

**2022-2023MY Carnival
Power Sliding Door
Basis of Safety Defect Determination 573.6(c)(6)**

Summer 2021	Through its normal escalation process, Kia North America, (Kia NA) Safety Office begins to identify customer complaints alleging child injuries caused by operation of power sliding door (PSD) in 2022MY Carnival.
September 2021	Kia NA Safety Office escalates 2022MY Carnival PSD reversal issue to SEL for further investigation.
October 1, 2021	Kia contacts ODI to identify concern regarding PSD and invites NHTSA to join inspection of complaint vehicle if available.
November 10, 2021	Kia NA Safety Office provides ODI an overview of PSD operation and preliminary data from peer vehicles during monthly meeting. Kia NA Safety Office continues to provide ODI with updates of alleged injury complaints and Kia vehicle investigation results on a monthly basis through November 2022.
February 2022	Kia NA Safety Office retains third-party engineering firm to assist in evaluation of 2022MY Carnival PSD and its peer vehicles.
March 8, 2022	Kia NA Safety Office mails letter to Carnival owners to remind them of PSD features, functions, and usage to ensure clear understanding of PSD operation, including its reversal feature limitations and warnings.
April 10, 2022	NHTSA issues opening resume for 2022MY Carnival PSD (PE22-004).
April 18, 2022	Kia NA Customer Care department receives customer complaint alleging child stuck hand in 2022MY Carnival PSD after child had pressed button to close PSD resulting in a bruised hand (Plano Incident Vehicle). Kia NA Safety Office begins process to schedule vehicle inspection.
May 26, 2022	Kia third-party engineering firm presents testing data on 2022MY Carnival and peer vehicles to ODI and identifies features and reversal operation of Carnival PSD and peers are comparable.
June 2022	Kia retains third-party biomechanical firm to evaluate injuries from a biomechanical perspective.

June 8, 2022	Kia NA Safety Office provides ODI with PSD update during monthly meeting, including June 2, 2022 inspection results of Plano Incident Vehicle conducted by Kia NA Safety Office, Kia's third-party engineering and third-party biomechanical firms. PSD found to perform as designed with no malfunction. Kia NA Safety Office receives medical records from customer at inspection confirming bruising of hand.
June 27, 2022	Kia NA Customer Care department receives customer complaint stating husband pressed button to close PSD and daughter reached into the 2022MY Carnival at last minute to grab something within the vehicle and caught hand in door (Egg Harbor Incident Vehicle). No medical attention received. Photos provided by customer showed swelling of hand. Kia NA Safety Office begins process to schedule vehicle inspection.
July 21, 2022	Kia NA Safety Office provides ODI with PSD update during monthly meeting. Kia third-party engineering firm analyzes x-rays and resistance measurements of 2022MY Carnival anti-pinch sensors including, incident and exemplar parts. No visible differences observed and resistance measurements consistent among all parts.
August 10, 2022	Kia NA Safety Office provides ODI with PSD update during monthly meeting, including July 21, 2022 inspection results of Egg Harbor Incident Vehicle conducted by Kia NA Safety Office, Kia's third-party engineering and third-party biomechanical firms. PSD performs as designed with no malfunction. Kia third-party biomechanical firm works on developing representative prosthetic arms based on the Plano and Egg Harbor Incident Vehicle complaint scenarios to further evaluate potential injury location and orientation.
August 31, 2022	Kia submits complete response to PE22-004 IR letter. No design or manufacturing defect related to motor vehicle safety found. Data and evaluation conducted to date indicate 2022MY Carnival PSD reversal systems are comparable to its peers.
October 27, 2022	Kia NA Safety Office, Kia third-party engineering firm and Kia third-party biomechanical firm conduct testing of 2022MY Carnival and peer vehicle PSD with child prosthetic arm. Vehicle Research and Test Center (VRTC) member in attendance. Testing confirms 2022MY Carnival is comparable to its peers.
November 9, 2022	Kia NA Safety Office provides ODI with update during monthly meeting and identifies that pinch force, reversal force, door speed,

	and damage to replica arms during door closing of 2022MY Carnival are comparable to peer vehicles. Kia continues to monitor and investigate customer complaints.
March 1, 2023	Kia NA Safety Office informs ODI of status of PSD investigation and identifies updated software logic developed to include warning chime when door opens or closes, as well as change in door speed to move more slowly as door approaches latching point. Kia NA Safety Office informs ODI of its plan to conduct customer satisfaction campaign with customer notification to update software of field vehicles.
March 2-15, 2023	In follow-up discussions, ODI requests Kia NA Safety Office consider conducting safety recall instead of customer satisfaction campaign.
March 22, 2023	Kia NA Safety Office decides to recall the 2022MY Carnival and certain 2023MY Carnival vehicles in an effort to increase customer awareness that the PSD is closing. Nine (9) confirmed injuries (one (1) fractured thumb and (1) broken arm alleged to have been caused by PSD but exact cause of whether injury related to PSD operation unknown; seven (7) bruises, swelling and/or minor cuts/scrapes).