

Part 573 Safety Recall Report

22V-050

Manufacturer Name : Tesla, Inc.**Submission Date :** FEB 07, 2022**NHTSA Recall No. :** 22V-050**Manufacturer Recall No. :** SB-22-18-002**Manufacturer Information :**

Manufacturer Name : Tesla, Inc.

Address : 13101 Tesla Road
Austin TX 78725

Company phone : 6506815000

Population :

Number of potentially involved : 26,681

Estimated percentage with defect : 1 %

Vehicle Information :

Vehicle 1 : 2021-2022 Tesla Model S

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The recall population includes certain new Model Year ("MY") 2021-22 Model 3, Model S and Model X and certain MY 2020-22 Model Y vehicles built with heat pump and operating firmware release 2021.44 through 2021.44.30.6 or were operating one of these firmware releases at the time of customer delivery, based on a review of manufacturing and firmware release records.

Production Dates : FEB 04, 2021 - JAN 12, 2022

VIN Range 1 : Begin :

NR

End : NR

 Not sequential

Vehicle 2 : 2021-2022 Tesla Model X

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The recall population includes certain new Model Year ("MY") 2021-22 Model 3, Model S and Model X and certain MY 2020-22 Model Y vehicles built with heat pump and operating firmware release 2021.44 through 2021.44.30.6 or were operating one of these firmware releases at the time of customer delivery, based on a review of manufacturing and firmware release records.

Production Dates : FEB 16, 2021 - JAN 11, 2022

VIN Range 1 : Begin :

NR

End : NR

 Not sequential

Vehicle 3 : 2021-2022 Tesla Model 3

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The recall population includes certain new Model Year (“MY”) 2021-22 Model 3, Model S and Model X and certain MY 2020-22 Model Y vehicles built with heat pump and operating firmware release 2021.44 through 2021.44.30.6 or were operating one of these firmware releases at the time of customer delivery, based on a review of manufacturing and firmware release records.

Production Dates : SEP 24, 2020 - JAN 12, 2022

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Vehicle 4 : 2020-2022 Tesla Model Y

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : The recall population includes certain new Model Year (“MY”) 2021-22 Model 3, Model S and Model X and certain MY 2020-22 Model Y vehicles built with heat pump and operating firmware release 2021.44 through 2021.44.30.6 or were operating one of these firmware releases at the time of customer delivery, based on a review of manufacturing and firmware release records.

Production Dates : NOV 26, 2019 - JAN 13, 2022

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Description of Noncompliance :

Description of the Noncompliance : FMVSS 103, S4.2, by incorporation, requires 80% minimum defrost of critical area C at 20 minutes. A software command found in firmware release 2021.44 through 2021.44.30.6 may prevent vehicles delivered with one of the firmware releases from complying with this requirement in certain conditions.

FMVSS 1 : 103 - Windshield defrosting and defogging systems

FMVSS 2 : NR

Description of the Safety Risk : Windshield defrost performance that does not fully comply with FMVSS 103 may cause reduced windshield visibility in certain conditions, which may increase the risk of a collision. Tesla is not aware of any crashes, injuries or fatalities related to this condition.

Description of the Cause : In vehicles built with heat pump, the Electronic Expansion Valve (EXV) may experience controller communication interruptions, after which the EXV driver may attempt to realign the EXV rotor by rotating it in a small increment toward the open direction. When heat pump vehicles operating firmware release 2021.44 through 2021.44.30.6 experience such interruptions, the vehicle software does not close the valve, and the accumulation of interruptions and subsequent realignments over extended periods where the vehicle is awake

may result in an unintended valve opening event. This, in turn, may trap refrigerant inside the evaporator and may deplete the refrigerant from the active components in the system. The depletion may result in fail-safe compressor stoppage, and cause loss of cabin heating, particularly in temperatures -10 C or colder. While the windshield defrost system continues to operate with the condition present, defrost performance may not fully comply with FMVSS 103.

