

U.S. Department of Transportation

National Highway Traffic Safety Administration

ODI RESUME



Investigation: AQ23002

Prompted By: 16 Hyundai and Kia Recalls

Date Opened: 11/17/2023

Investigator: Choon Lee Reviewer: Alexander Ansley

Approver: Tanya Topka

Subject: Hyundai and Kia ABS Module Fires

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Mando America Corporation

Affected

Manufacturers: Hyundai Motor America / Kia America, Inc.

Products: Various Hyundai and Kia vehicles

Population: 6,383,145

Problem Description: To review the 16 Hyundai and Kia recalls conducted since 2016, involving

6,383,145 vehicles for potential ABS module fires.

ACTION/SUMMARY INFORMATION

Action: Open Audit Query (AQ)

Summary:

The Office of Defects Investigation (ODI) has received eight Hyundai Motor America (Hyundai) and eight Kia America, Inc. (Kia) Part 573 Recall Reports between 2016 and 2023. The combined 16 safety recalls all involve the antilock braking system (ABS) modules or Hydraulic Electronic Control Units (HECU) manufactured by the equipment supplier Mando. The Part 573 Recall Reports contain varying defect descriptions and differing remedy descriptions for the same or similar equipment supplied by Mando.

Safety recalls included in this Audit Query (AQ) review include:

Hyundai recalls 20V-520, 20V-543, 21V-161, 21V-160, 21V-303, 22V-056, 22V-810, and 23V-651.

Kia recalls 16V-815, 20V-518, 20V-519, 21V-137, 21V-331, 22V-051, 22V-800, and 23V-652

The purpose of this AQ is to evaluate the timeliness and scoping of Hyundai and Kia's defect decision making and adherence with reporting requirements; and understand the varying defect descriptions and remedies between these recalls.

Investigation: AQ23002 Open Resume Page 1 of 1

OMB Control No.: 2127-0004

Part 573 Safety Recall Report

16V-815

Manufacturer Name: Kia Motors America

Submission Date: NOV 04, 2016 NHTSA Recall No.: 16V-815 Manufacturer Recall No.: SC138



Manufacturer Information:

Manufacturer Name: Kia Motors America

Address: 111 Peters Canyon Road

Irvine CA 92606

Company phone: 800-333-4542

Population:

Number of potentially involved: 71,704 Estimated percentage with defect: 1 %

Vehicle Information:

Vehicle 1: 2008-2009 Kia Sportage

Vehicle Type: LIGHT VEHICLES

Body Style : ALL Power Train : GAS

Descriptive Information: 2008-2009MY Sportage vehicles

Production Dates: AUG 09, 2007 - MAY 13, 2009

Description of Defect:

Description of the Defect: Corrosion of the wire harness connector pins in the Hydraulic Electronic

Control Unit (HECU) assembly can occur due to improper sealing of the HECU's wire harness cover. If moisture contaminated with road salt reaches the HECU's circuit board, electrical short circuits may occur to the circuit board, which could lead to an engine compartment fire. However, the presence of salt

water in the HECU does not affect brake performance.

FMVSS 1: NR FMVSS 2: NR

Description of the Safety Risk: If the HECU circuit board experiences a short circuit, a thermal event can

result, including the possibility of an engine compartment fire.

Description of the Cause: Improper sealing of the HECU's wire harness cover permits salt water to

eventually reach the electrical circuit board through corroded connector pins.

Identification of Any Warning If an electrical short circuit occurs, the ESC warning light may illuminate.

that can Occur:

Supplier Identification:

Component Manufacturer

Name: Mando

Address: 32, Hamanho-Gil,

Poseung-Eup, Pyeongtaek-City Gyeonggi-Do FOREIGN STATES 451-821

Country: Korea, Republic of

Chronology:

See attached document titled "2008-2009 MY Sportage HECU Connector Chronology"

Description of Remedy:

Description of Remedy Program: Owners of the subject vehicles will be notified by first class mail with

instructions to bring their vehicles to a Kia dealer for inspection and

repair:

Dealers will be instructed to inspect the connector pins for corrosion. If no corrosion is identified, dealers will replace the connector cover with a new one. If corrosion is present, dealers will replace the HECU assembly and connector cover with a new one. Kia will reimburse owners for repair expenses already incurred pursuant to Kia's General Reimbursement Plan

filed March 21, 2016.

