Tesla Motors, Inc.
Service Bulletin

Loose Screw on Front Drive Unit HVIL Switch

Classification	Campaign Bulletin	**Section/Group**	44 - High Voltage System	**Country/Region**	United States, Canada
Year	2014	**Model**	Model S	**Version**	P85D

Bulletin Classification: *This campaign bulletin addresses a known non-safety-related condition and provides recommended technical diagnosis and repair procedures. Apply this procedure to all vehicles in the affected VIN range listed. These instructions assume knowledge of motor vehicle and high voltage electrical component repairs, and should only be executed by trained professionals. Tesla Motors assumes no liability for injury or property damage due to a failure to properly follow these instructions or repairs attempted by unqualified individuals.*

Condition

On some dual motor performance vehicles, the screw that secures the HVIL (High Voltage Interlock Loop) switch to the front drive unit fuse bracket might come loose. This might result in an HVIL fault.

Correction

Replace the screw and secure it with a backing nut.

Required Part(s):	**Part Number**	**Description**	**Quantity**
	1010047-00-A	SCREW, M3 X 13MM TORX 10, PAN HEAD W/PATCH	1
	2000869	NUT,HEX,M3X0.5,NYLOC,FULL,DIN 985,STL,ZN	1

These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the Parts Manual.

Special Tool(s):		
	223-28550-TSL	WIHA (TORQUE SCREWDRIVER .1 - .6NM)
	223-28556-TSL	WIHA (T10 TORX TORQUE CONTROL BLADE)

Correction Description	**Correction**	**Time**
Vehicle Inspection Only; Resecuring HVIL Switch Screw Not Necessary	S011544001	0.10
Resecure HVIL Switch Screw	S021544001	0.65

Procedure

⚠ **CAUTION:** This procedure requires a tool that can accurately measure 0.60 Nm of torque. If no such tool is available, do not perform this procedure.

1. Remove the 2nd row seat frame (refer to Service Manual procedure 13023002).

TIP: It is possible to remove the 8 bolts that secure the 2nd row seat frame (Figure 1) and temporarily secure the frame to the 2nd row seat backrest for access.

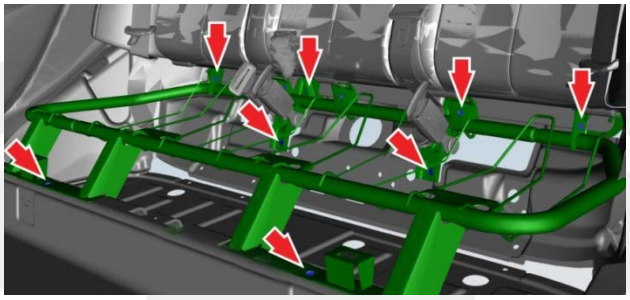

Figure 1

2. Disconnect the HVIL connector (Figure 2).

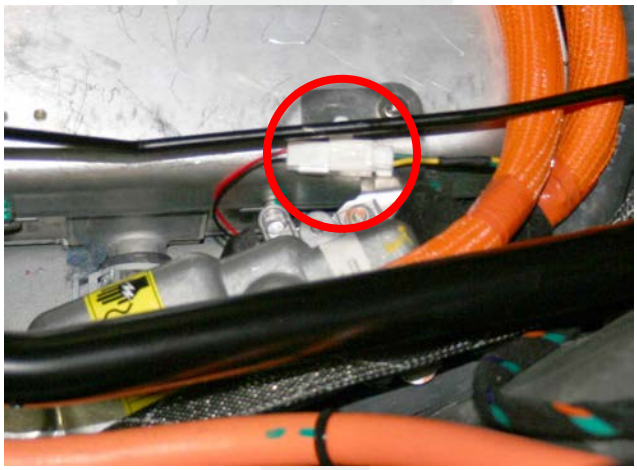

Figure 2 (Shown with seat frame installed)

