Moon Roof Assembly Structure Noise

Service Category  Vehicle Exterior
Section          Exterior Panels/Trim

Market          USA

Applicability

<table>
<thead>
<tr>
<th>YEAR(S)</th>
<th>MODEL(S)</th>
<th>ADDITIONAL INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 – 2015</td>
<td>Avalon, Avalon HV</td>
<td>WMI(s): 4T1</td>
</tr>
<tr>
<td>2012 – 2016</td>
<td>Camry, Camry HV</td>
<td>WMI(s): 4T1, 4T4</td>
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</table>

REVISION NOTICE

November 18, 2015 Rev2:

- Applicability has been updated to include 2014, 2015, and 2016 model year Camry and Camry HV and 2013-2015 Avalon and Avalon HV vehicles.
- The Production Change Information section has been updated.

December 17, 2013 Rev1:

- Applicability has been updated to include 2013 model year Camry and Camry HV vehicles.
- The Production Change Information section has been added.

Any previous printed versions of this bulletin should be discarded.

Introduction

Some 2012 – 2016 model year North American produced (NAP) Camry and Camry HV vehicles and 2013 – 2015 Avalon and Avalon HV vehicles may exhibit a knocking, popping, ticking, or snapping noise from the moon roof area while driving. The repair procedure included in this bulletin has been developed to address this condition.
Moon Roof Assembly Structure Noise

Production Change Information

This bulletin applies to vehicles produced BEFORE the Production Change Effective VINs shown below.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>PLANT</th>
<th>LINE</th>
<th>ENGINE</th>
<th>PRODUCTION CHANGE EFFECTIVE VIN</th>
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<tbody>
<tr>
<td>Camry</td>
<td>TMMK</td>
<td>1</td>
<td>4 Cyl</td>
<td>4T1BF1FK#GU133508</td>
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<tr>
<td></td>
<td></td>
<td>2</td>
<td>V6</td>
<td>4T1BK1FK#GU030194</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 Cyl</td>
<td>4T1BF1FK#GU515061</td>
</tr>
<tr>
<td></td>
<td>SIA</td>
<td>-</td>
<td>V6</td>
<td>4T1BK1FK#GU569888</td>
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<td>HV</td>
<td>4T1BD1FK#GU179126</td>
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<tr>
<td>Avalon</td>
<td>TMMK</td>
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<td>V6</td>
<td>4T1BK1EB#FU185834</td>
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<td>HV</td>
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Warranty Information

<table>
<thead>
<tr>
<th>OP CODE</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
<th>TIME</th>
<th>OFP</th>
<th>T1</th>
<th>T2</th>
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</thead>
<tbody>
<tr>
<td>BD1517</td>
<td>Remove and Reinstall Sliding Roof Housing Sub-Assembly</td>
<td>Camry</td>
<td>4.2</td>
<td>63111-06540</td>
<td>91</td>
<td>57</td>
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<td>BD1518</td>
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<td>Avalon</td>
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<tr>
<td>BD1519</td>
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<td>Avalon HV</td>
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<td>BD1517A</td>
<td></td>
<td>Camry</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>BD1517A</td>
<td>Flex Roof Reinforcements and Install Shims</td>
<td>Camry HV</td>
<td>0.3</td>
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<td>BD1518A</td>
<td></td>
<td>Avalon</td>
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<tr>
<td>BD1519A</td>
<td></td>
<td>Avalon HV</td>
<td></td>
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</tbody>
</table>

APPLICABLE WARRANTY

- This repair is covered under the Toyota Basic Warranty. This warranty is in effect for 36 months or 36,000 miles, whichever occurs first, from the vehicle’s in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

Parts Information

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>PART NAME</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>08231-00801</td>
<td>Interior Noise Kit</td>
<td>1</td>
</tr>
<tr>
<td>63021-06030</td>
<td>Silencer Sub-Assy, Slide Roof (Shim Kit)</td>
<td>1</td>
</tr>
</tbody>
</table>

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Moon Roof Assembly Structure Noise

Repair Procedure

1. Confirm that the noise is coming from the moon roof area.

2. Remove the sliding roof housing.

   Refer to the Technical Information System (TIS), applicable model and model year Repair Manual:

   • **2012 / 2013 / 2014 / 2015 / 2016 Camry:**

   • **2012 / 2013 / 2014 / 2015 / 2016 Camry HV:**

   • **2013 / 2014 / 2015 / Avalon:**

   • **2013 / 2014 / 2015 / Avalon HV:**

3. Flex and manipulate the roof structure to separate the coating between the roof reinforcements. Continue manipulating the roof structure until the crackling noise goes away. Refer to the video for a demonstration of this procedure.