How Remedy Component Differs The newly produced connector cover for the remedy has an improved

from Recalled Component: sealing.

Identify How/When Recall Condition The supplier discontinued use of the HECU wire harness connector

was Corrected in Production: beginning with the 2010MY.

Recall Schedule:

Description of Recall Schedule: NR

Planned Dealer Notification Date: NOV 22, 2016 - NOV 22, 2016 Planned Owner Notification Date: NOV 28, 2016 - NOV 28, 2016

^{*} NR - Not Reported

OMB Control No.: 2127-0004

Part 573 Safety Recall Report

23V-651

Manufacturer Name: Hyundai Motor America

Submission Date: SEP 22, 2023 NHTSA Recall No.: 23V-651 Manufacturer Recall No.: 251



Manufacturer Information:

Manufacturer Name: Hyundai Motor America

Address: 10550 Talbert Avenue

Fountain Valley CA 92708

Company phone: 800-633-5151

Population:

Number of potentially involved: 1,642,551

Estimated percentage with defect: 1 %

Vehicle Information:

Vehicle 1: 2012-2015 Hyundai Accent

Vehicle Type: LIGHT VEHICLES

Body Style : 4-DOOR Power Train : GAS

Descriptive Information: The subject vehicles include 240,589 model year 2012-2015 Hyundai Accent vehicles

produced on the specified dates by Hyundai Motor Company ("HMC") for sale in the

U.S. market.

Production Dates: MAR 05, 2011 - OCT 31, 2014

VIN Range 1 : Begin : NR End : NR Not sequential

Vehicle 2: 2012-2015 Hyundai Azera

Vehicle Type: LIGHT VEHICLES

Body Style : 4-DOOR Power Train : GAS

Descriptive Information: The subject vehicles include 29,232 model year 2012-2015 Hyundai Azera vehicles

produced on the specified dates by Hyundai Motor Company ("HMC") for sale in the

U.S. market.

Production Dates: NOV 29, 2011 - OCT 31, 2014

Descriptive Information :	produced on the Motor Manufact	e specified dates uring Alabama	s by Hyı	nodel year 2011-2015 Hyu undai Motor Company ("H A") for sale in the U.S. mar	IMC") and Hyundai
Production Dates :	OCT 29, 2010 - N				
VIN Range 1:	Begin:	NR	End:	NR	■ Not sequential
	GAS The subject vehi	S cles include 22	,481 mc	odel year 2013-2015 Hyur es by Hyundai Motor Com	-
	in the U.S. marke	et.			- •
Production Dates:	MAR 16, 2012 - 0	OCT 30, 2014			
VIN Range 1:	Begin:	NR	End:	NR	■ Not sequential
	GAS	S)13 maa	del vear 2014-2015 Hyung	dai Eguus vehicles
				undai Motor Company ("H	
Production Dates:	APR 12, 2013 - C	OCT 29, 2014			
VIN Range 1:	Begin:	NR	End:	NR	■ Not sequential
			oupe		
Descriptive Information :		ed on the specif		odel year 2011-2015 Hyur es by Hyundai Motor Com	
Production Dates :	SEP 01, 2010 - O	CT 31, 2014			
VIN Range 1:	Begin :	NR	End:	NR	☐ Not sequential