3. Remove the 3 bolts that secure the HVIL fuse bracket (Figure 3).

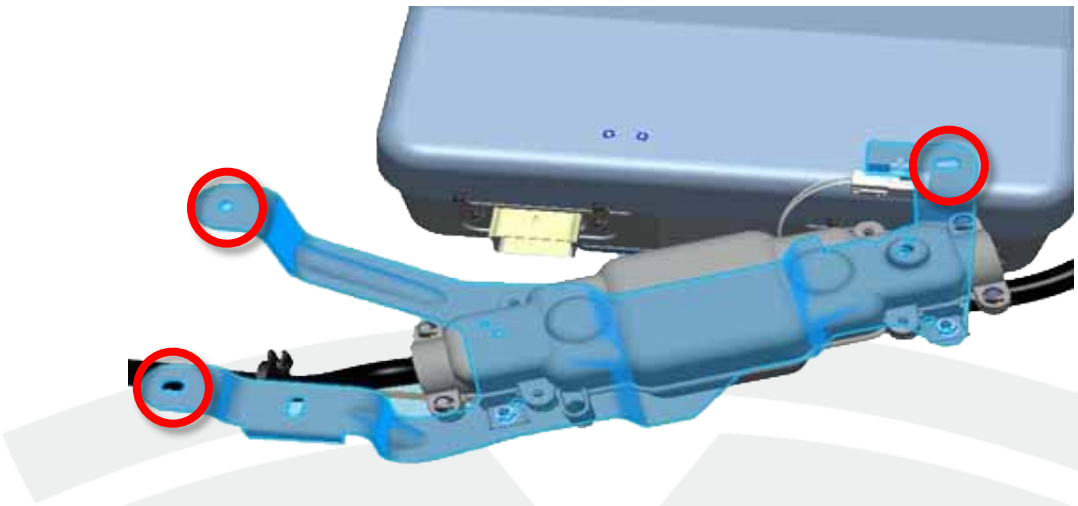

Figure 3

4. Measure the clearance between the HVIL switch body and the boss on the bracket (Figure 4). Record this value; it will be used in a later step.

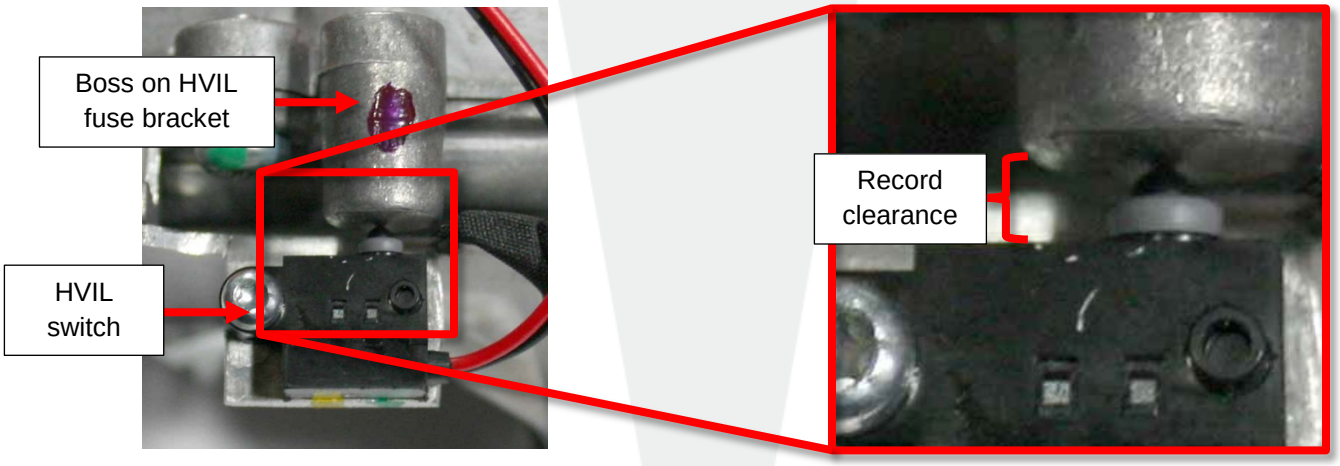

Figure 4

5. Remove and discard the screw that secures the HVIL switch to the bracket (Figure 5).

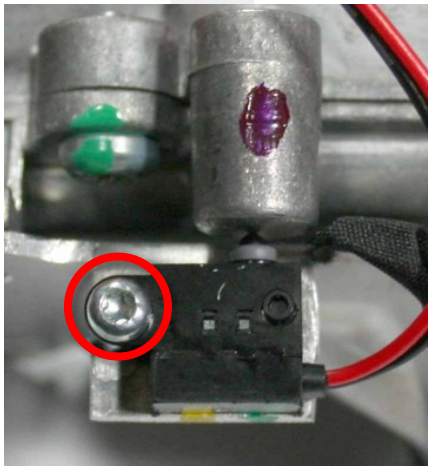

Figure 5

6. Check the value recorded in step 4:
    - If the clearance was between 2.5 mm and 3.9 mm, continue to the next step in this procedure.
    - If the clearance was less than 2.5 mm, bend the bracket downward so that the clearance will be within 2.5–3.9 mm after the HVIL switch is reinstalled.
    - If the clearance was greater than 3.9 mm, bend the bracket upward so that the clearance will be within 2.5–3.9mm after the HVIL switch is reinstalled.