   **Demonstration of Flexing Roof Structure**

4. Clean out any remaining debris from the roof reinforcements with an air hose blow nozzle.

5. Install the shims in the following locations.
Repair Procedure (Continued)

Figure 1.

<table>
<thead>
<tr>
<th>1–9</th>
<th>Shim Installation Locations</th>
</tr>
</thead>
</table>

A. At positions 1 – 7 (shown in Figure 1), insert the 7 shims between the spot welds.

Shims 1 – 7: Smaller Rectangle, 12.7 x 43.2 mm (0.5 x 1.7 in.)

**NOTE**
At positions 1 – 2 and 5 – 6, two shims are positioned side by side with NO spot weld between them.

Figure 2.

<table>
<thead>
<tr>
<th>1</th>
<th>Example of Installed Shim</th>
</tr>
</thead>
</table>

B. At positions 8 and 9 (shown in Figure 1), insert the 2 triangular shims to the outboard sides of the spot welds.

Shims 8 and 9: Triangle
C. At positions 10 and 11 (shown in Figure 4) on both the RH and LH sides of the moon roof reinforcement structure, insert the 4 shims between the spot welds as indicated.

Shims 10 and 11: Larger Rectangle, 25.4 x 63.5 mm (1.0 x 2.5 in.)

NOTE
LH side is shown.
Repair Procedure (Continued)

6. From the Interior Noise Kit, use 2 felt strips with the following dimensions:
   Length: 300 mm (12.00 in.)
   Width: 32 mm (1.25 in.)
   Thickness: 0.5 mm (0.02 in. thinnest felt sheet material in the kit)

Temporarily peel back the backing paper at both ends and make a cut in the backing paper ONLY, 2 inches (50.8 mm) away from the ends. Place the backing paper back on the felt.

**NOTICE**
Do NOT cut the felt, ONLY the backing paper.

Figure 6.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cut Backing Here Before Installing on Roof</td>
</tr>
<tr>
<td>2</td>
<td>12.0 in. (300 mm)</td>
</tr>
<tr>
<td>3</td>
<td>2.0 in. (50.8 mm)</td>
</tr>
<tr>
<td>4</td>
<td>1.25 in. (32 mm)</td>
</tr>
</tbody>
</table>
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Repair Procedure (Continued)

7. Place the felt strips on both corners of the roof structure, between the roof panel and the moon roof mounting structure panel.

NOTICE
Use caution when pulling down on the moon roof mounting structure in the front mounting stud area (to make space for the felt to slide into place) to prevent damage to the roof outer sheet metal.

Once the felt is placed as close to the inner edge as possible, peel off the backing paper at the ends of the felt strip and attach the felt to the roof panel.

NOTE
Do NOT remove the backing paper in the middle of the felt strip.

8. Perform the felt repair on both front corners of the moon roof structure.
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Repair Procedure (Continued)

9. Temporarily install the sliding roof housing sub-assembly with the 8 nuts and 8 bolts.

Tighten the RH nut first and then the LH nut shown circled in the Figure below.

Torque: 5.5 N\text{\textbullet}m (56 kgf\text{\textbullet}cm, 49 in\text{\textbullet}lbf)

Figure 9.

NOTE
RH and LH rear nuts must be tightened before any other moon roof assembly fasteners are tightened.
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Repair Procedure (Continued)

10. Tighten the remaining 6 nuts.
   Torque: 5.5 N*m (56 kgf*cm, 49 in*lbf)

Figure 10.
Moon Roof Assembly Structure Noise

Repair Procedure (Continued)

11. Tighten the 8 bolts in the order sequence shown below.

   Torque: 8.0 N\textpercm (82 kgf\textpercm, 71 in\textquotesingle lb)

   Figure 11.
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Repair Procedure (Continued)

12. Tighten the 8 bolts of the brackets in the order sequence shown below.
   Torque: 8.0 N*m (82 kgf*cm, 71 in*lbf)
   Figure 12.

13. Install the remainder of the sliding roof components.

Refer to TIS, applicable model and model year Repair Manual:

- **2012 / 2013 / 2014 / 2015 / 2016 Camry:**

- **2012 / 2013 / 2014 / 2015 / 2016 Camry HV:**

- **2013 / 2014 / 2015 / Avalon:**

- **2013 / 2014 / 2015 / Avalon HV:**

14. Test drive the vehicle to verify repair.