09–15 SUNROOF

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LOCATION INDEX

1 Sunroof unit
(See 09–15–5 SUNROOF UNIT REMOVAL/INSTALLATION)
(See 09–15–8 SUNROOF UNIT ASSEMBLY)
(See 09–15–5 SUNROOF UNIT DISASSEMBLY)

2 Sunroof motor
(See 09–15–5 SUNROOF UNIT REMOVAL/INSTALLATION)

3 Sunroof relay
(See 09–15–14 SUNROOF RELAY REMOVAL/INSTALLATION)
(See 09–15–16 SUNROOF RELAY INSPECTION)

4 Sunroof switch
(See 09–15–18 SUNROOF SWITCH INSPECTION)
## DEFLECTOR REMOVAL/INSTALLATION

4SD

1. Fully open the glass panel.
2. To remove the stopper, remove the sunroof unit. (See 09–15–5 SUNROOF UNIT REMOVAL/INSTALLATION.)
3. Remove in the order indicated in the table.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Deflector</td>
</tr>
<tr>
<td></td>
<td>(See 09–15–2 Deflector Removal Note)</td>
</tr>
<tr>
<td>2</td>
<td>Stopper</td>
</tr>
</tbody>
</table>

4. Install in the reverse order of removal.

### Deflector Removal Note

1. Remove the deflector using a tape-wrapped screwdriver.

### 5HB

1. Fully open the glass panel.
2. Push the deflector inside (1) and pull it up (2) to release the stopper.
3. Slide the deflector to disengage from the hook. (3)
4. Remove the deflector.
5. Install in the reverse order of removal.
GLASS PANEL ADJUSTMENT

1. Fully close the glass panel.
2. Measure the gap and height between the glass panel and body.
   • If not as specified, loosen the glass panel installation screws and reposition the glass panel.

   Clearance
   a: 0.2—2.2 mm (0.008—0.086 in)
   b: 0 mm (0 in)

3. Tighten the installation screws.

4. Insert a prepaid card between the weatherstrip and the body of the vehicle. Verify that the sunroof is shut tightly (there is resistance when the prepaid card is moved).
   • If the sunroof is not shut tightly, readjust by performing Steps 3 and 4.

GLASS PANEL REMOVAL/INSTALLATION

1. Fully close the glass panel.
2. Fully open the sunshade.
3. Remove the screws, and then remove the glass panel.
4. Peel the weatherstrip off the glass panel.
5. Install in the reverse order of removal.
6. Adjust the glass panel. (See 09–15–3 GLASS PANEL ADJUSTMENT.)
SUNROOF

FRONT DRAIN HOSE REMOVAL

1. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
2. Disconnect the front drain hose from the sunroof frame.
3. Remove the front drain hose from the clips.
4. Pull the front drain hose into the room side.
5. Remove the front drain hose.

FRONT DRAIN HOSE INSTALLATION

Caution
• If the front drain hose is pinched or bent anywhere, the water in the hose may not discharge and enter the inside of the vehicle. During and after installation of the trims and the headliner, always make sure there is no interference with the front drain hose. Fix any problem if found.

1. Apply soapy water to the front drain hose inserting area.
2. Insert one end of the front drain hose into the sunroof frame.
3. Install the front drain hose to the clips parallel to the pillar and free of slack.
4. Insert the front drain hose joint into the hinge pillar inner hole.
5. Install the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)

REAR DRAIN HOSE REMOVAL

1. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
2. For 4SD, remove the trunk side trim.
3. Disconnect the rear drain hose from the sunroof frame.
4. Remove the rear drain hose from the clips.
5. Pull the rear drain hose into the room side.
6. Remove the rear drain hose.
SUNROOF

REAR DRAIN HOSE INSTALLATION

Caution
• If the rear drain hose is pinched or bent anywhere, the water in the hose may not discharge and enter the inside of the vehicle. During and after installation of the trims and the headliner, always make sure there is no interference with the rear drain hose. Fix any problem if found.