⚠ **CAUTION:** Do not apply more than 0.60 Nm of torque in the next step.

7. Reinstall the HVIL switch to the bracket:

⚠ **CAUTION:** The patched screw and nyloc nut are one-time use parts.

a. Position the HVIL switch onto the bracket. Ensure that the post compresses against the bracket boss into the plastic housing to prevent an HVIL fault (Figure 6) and that the peg on the HVIL switch bracket is inserted into the non-threaded portion of the bracket (Figure 7).

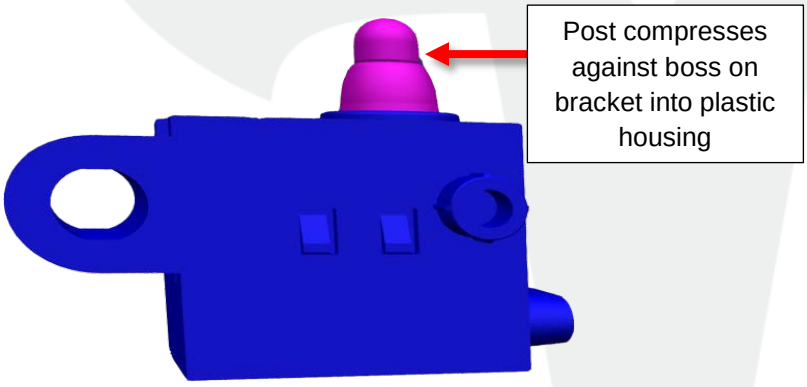

Figure 6

Figure 7

b. Insert the screw fully through the hole in the bracket so that the head of the screw is flush with the HVIL switch.
c. Tighten the nut by hand until it is fully seated on the screw.
d. Hold the screw in place with the torque screwdriver and tighten the nut until the torque screwdriver breaks torque.

8. Ensure that there is no gap between the bracket and the HVIL switch and the bracket and the nut. Ensure that the locating peg is not visible (Figure 8).

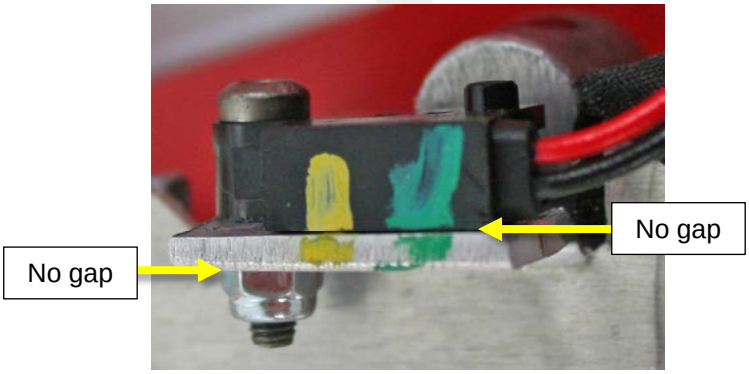

Figure 8

9. Repeat step 4. If the clearance is not between 2.5 mm–3.9 mm, repeat steps 5–8 until the clearance is within 2.5 mm–3.9 mm.

⚠ **CAUTION:** The patched screw and nyloc nut are one-time use parts.

10. Reinstall the 3 bolts that secure the HVIL fuse bracket (torque 9 Nm) (Figure 3).
11. Reconnect the HVIL connector (Figure 2).
12. Reinstall all components that were removed for access.
13. Use Toolbox to clear any HVIL alerts.
14. Test drive the vehicle.

Affected VIN(s) Some Performance Dual Motor Vehicles built before January 1, 2015.

NOTE: This is a simplified summary of the affected VIN list. Refer to the VIN/Bulletin Tracker or Customer/Vehicle profile to determine applicability of this bulletin for a particular vehicle.

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