10. Reinstall parts that were removed for access.
- 11. Reinstall the steering column cover panel.
- 12. Reconnect the battery.
- 13. Reset electronic memories and re-activate the passive restraint system. Follow the vehicle maker's recommendations.
- 14. Inspect the turn-signal or multi-function switch operation for all of its functions. See **11.4**.

### 9.4 Stop-Lamp Switch Replacement

To replace a stop-lamp switch:

- 1. Disconnect the connector from the stop-lamp switch.
- 2. Remove fasteners holding the stop-lamp switch to the brake pedal.
- 3. Remove the stop-lamp switch.
- 4. Install the replacement stop-lamp switch, duplicating the original mounting method. Torque all fasteners to the vehicle maker's recommendations.
- 5. Reconnect the electrical connector. Make sure the wiring harness is long enough for the full stroke of the brake pedal. Re-route or replace the wiring harness, if required.
- 6. Inspect the stop-lamp switch operation for all of its functions. See **11.5**.

### 9.5 Park-Neutral or Clutch Safety Switch Replacement

Determine the location of the park-neutral or clutch safety switch. The switch may be found in either of these locations:

- behind or beneath the gear selector lever
- on the transmission housing

To replace a park-neutral or clutch safety switch:

- 1. Remove trim and other parts required for access and to prevent damage.
- 2. Disconnect and protect the park-neutral or clutch safety switch electrical connector.
- 3. Remove the fasteners or clips holding the switch assembly to the vehicle.
- 4. Remove the park-neutral or clutch safety switch from the vehicle. Replace the switch washer or gasket, if required.
- 5. Clean the switch mounting location.

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## 9. Repair Procedure (cont'd)

- 6. Install the replacement park-neutral or clutch safety switch, duplicating the original mounting method. Torque the fasteners to the vehicle maker's recommendations.
- 7. Reconnect all electrical connectors.
- 8. Reinstall any parts that were removed for access.
- 9. Inspect the operation of the park-neutral or clutch safety switch. See **11.6**.



## 10. Use Of Recycled (Salvage) Parts

### 10.1 Salvage Part Requirements

Do not install salvage electrical parts having any of these defects:

- inoperable
- unrepairable damage
- corroded terminals
- improper previous repairs
- missing mounting locations



## 11. Inspection And Testing

### 11.1 Inspection Of A Replaced Ignition Switch

After installation, inspect the ignition switch for these conditions:

- proper engine starting, only in PARK or NEUTRAL or with the clutch depressed, using the proper key
- proper switch mounting
- proper installation of all fasteners
- proper operation of the ACCESSORY position
- proper operation of the daylight running lamps
- proper operation of the turn-signal and cornering lamps
- proper operation of the back-up lamps
- proper operation of all warning lamps
- proper key removal, only in the OFF position

Correct any defects.

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## 11. Inspection And Testing (cont'd)

### 11.2 Inspection Of A Replaced Headlamp Switch

After installation, inspect the headlamp switch for these conditions:

- proper operation of the headlamps, tail lamps, and parking lamps
- proper switch mounting
- proper installation of all fasteners
- proper operation of the high-beam switch and indicator
- proper operation of the instrument panel illumination
- proper operation of the dome or courtesy lamps
- proper operation of any auto-lamp and auto-dim functions

Correct any defects.

### 11.3 Inspection Of A Replaced Hazard Warning Switch

After installation, inspect the hazard warning switch for these conditions:

- proper flashing of all turn-signal lamps
- proper switch mounting
- proper installation of all fasteners
- proper operation of the instrument panel indicator lamp

### 11.4 Inspection Of A Replaced Turn-Signal Or Multi-Function Switch

After installation, inspect the turn-signal or multi-function switch for these conditions:

- proper operation of the stop lamps and turn-signal lamps
- proper switch mounting
- proper installation of all fasteners
- proper operation of the self-cancellation function
- proper operation of the high-beam switch and indicator
- proper operation of the LEFT/RIGHT indicators
- proper operation of the hazard warning lamps

Correct any defects.

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## 11. Inspection And Testing (cont'd)

### 11.5 Inspection Of A Replaced Stop-Lamp Switch

After installation, inspect the stop lamp switch for these conditions:

- proper operation of the stop lamps and turn-signal lamps
- proper switch mounting
- proper installation of all fasteners
- wiring long enough for the full stroke of the brake pedal

Correct any defects.

### 11.6 Inspection Of A Replaced Park-Neutral Switch

After installation, inspect the park-neutral or clutch safety switch for these conditions:

- no transmission fluid leaks
- proper operation of the back-up lamps when the transmission is shifted into and out of REVERSE from NEUTRAL and PARK