Identification of Any Warning that can Occur : With the condition present, the customer receives an alert on the user interface, alerting them to the cabin heating, ventilation, and air-conditioning ("HVAC") system's performance being limited or unavailable. In addition, the blower motor in the HVAC system remains operational, which, when active, may slow fog or frost accumulation on the windshield and provide the customer with both visual warning and time to take additional actions.

Involved Components :

Component Name 1 : Vehicle FW Release 2021.44 through 2021.44.30.6

Component Description : NR

Component Part Number : NR

Supplier Identification :

Component Manufacturer

Name : Tesla, Inc.

Address : 13101 Tesla Road
Austin Texas 78725

Country : United States

Chronology :

- On or about December 10, 2021, Tesla began deploying firmware release 2021.44 and subsequent releases through firmware release 2021.44.30.6 to affected vehicles being prepared at delivery centers prior to delivery to customers, as well as to delivered vehicles.
- Later in December 2021, Tesla began receiving complaints from customers who brought their vehicles into Tesla Service for loss of heating performance in extreme cold weather conditions. An investigation into potential root cause commenced.
- On January 11, 2022, the lack of a software command to close the EXV after communication interruptions in

firmware release 2021.44 through 2021.44.30.6 was identified as potential cause for further assessment.

- On January 15, 2022, as a precautionary measure, firmware release 2021.44.30.7 and later releases reintroduced a software command to close the EXV.

- From January 21 through January 26, 2022, following discussions with NHTSA's Office of Vehicle Safety Compliance and Transport Canada to review recent consumer complaints that alleged similar loss of heating performance, tests were conducted to assess the compliance of new vehicles delivered with the software command found in firmware release 2021.44 through 2021.44.30.6 to FMVSS 103.

- Results of the compliance tests showed that new vehicles delivered with firmware release 2021.44 through 2021.44.30.6 were potentially noncompliant in worst-case scenario conditions.

- On January 26, 2022, having confirmed the root cause and completed the compliance assessment, a recall determination was made.

- On February 7, 2022, the affected vehicle population was expanded out of an abundance of caution to incorporate vehicles currently operating firmware release 2021.44 through 2021.44.30.6 that have yet to install available firmware release 2021.44.30.7 or a later release.

Description of Remedy :

Description of Remedy Program : Firmware release 2021.44.30.7 and later releases remedy the condition by reintroducing a software command to close the EXV, thereby preventing refrigerant from entering the evaporator. No further action is necessary from owners whose vehicles are equipped with firmware release 2021.44.30.7 or a later release.

Tesla does not plan to include a statement in the Part 577 owner notification about reimbursement for pre-notice repairs to owners since all of the affected vehicles remain covered under the new vehicle warranty, and owners will receive the remedy free of charge with an OTA firmware release.

How Remedy Component Differs from Recalled Component : Firmware release 2021.44 through 2021.44.30.6 do not close the EXV after communication interruptions, which may indirectly create noncompliant performance with FMVSS 103, whereas firmware release 2021.44.30.7 and later releases contain a software command to close the EXV, which corrects the potential noncompliance with FMVSS 103.

Identify How/When Recall Condition was Corrected in Production : The condition was not introduced in production because firmware releases used in production maintained the EXV closure logic reflected in firmware release 2021.44.30.7 and later releases. Tesla deployed firmware release 2021.44 and subsequent releases through firmware release 2021.44.30.6 to affected vehicles when they were being prepared at delivery centers prior to delivery to customers, as well as to delivered vehicles.

Recall Schedule :

Description of Recall Schedule : All Tesla stores and service centers will be notified on or shortly after February 4, 2022. Owner notification letters will be mailed in accordance with 49 C.F.R. § 577.7.

Planned Dealer Notification Date : FEB 04, 2022 - FEB 04, 2022

Planned Owner Notification Date : APR 01, 2022 - APR 01, 2022

* NR - Not Reported