1. Apply soapy water to the rear drain hose inserting area.
2. Insert one end of the rear drain hose into the sunroof frame.
3. Install the rear drain hose to the clips parallel to the pillar and free of slack.
4. Insert the rear drain hose joint into the rear pillar inner hole.
5. Install the trunk side trim. (See 09–17–15 TRUNK SIDE TRIM REMOVAL/INSTALLATION.)
6. Install the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)

SUNROOF UNIT REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
3. Remove the glass panel.
4. Disconnect the front and rear drain hoses from the sunroof frame.
5. Remove the roof harness from the sunroof frame.
6. Remove the bolts and nuts, and then remove the sunroof unit.
7. Install in the reverse order of removal.
8. Adjust the glass panel. (See 09–15–3 GLASS PANEL ADJUSTMENT.)

SUNROOF UNIT DISASSEMBLY

4SD
1. Remove the screws, and then remove the drip rail.
2. Remove the sunshade stopper.
3. Slide the sunshade backward, and remove it from the sunroof frame.

4. Remove the screws, and then remove the rear drip.

5. Slide the drip shoe backward, and remove it from the sunroof frame.
6. Remove the sunroof motor.

7. Remove the stopper screw.
8. Slide the guide backward, and remove it from the sunroof frame.
9. Remove the deflector.
SUNROOF

5HB

1. Bend the hook of the decoration link backward to remove the drip rail.

2. Remove the sunshade stopper.
3. Slide the sunshade backward, and remove it from the sunroof frame.

4. Remove the screw, and then remove the guide stopper.

5. Remove the lock washer using a tape-wrapped screwdriver.
6. Slide the decoration link backward, and remove it from the sunroof frame.
7. Remove the sunroof motor.
8. Slide the guide backward, and remove it from the sunroof frame.

9. Remove the screws.
10. Slide the drive unit forward, and remove it from the sunroof frame.
11. Remove the deflector.
12. Remove the sunroof relay.

**SUNROOF UNIT ASSEMBLY**

4SD
1. Install the deflector.
2. Slide the guide forward, and install it to the sunroof frame.
3. Install the stopper screw.
4. Move the guide by hand until it is tilted up position.
5. Move the link built into the guide by hand until it is aligned with mark A and mark B.
6. Install the sunroof motor.
7. Slide the drip shoe forward, and install it to the sunroof frame.
8. Use IPA (Isopropyl alcohol) to remove any excess repair sealant.

9. Install the screws, and then install the rear drip.

10. Slide the sunshade forward, and install it to the sunroof frame.
11. Install the sunshade stopper.

12. Install the screws, and then install the drip rail.

5HB
1. Install the sunroof relay.
2. Install the deflector.
3. Slide the drive unit backward, and install it to the sunroof frame.
4. Install the screws.

5. Slide the guide forward, and install it to the sunroof frame.
6. Move the guide by hand until it is in the tilted up position.

7. Move the guide by hand until notch comes between mark A and mark B.
8. Install the sunroof motor.
9. Slide the decoration link forward, and install it to the sunroof frame.

10. Install the lock washer.

11. Install the screw, and then install the guide stopper.

09–15–10
SUNROOF

12. Slide the sunshade forward, and install it to the sunroof frame.
13. Install the sunshade stopper.

14. Bend the hook of the decoration link backward to install the drip rail.

SUNROOF MOTOR REMOVAL

1. Disconnect the negative battery cable.
2. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
3. Disconnect the connector.
4. Remove the screws, and then remove the sunroof motor.

SUNROOF MOTOR INSTALLATION

1. Connect the sunroof motor connector.
2. Connect the sunroof switch connector.
3. Connect the negative battery cable.
4. Turn the ignition switch to ON position.
5. Press the CLOSE side of the slide switch until the sunroof motor stops.
6. Disconnect the sunroof switch connector.
7. Install the screws, and then install the sunroof motor.
8. Install the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
SUNROOF MOTOR INSPECTION

4SD Motor

1. Remove the sunroof motor.
2. Apply battery positive voltage to the sunroof motor terminals and inspect the operation of the sunroof motor.
   • If not as specified, replace the sunroof motor.

<table>
<thead>
<tr>
<th>Connection</th>
<th>Motor operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>B+ GND</td>
</tr>
<tr>
<td></td>
<td>Turn left (Slide close/Tilt up)</td>
</tr>
<tr>
<td>GND</td>
<td>B+</td>
</tr>
<tr>
<td></td>
<td>Turn right (Slide open/Tilt down)</td>
</tr>
</tbody>
</table>

Limit Switch

1. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
2. Verify the glass panel position.
3. Disconnect the connector.
4. Inspect for continuity between the sunroof motor terminals using an ohmmeter.
   • If not as specified, replace the sunroof motor.