Vehicle Type : Body Style : Power Train :	GAS The subject vehi	S cles include 45			2015 Hyundai Santa Fe vehicles
	U.S. market.	•	s by Hy	undai Motor Con	npany ("HMC") for sale in the
Production Dates :	OCT 17, 2012 - C				
VIN Range 1:	Begin:	NR	End:	NR	■ Not sequential
Vehicle Type : Body Style : Power Train :	GAS The subject vehi	S icles include 75 e specified dates	,554 m		Iyundai Santa Fe Sport vehicles cturing Georgia ("KMMG") for
Production Dates					
Production Dates : VIN Range 1 :		NR NR	End:	ND	☐ Not sequential
viiv italige 1.	Degiii .	NIC	Liiu .	IVIC	Not sequential
Vehicle Type :	2010-2013 Hyur LIGHT VEHICLE				
Body Style : Power Train :					
		olog ingluda 17	0 409 n	andal waar 2010	2012 Haundai Tuccan vahiolos
Descriptive information.					-2013 Hyundai Tucson vehicles npany ("HMC") for sale in the
Production Dates:	DEC 08, 2009 - A	AUG 19, 2013			
VIN Range 1:	Begin:	NR	End:	NR	☐ Not sequential
			el Cell		
Descriptive Information :					dai Tucson Fuel Cell vehicles npany ("HMC") for sale in the
Production Dates :	APR 28, 2014 - C	OCT 23, 2014			
VIN Range 1:	Begin:	NR	End:	NR	■ Not sequential

Vahiela 11 -								
Vahiela 11:								
venicie 11.	2011-2015 Hyundai Sonata Hybrid							
Vehicle Type :	LIGHT VEHICLES							
Body Style :	4-DOOR							
Power Train:	HYBRID ELECT	HYBRID ELECTRIC						
Descriptive Information :	The subject vehicles include 83,213 model year 2011-2015 Hyundai Sonata HEV (Hybrid) vehicles produced on the specified dates by Hyundai Motor Company ("HMC") for sale in the U.S. market.							
Production Dates:	DEC 02, 2010 - 0	OCT 31, 20	14					
VIN Range 1:	Begin:	NR	End:	NR	☐ Not sequential			
Vehicle Type :	The subject veh	ES icles includ	le 116,911 m		2-2015 Hyundai Veloster Motor Company ("HMC") for sale			
	in the U.S. mark		•	v				
Production Dates:	JUL 02, 2011 - 0	CT 31, 201	.4					
VIN Range 1:	Begin:	NR	End:	NR	☐ Not sequential			
			ruz					
Descriptive Information :		ed on the s			-2012 Hyundai Veracruz Motor Company ("HMC") for sale			
Production Dates:	DEC 24, 2009 - A	AUG 09, 20	12					
VIN Range 1:	Begin:	NR	End:	NR	■ Not sequential			

Description of the Defect: The subject vehicles are equipped with Anti-Lock Brake System ("ABS")

modules that could leak brake fluid internally and cause an electrical short

over time.

FMVSS 1: NR FMVSS 2: NR

Description of the Safety Risk: An electrical short could result in significant overcurrent in the ABS module

increasing the risk of an engine compartment fire while parked or driving.

Description of the Cause: Certain ABS motor shaft O-ring material formulations may be susceptible to

physical changes over time due to varying factors, including vehicle ABS

specifications and/or the presence of foreign contaminants in the brake fluid, such as moisture, dirt, and dissolved metals, which could affect sealing strength and result in brake fluid leaking onto the ABS controller PCB.

Identification of Any Warning 1.

1. Smoke from the engine compartment.

that can Occur: 2. Burning/melting odor.

3. Illumination of the MIL and/or ABS light.

Involved Components:

Component Name 1 : ABS Assembly
Component Description : ABS module
Component Part Number : 58900-*****

Supplier Identification:

Component Manufacturer

Name: Mando

Address: 32, Hamanho-gil, Poseung-eup

Foreign States

Country: Korea, Republic of

Chronology:

Please see Attachment A

Description of Remedy:

Description of Remedy Program: Owners can continue driving these vehicles; however, Hyundai

recommends parking their vehicles outside and away from structures until the recall remedy is completed. All owners of the subject vehicles will be notified by first class mail with instructions to bring their vehicles to a Hyundai dealer for replacement of the ABS fuse. This remedy will be offered at no cost to owners for all affected vehicles, regardless of whether the affected vehicles are still covered under Hyundai's New Vehicle Limited Warranty. Additionally, Hyundai will provide owners of affected vehicles reimbursement for out-of-pocket expenses incurred to obtain a remedy for the recall condition in accordance with the reimbursement

plan submitted to NHTSA on February 24, 2022.

