TN-15-92-001 R4 January 18, 2024		Tesla, Inc. Tech Notes
Model:	**Vehicle System:**	**Region:**
All	92 - Tools and Equipment	All

Tech Note: Installing Heli-Coil Inserts

Tech Notes are announcements that help to communicate new information about Tesla Service. These instructions assume knowledge of motor vehicle and, if applicable, high voltage electrical component repairs, and should only be executed by trained professionals. Tesla assumes no liability for injury or property damage due to a failure to properly follow these instructions or for repairs attempted by unqualified individuals.

This Tech Note supersedes TN-15-92-001 R3, dated March 23, 2023. This new revision, R4, adds a part number for a thread repair insert that is to be used for repairs of front or rear underbody castings on Model Y Structural Pack vehicles. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

CAUTION: This is a generic procedure. Refer to the Heli-Coil documentation before attempting to repair damaged or stripped threads.

CAUTION: To prevent galvanic corrosion, “Primer Free” Heli-Coil inserts with a black coating (Figure 1) are required for repairing threads in aluminum components. Stainless steel inserts (Figure 2) should only be used to repair threads in steel components.

Figure 1 (Primer Free insert)

Figure 2 (Stainless steel insert)

WARNING: Heli-coil inserts cannot be used to repair damaged threads in rivet nuts of any kind. For example, the 2nd generation Model S rear node has steel rivet nuts securing the 2nd row lower seat belts (Figure 3), and these steel rivet nuts cannot be repaired with Heli-Coil inserts. Heli-Coil inserts can, however, be used to repair damaged threads in the 2nd row lower seat belt threads in vehicles with 1st generation rear nodes, which do not use rivet nuts (Figure 4).

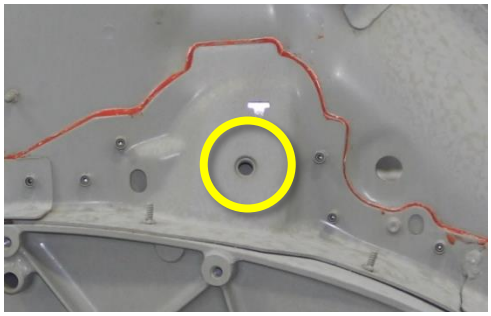

Figure 3 (2nd row lower seat belt hole in 2nd generation rear node)

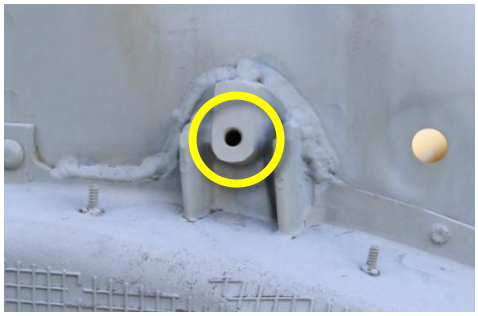

Figure 4 (2nd row lower seat belt hole in 1st generation rear node)

NOTE: Heli-Coil thread repair kits are not actively sent to Service Centers; they are sent upon request only. Email ServiceToolingEngineering@tesla.com to request a thread repair kit. Refer to the Special Tools table below for part numbers and descriptions. Kits contain both Primer Free and stainless steel inserts.

NOTE: For questions about which type of insert to use and/or to determine if it is permitted to repair the threads in a particular location, Service Centers can escalate a Toolbox session and TABS (Tesla Approved Body Shops) can email their local Body Repair Support team:

- North America: bodyrepair@tesla.com
- Europe, Middle East, and Africa: EMEAbodyrepair@tesla.com
- Australia and New Zealand: DL-ANZ-BodyRepairProject@tesla.com
- Asia Pacific: bodyrepair-china@tesla.com

Special Tools:	Part Number	Description
	1056155-06-A	THREAD REPAIR KIT M6 X 1.0
	1056155-08-A	THREAD REPAIR KIT M8 X 1.25
	1056155-10-A	THREAD REPAIR KIT M10 X 1.5
	1056155-12-A	THREAD REPAIR KIT M12 X 1.75
	1056155-14-B	THREAD REPAIR KIT M14 X 2.0
	1056157-09-A	INSERT, THREAD REPAIR, M8 x 1.25 x 20mm, A2 STAINLESS STEEL

NOTE: The Heli-Coil insert with part number 1056157-09-A is to be used for repairing threads in front or rear underbody castings on Model Y Structural Pack vehicles.

Procedure

1. Check the thread size of the bolt being installed and select the appropriate size Heli-Coil insert.
2. Use a drill with the correct size bit to drill out the damaged or stripped threads.