<table>
<thead>
<tr>
<th>Glass panel position</th>
<th>Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1A 1B 1C 1D 1E 1F GND</td>
</tr>
<tr>
<td>Fully open</td>
<td></td>
</tr>
<tr>
<td>Fully closed</td>
<td></td>
</tr>
<tr>
<td>Fully tilt up</td>
<td></td>
</tr>
</tbody>
</table>
SUNROOF

5HB
Motor
1. Remove the sunroof motor.
2. Apply battery positive voltage to the sunroof motor terminals and inspect the operation of the sunroof motor.
   • If not as specified, replace the sunroof motor.

<table>
<thead>
<tr>
<th>Connection</th>
<th>Motor operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>B+</td>
</tr>
<tr>
<td>1I</td>
<td>GND</td>
</tr>
<tr>
<td>B+</td>
<td>GND</td>
</tr>
<tr>
<td>GND</td>
<td>Turn right (Slide open/Tilt down)</td>
</tr>
</tbody>
</table>

Limit Switch
1. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
2. Verify the glass panel position.
3. Disconnect the connector.
4. Inspect for continuity between the sunroof motor terminals using an ohmmeter.
   • If not as specified, replace the sunroof motor.

<table>
<thead>
<tr>
<th>Glass panel position</th>
<th>Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2B</td>
</tr>
<tr>
<td>Fully open</td>
<td></td>
</tr>
<tr>
<td>Fully closed</td>
<td></td>
</tr>
<tr>
<td>Fully tilted up</td>
<td></td>
</tr>
</tbody>
</table>

09–15
SUNROOF RELAY REMOVAL/INSTALLATION

**Note**
- Sunroof relay is built in the sunroof motor.

**5HB**
1. Disconnect the negative battery cable.
2. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
3. Pull the sunroof relay from the sunroof frame.
4. Disconnect the connector, and remove the sunroof relay.
5. Install in the reverse order of removal.

SLIDING SUNROOF SYSTEM WIRING DIAGRAM
SUNROOF RELAY INSPECTION

1. Remove the headliner. (See 09–17–16 HEADLINER REMOVAL/INSTALLATION.)
2. Connect the sunroof switch connector.
3. Connect the negative battery cable.
4. Measure the voltage at the sunroof relay terminals as indicated below.
5. Disconnect the sunroof relay connector before inspecting for continuity at terminal 1F.
   - If not as specified, inspect the parts listed under “Action” and the related wiring harnesses.
   - If the parts and wiring harnesses are okay but the system still does not work properly, replace the sunroof relay.

### Terminal Voltage List (Reference)

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Signal</th>
<th>Connected to</th>
<th>Test condition</th>
<th>Voltage (V)</th>
<th>Continuity</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>IG2</td>
<td>Sunroof motor</td>
<td>IG SW is at ON position.</td>
<td>B+</td>
<td></td>
<td>• Inspect A/C 15A fuse</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>0</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)</td>
</tr>
<tr>
<td>1B</td>
<td>Tilt up</td>
<td>Sunroof switch</td>
<td>Sunroof is tilting up. (Including position when fully closed)</td>
<td>B+</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>0</td>
<td></td>
<td>• Inspect related harness</td>
</tr>
<tr>
<td>1C</td>
<td>Slide close</td>
<td>Sunroof switch</td>
<td>Sunroof is closing. (Including position when fully closed and open)</td>
<td>B+</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>0</td>
<td></td>
<td>• Inspect related harness</td>
</tr>
<tr>
<td>1D</td>
<td>Slide open</td>
<td>Sunroof switch</td>
<td>Sunroof is fully opening.</td>
<td>0</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>B+</td>
<td></td>
<td>• Inspect related harness</td>
</tr>
<tr>
<td>1E</td>
<td>Tilt down</td>
<td>Sunroof switch</td>
<td>Sunroof is tilting down. (Not including position when fully closed)</td>
<td>B+</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>0</td>
<td></td>
<td>• Inspect related harness</td>
</tr>
<tr>
<td>1F</td>
<td></td>
<td>Sunroof relay ground</td>
<td>GND</td>
<td>Yes</td>
<td></td>
<td>• Inspect related harness</td>
</tr>
<tr>
<td>2A</td>
<td>Slide close/tilt up</td>
<td>Sunroof motor</td>
<td>Sunroof is opening/tilting down.</td>
<td>0</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sunroof is closing/tilting up.</td>
<td>B+</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–12 SUNROOF MOTOR INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>0</td>
<td></td>
<td>• Inspect related harness</td>
</tr>
<tr>
<td>2B</td>
<td>Slide open/tilt down</td>
<td>Sunroof motor</td>
<td>Sunroof is opening/tilting down.</td>
<td>B+</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sunroof is closing/tilting up.</td>
<td>0</td>
<td></td>
<td>• Inspect sunroof switch (See 09–15–12 SUNROOF MOTOR INSPECTION)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>0</td>
<td></td>
<td>• Inspect related harness</td>
</tr>
</tbody>
</table>
### Terminal voltage list (Reference)