How Remedy Component Differs The remedy fuse is rated at a lower amperage to effectively limit the

from Recalled Component: operating current of the ABS module.

Identify How/When Recall Condition The ABS motor shaft O-ring material formulation was changed by the was Corrected in Production: supplier in September 2014 and February 2015 at the Korea and U.S.

plants, respectively.

Recall Schedule:

Description of Recall Schedule: Dealers and owners will be notified by the specified dates.

Planned Dealer Notification Date: NOV 21, 2023 - NOV 21, 2023 Planned Owner Notification Date: NOV 21, 2023 - NOV 21, 2023

^{*} NR - Not Reported

OMB Control No.: 2127-0004

Part 573 Safety Recall Report

23V-652

Manufacturer Name: Kia America, Inc.
Submission Date: SEP 25, 2023
NHTSA Recall No.: 23V-652
Manufacturer Recall No.: SC284



Manufacturer Information:

Manufacturer Name: Kia America, Inc.

Address: 111 Peters Canyon Road

Irvine CA 92606

Company phone: 800-333-4542

Population:

Number of potentially involved: 1,730,192 Estimated percentage with defect: 1 %

Vehicle Information:

Vehicle 1: 2010-2019 Kia Borrego

Vehicle Type: LIGHT VEHICLES

Body Style: ALL Power Train: GAS

Descriptive Information: Certain 2010-2019 model year Borrego vehicles equipped with Electronic Stability

Control manufactured from November 27, 2009 through June 14, 2018 sold only in

the U.S. Territories (62 units).

The recall population was determined by a review of vehicle production and supplier

records. The vehicles subject to this recall were not produced in VIN order.

Customers seeking information about their specific vehicle will be referred to Kia's

Consumer Assistance Center or their Kia dealer.

Production Dates: NOV 27, 2009 - JUN 14, 2018

Vehicle 2: 2014-2016 Kia Cadenza

Vehicle Type: LIGHT VEHICLES

Body Style: ALL Power Train: GAS

Descriptive Information: Certain 2014-2016 model year Cadenza vehicles equipped with Electronic Stability

Control manufactured from February 1, 2013 through January 7, 2016 (30,362 units).

The recall population was determined by a review of vehicle production and supplier

records. The vehicles subject to this recall were not produced in VIN order.

Customers seeking information about their specific vehicle will be referred to Kia's

Consumer Assistance Center or their Kia dealer.

Production Dates: FEB 01, 2013 - JAN 07, 2016

Vehicle 3:	2010-2013 Kia	Forte/Forte Ko	up		
	LIGHT VEHICLE		•		
Body Style :					
Power Train :					
Descriptive Information :	Certain 2010-20	013 model vear	Forte/1	Forte Koup vehic	eles equipped with Electronic
					hrough March 22, 2013
	(179,051 units)				
	The recall popu	lation was doto	rminad	by a rovious of w	ehicle production and supplier
					oduced in VIN order.
					nicle will be referred to Kia's
	Consumer Assis	•		-	
Production Dates :	AUG 18, 2010 -	MAR 22, 2013			
VIN Range 1:		NR	End:	NR	■ Not sequential
	3				_ :
Vehicle 4:	2015-2018 Kia	K900			
Vehicle Type :	LIGHT VEHICLE	ES			
Body Style :	ALL				
Power Train :	GAS				
Descriptive Information :	Certain 2015-20	018 model year	K900 v	ehicles equipped	l with Electronic Stability
1		•			h October 30, 2017 (5,015
	units).			_	
	The	1-4:		h	. h.:
					ehicle production and supplier oduced in VIN order.
		•		-	nicle will be referred to Kia's
	Consumer Assis	•		-	
Production Dates :	DEC 18, 2013 -	OCT 30, 2017			
VIN Range 1:		NR	End:	NR	☐ Not sequential
	0				_ :
Vehicle 5:	2011-2015 Kia	Optima (Hwasu	ng)		
Vehicle Type :	LIGHT VEHICLE	ES			
Body Style :	ALL				
Power Train :					
Descriptive Information :	Certain 2011-20	015 model vear	Optima	vehicles equipp	ed with Electronic Stability
		•	-		2, 2010 through July 23, 2015
	(148,753 units)		01	G	Ç Ü
	_, ,,				
					ehicle production and supplier
					oduced in VIN order.
	Consumer Assis				nicle will be referred to Kia's
Production Dates :			dien N	ia acuici.	
		NR	End:	MP	Not cognontial
VIN Range 1:	negiii.	INIC	LIIU.	TAIK	☐ Not sequential

