Taycan: Mechanical Noises from the Driver's Side of Dashboard

Vehicles Affected

Models	Model Year	Model Type	VIN Range	Vehicle-Specific Equipment
Taycan	2020 - 2021	Y1A/ Y1B	N/A	N/A

Revision History

Revision	Release Date	Changes
0	January 27, 2022	Original document

Condition

The customer complains of a noise from the driver's side of the dashboard. The noise is typically faint and may be described as a scratching or rattling noise, or a noise that sounds like a servo motor adjusting.

See attached sound file: *K109998 Noise.mp4*

To open the attachment, download the pdf and click on the paperclip icon to the left of your Adobe Acrobat window. If the paperclip is not visible, pass your mouse pointer over the lower part of the Acrobat window and the Acrobat toolbar should appear as seen below. Click on the Acrobat icon on the far right to access the paperclip, then click on the paperclip to open the attachment.

Technical Background

Hysteresis is the phenomenon in which a physical value lags behind the effect that causes changes to the value. Common examples of hysteresis are backlash between gears in a gear set or materials not completely returning to their original form after being stretched.

The expansion valve contained in the evaporator in the air conditioning refrigerant circuit has hysteresis values stored in its internal memory from the supplier. After the thermal management control unit (TME) goes to sleep, these stored hysteresis values may be erased. The TME does not compensate for the erased hysteresis values. Therefore, when the valve's direction of movement is changed in a valve control activation which is less than a given hysteresis threshold, the worm gear clacks in the way a loaded spring would, and the position sensor on the gear drive can be indexed. The gear drive compensates for this behavior through cyclical motor control, resulting in the audible noise heard.

1	High-voltage A/C compressor	9	Evaporator with expansion valve
2	Pressure/temperature sensor no. 1	10	Pressure/temperature sensor no. 3
3	iCond	11	Chiller (Heat exchanger w/expansion valve); refrigerant circuit to low-temperature circuit
4	A/C condenser with fan	12	Service valve, low pressure side
5	Check valve, refrigerant circuit	13	Pressure/temperature sensor no. 2
6	Dryer	14	Heat pump control valves (optional)
7	Service valve, high pressure side		
8	Internal heat exchanger (IHE)		

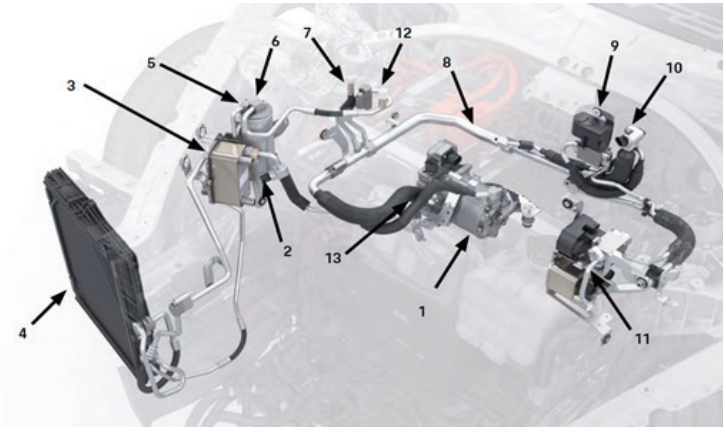

Figure 1: Refrigerant Circuit

Service Information

Please note that the loss of these hysteresis values produces no noticeable impact to the customer on vehicle operation. There is also no impact to the safety of the vehicle.

There is currently no permanent fix for this condition. Software changes for the TME that correct this condition have been made in production starting with model year 2022 vehicles. As of January 2022, this software is expected to be available for earlier model year vehicles in the second half of 2022.

In critical cases, please replace the expansion valve, part no. **9A781668200**, per Workshop Manual *WM 877019 Removing and installing expansion valve 1*.

Warranty

As always, be sure to document the repair completely in PQIS.

For this repair, please code the "cause" as follows:

Cause location:	87700	Expansion valve
Cause symptom:	1111	Adjustment fault

Use the following troubleshooting labor operation:

03350050	On board diagnostic
19381756	Coolant drain and fill
19010756	Coolant system bleed
27031900	Voltage converter remove and reinstall
87031750	Refrigerant drain and fill (**use ONLY if filling R134a**)
87031760	Refrigerant drain and fill (**use ONLY if filling with R1234yf**)
	87031750 and 87031760 cannot be claimed together. Only one of these labor operations is allowed per repair.
87701950	Expansion valve remove and reinstall

Search Items

Taycan, noise, dashboard, dash, scratching, expansion valve