   NOTE: If the threaded hole is a through hole, drill completely through it. If the threaded hole is a blind hole, drill to the bottom of the hole.
3. Use a T-handle and the appropriately-sized tap from the kit to cut new threads (Figure 5). Once the tap begins cutting the threads, turn the T-handle back every half turn to clear the metal shavings.

   CAUTION: Ensure that the tap is straight and perpendicular to the hole while cutting the threads.

   NOTE: Use cutting oil to lubricate the tap as necessary.

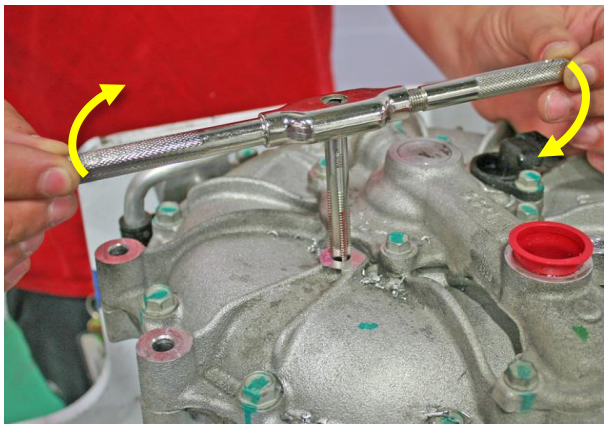

Figure 5

4. Use a blow gun and spray compressed air inside the hole to remove all metal shavings and cutting oil.

   WARNING: To avoid personal injury, eye protection must be worn when performing this step.

5. Screw the Heli-Coil insert onto the end of the installation tool until the end of the installation tool is flush with the tang (Figure 6).

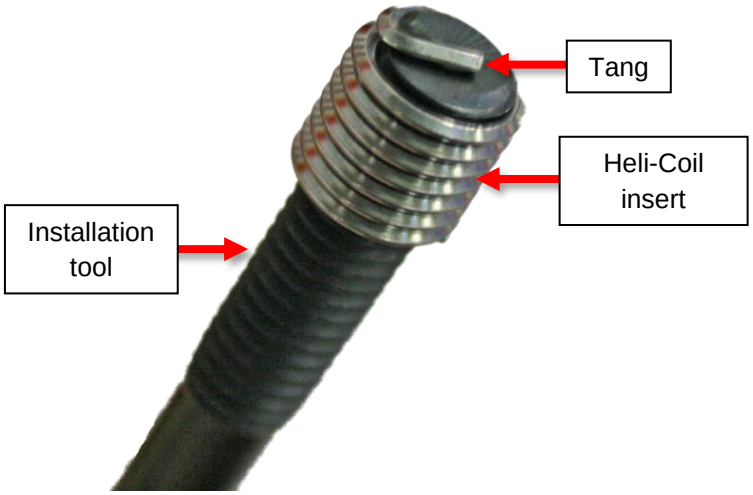

Figure 6

6. Install the Heli-Coil insert (Figure 7) until the top is ½ of a turn below the top of the threads (Figure 8).

   NOTE: If the Heli-Coil insert is taller than the hole, trim the top of the insert until it is flush with the top of the hole.

   NOTE: Multiple Heli-Coil inserts can be used if the hole is deeper than a single Heli-Coil insert.

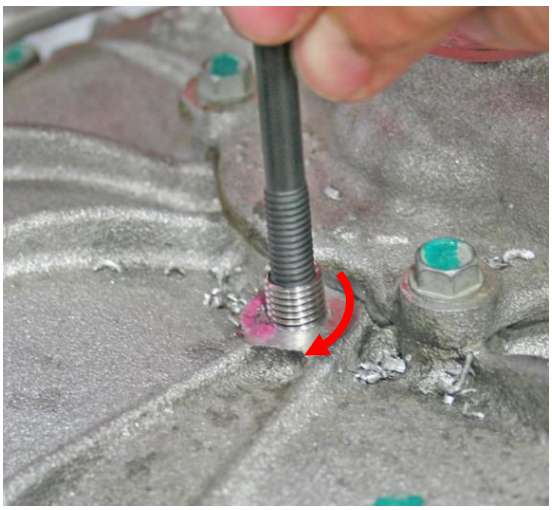

Figure 7

Figure 8 (Heli-Coil insert highlighted)

7. Remove the installation tool by unscrewing it from the Heli-Coil insert.

8. Use the tang break-off tool and a hammer to break the tang from the bottom of the Heli-Coil insert (Figure 9).

Figure 9

9. Use a blow gun and spray compressed air inside the hole to remove the tang and all metal shavings.

WARNING: To avoid personal injury, eye protection must be worn when performing this step.

NOTE: If necessary, use a magnet to remove the tang.