		-	orgia)		
	Certain 2012-20	ctured at Kia Ge	•		uipped with Electronic Stability 12, 2011 through July 11, 2013
	records. The ve	hicles subject to ing information	o this re about	ecall were no their specific	of vehicle production and supplier it produced in VIN order. e vehicle will be referred to Kia's
Production Dates : VIN Range 1 :		IUL 11, 2013 NR	End:	NR	☐ Not sequential
Vehicle Type : Body Style :	2011-2013 Kia LIGHT VEHICLE ALL HYBRID ELECT	SS			
	Certain 2011-20	013 model year			icles equipped with Electronic 2011 through December 12, 2013
	records. The ve Customers seek Consumer Assis	hicles subject to ing information stance Center or	o this re about	ecall were no their specific	of vehicle production and supplier t produced in VIN order. c vehicle will be referred to Kia's
Production Dates : VIN Range 1 :		DEC 12, 2013 NR	End:	NR	☐ Not sequential
Vehicle Type : Body Style : Power Train :	GAS Certain 2012-20	ES 017 model year			ed with Electronic Stability Control
	The recall popurecords. The ve Customers seek Consumer Assis	lation was dete hicles subject to ing information stance Center or	rmined o this re about	by a review ecall were no their specific	of vehicle production and supplier t produced in VIN order. e vehicle will be referred to Kia's
Production Dates : VIN Range 1 :		MAR 31, 2017 NR	End:	NR	☐ Not sequential

Vehicle 9:	2011-2014 Kia	Sorento				
Vehicle Type :	LIGHT VEHICLE	ES				
Body Style :	ALL					
Power Train :	GAS					
Descriptive Information :					quipped with Electronic Stability h June 14, 2013 (397,163 units).	
	The recall population was determined by a review of vehicle production and supplier records. The vehicles subject to this recall were not produced in VIN order. Customers seeking information about their specific vehicle will be referred to Kia's Consumer Assistance Center or their Kia dealer.					
Production Dates :	MAR 03, 2010 -	JUN 14, 2013				
VIN Range 1:	Begin:	NR	End:	NR	☐ Not sequential	
W 1: 1 40	0011 0010 K	C 1				
	2011-2013 Kia					
Body Style:	LIGHT VEHICLE	20				
Power Train :						
		013 model vear	Soul ve	hicles equir	ped with Electronic Stability	
Descriptive information.		•			October 2, 2013 (349,309 units).	
	The recall population was determined by a review of vehicle production and supplier records. The vehicles subject to this recall were not produced in VIN order. Customers seeking information about their specific vehicle will be referred to Kia's Consumer Assistance Center or their Kia dealer.					
Production Dates :	JUN 09, 2010 - 0	OCT 02, 2013				
VIN Range 1:	Begin:	NR	End:	NR	☐ Not sequential	
	2010-2013 Kia LIGHT VEHICLE ALL	-				
Power Train :	GAS					
Descriptive Information :		•	- '	_	equipped with Electronic Stability October 7, 2013 (143,615 units).	
	The recall population was determined by a review of vehicle production and supplier records. The vehicles subject to this recall were not produced in VIN order. Customers seeking information about their specific vehicle will be referred to Kia's Consumer Assistance Center or their Kia dealer.					
Production Dates :	MAY 26. 2009 -	OCT 07. 2013				
VIN Range 1:		NR	End:	NR	☐ Not sequential	