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Signal</th>
<th>Connected to</th>
<th>Test condition</th>
<th>Voltage (V)/Continuity</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1A       | Slide close/tilt up | Sunroof motor | Sunroof is opening/tilting down. | 0 | • Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)  
• Inspect sunroof motor (See 09–15–12 SUNROOF MOTOR INSPECTION)  
• Inspect related harness |
|          |        |              | Sunroof is closing/tilting up. | B+ |
|          |        |              | Other | 0 |
| 1B       | Slide close/tilt up | Sunroof motor (Limit switch) | Sunroof is closing/tilting up. | 0 | • Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)  
• Inspect sunroof motor (Limit switch) (See 09–15–12 SUNROOF MOTOR INSPECTION)  
• Inspect related harness |
|          |        |              | Other | B+ |
| 1C       | IG2    | Sunroof switch | IG SW is at ON position. | B+ | • Inspect A/C 15 A fuse  
• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)  
• Inspect related harness |
|          |        |              | Other | 0 |
| 1D       | -      | Not used     | - | - |
| 1F       | IG2    | Sunroof switch | IG SW is at ON position. | B+ | • Inspect A/C 15 A fuse  
• Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)  
• Inspect related harness |
|          |        |              | Other | 0 |
| 1H       | Sunroof relay ground | GND | Under any condition: inspect for continuity to ground. | Yes | • Inspect related harness |
| 1I       | Slide open/tilt down | Sunroof motor | Sunroof is opening/tilting down. | B+ | • Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)  
• Inspect sunroof motor (See 09–15–12 SUNROOF MOTOR INSPECTION)  
• Inspect related harness |
|          |        |              | Sunroof is closing/tilting up. | 0 |
|          |        |              | Other | 0 |
| 1J       | Slide open/tilt down | Sunroof motor (Limit switch) | Sunroof is opening/tilting down. | 0 | • Inspect sunroof switch (See 09–15–18 SUNROOF SWITCH INSPECTION)  
• Inspect sunroof motor (Limit switch) (See 09–15–12 SUNROOF MOTOR INSPECTION)  
• Inspect related harness |
|          |        |              | Other | B+ |
Note

- The sunroof switch is together with the spot light.

1. Disconnect the negative battery cable.
2. Remove the spot light from the headliner. (See 09–18–21 MAP LIGHT REMOVAL/INSTALLATION.)
3. Install in the reverse order of removal.

SUNROOF SWITCH INSPECTION

1. Remove the sunroof switch. (See 09–18–21 MAP LIGHT REMOVAL/INSTALLATION.)
2. Inspect for continuity between the sunroof switch terminals using an ohmmeter.
   - If not as specified, replace the sunroof switch.

<table>
<thead>
<tr>
<th>Switch position</th>
<th>Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slide open</td>
<td>1B 1C 1D 1E 1F 1A 2A</td>
</tr>
<tr>
<td>Slide close</td>
<td></td>
</tr>
<tr>
<td>Tilt up</td>
<td></td>
</tr>
<tr>
<td>Tilt down</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td></td>
</tr>
</tbody>
</table>