Not sequential

Vehicle 12:	2010-2010 Kia R	ondo			
Vehicle Type :	LIGHT VEHICLES				
Body Style :					
Power Train :	GAS				
Descriptive Information :				pped with Electronic Stability Contro 1gh July 30, 2010 (1,484 units).	l
	records. The veh	icles subject to ng information	this recall we about their sp	view of vehicle production and suppl re not produced in VIN order. recific vehicle will be referred to Kia's er.	
Production Dates:	SEP 19, 2009 - JU	L 30, 2010			
VIN Range 1:	Begin :	NR	End: NR	☐ Not sequenti	al
Vahicla 13:	2011-2011 Kia R	ondo			
	LIGHT VEHICLES				
Body Style :					
Power Train :					
	Certain 2011 mod	om July 21, 201		pped with Electronic Stability Contro ruary 9, 2011 and sold only in the U.S	
	records. The vehi	cles subject to	this recall wer	view of vehicle production and suppli re not produced in VIN order. Custom le will be referred to Kia's Consumer	iers

Description of Defect:

Description of the Defect: An engine compartment fire may occur in the area where the Hydraulic

NR

Electronic Control Unit (HECU) is located. It is believed that over time, the HECU experiences an electrical short circuit condition that results in excessive current, thereby increasing the risk of an engine compartment fire while

driving or parked. However, the exact cause of the electrical short circuit

End: NR

remains unknown.

FMVSS 1: NR FMVSS 2: NR

Description of the Safety Risk: A fire increases the risk of injury.

Production Dates: JUL 21, 2010 - FEB 09, 2011

VIN Range 1 : Begin :

Description of the Cause: It is believed that a short circuit may result in excessive current within the

HECU. Exact cause of the short circuit remains unknown.

Identification of Any Warning Illumination of MIL, ABS warning light, burning/melting smell, smoke from that can Occur: engine compartment.

Involved Components:

Component Name 1: HECU

Component Description: Hydraulic Electronic Control Unit

Component Part Number: 58920-****

Component Name 2: HECU

Component Description: Hydraulic Electronic Control Unit

Component Part Number: 58910-****

Supplier Identification:

Component Manufacturer

Name: Mando

Address: 32 Hamanho-gil, Poseung-eup,

Gyeonggi-do Pyeongtaek-si Foreign States 17962

Country: Korea, Republic of

Chronology:

See attached document titled "Multiple Kia Models HECU Chronology."

Description of Remedy:

Description of Remedy Program: All owners of the subject vehicles will be notified by first class mail with

instructions to bring their vehicles to a Kia dealer. Kia dealers will be instructed to install new fuse(s) to prevent an overcurrent condition in the HECU's electrical circuit board. As a precautionary measure, customers will be instructed to park their vehicles outside and away from structures

until the recall remedy is performed.

Kia will reimburse owners for repair expenses already incurred pursuant

to Kia's General Reimbursement Plan filed May 10, 2022.

How Remedy Component Differs Remedy component has a lower fuse amperage.

from Recalled Component:

was Corrected in Production:

Identify How/When Recall Condition No changes were made during the production of the subject vehicles.

Recall Schedule:

Description of Recall Schedule: The dealer notification is scheduled to begin and end on November 10,

2023. The owner notification is scheduled to begin on November 14,

2023 and end on November 23, 2023.

Planned Dealer Notification Date : NOV 10, 2023 - NOV 10, 2023 Planned Owner Notification Date : NOV 14, 2023 - NOV 23, 2023

* NR - Not Reported