Part 573 Safety Recall Report 22V-223

Manufacturer Name : Arcimoto Inc
Submission Date : APR 06, 2022
NHTSA Recall No. : 22V-223
Manufacturer Recall No. : NR

Manufacturer Information :

Manufacturer Name : Arcimoto Inc
Address : 2034 W. 2nd Ave
Eugene OR 97402
Company phone : 5416836293

Population :

Number of potentially involved : 516
Estimated percentage with defect : 1 %

Vehicle Information :

Vehicle 1 : 2019-2022 Arcimoto FUV
Vehicle Type : MOTORCYCLES
Body Style : OTHER
Power Train : HYBRID ELECTRIC
Descriptive Information : Affects all five-hundred sixteen MY2019 - MY2022 vehicles (fifty-seven MY2019 T-FUV, one-hundred twenty-six MY2020 T-FUV, six MY2020 D-Deliverator-1, four MY2021 Roadster, one MY2021 E-Rapid Responder, two-hundred sixty-five MY2021, twenty-three MY2021 D-Deliverator-1, twenty-one MY2021 Roadster T-FUV, and 15 MY2022) produced from 09/19/2019 through to 03/21/22.
Production Dates : SEP 19, 2019 - MAR 21, 2022

VIN Range 1 :	Begin :	7F7ATR312KER00000	End :	7F7ATR317KER00056	☐ Not sequential
VIN Range 2 :	Begin :	7F7ATR312LER00001	End :	7F7ATR310LER00126	☐ Not sequential
VIN Range 3 :	Begin :	7F7ATR310MER00001	End :	7F7ATR318MER00182	☐ Not sequential
VIN Range 4 :	Begin :	7F7ATR311MER00184	End :	7F7ATR313MER00185	☐ Not sequential
VIN Range 5 :	Begin :	7F7ATR317MER00187	End :	7F7ATR314MER00194	☐ Not sequential
VIN Range 6 :	Begin :	7F7ATR311MER00198	End :	7F7ATR313MER00221	☐ Not sequential
VIN Range 7 :	Begin :	7F7ATR317MER00223	End :	7F7ATR310MER00239	☐ Not sequential
VIN Range 8 :	Begin :	7F7ATR310MER00242	End :	7F7ATR314MER00244	☐ Not sequential
VIN Range 9 :	Begin :	7F7ATR31XMER00247	End :	7F7ATR31XMER00247	☐ Not sequential
VIN Range 10 :	Begin :	7F7ATR313MER00249	End :	7F7ATR314MER00275	☐ Not sequential
VIN Range 11 :	Begin :	7F7ATR319NER00001	End :	7F7ATR314NER00004	☐ Not sequential
VIN Range 12 :	Begin :	7F7ATR31XNER00007	End :	7F7ATR313NER00012	☐ Not sequential
VIN Range 13 :	Begin :	7F7ATR319NER00015	End :	7F7ATR312NER00017	☐ Not sequential
VIN Range 14 :	Begin :	7F7ATR316NER00019	End :	7F7ATR312NER00020	☐ Not sequential

Vehicle 2 :	2021-2022 Arcimoto Rapid Responder
Vehicle Type :	MOTORCYCLES
Body Style :	OTHER
Power Train :	HYBRID ELECTRIC
Descriptive Information :	Affects all five-hundred sixteen MY2019 - MY2022 vehicles (fifty-seven MY2019 T-FUV, one-hundred twenty-six MY2020 T-FUV, six MY2020 D-Deliverator-1, four MY2021 Roadster, one MY2021 E-Rapid Responder, two-hundred sixty-five MY2021, twenty-three MY2021 D-Deliverator-1, twenty-one MY2021 Roadster T-FUV, and 15 MY2022) produced from 09/19/2019 through to 03/21/22.
Production Dates :	JAN 01, 2021 - MAR 21, 2022
VIN Range 1 :	Begin : 7F7AER318MER00001 End : 7F7AER318MER00001 ☐ Not sequential

Vehicle 3 :	2020-2022 Arcimoto Deliverator
Vehicle Type :	MOTORCYCLES
Body Style :	OTHER
Power Train :	HYBRID ELECTRIC
Descriptive Information :	Affects all five-hundred sixteen MY2019 - MY2022 vehicles (fifty-seven MY2019 T-FUV, one-hundred twenty-six MY2020 T-FUV, six MY2020 D-Deliverator-1, four MY2021 Roadster, one MY2021 E-Rapid Responder, two-hundred sixty-five MY2021, twenty-three MY2021 D-Deliverator-1, twenty-one MY2021 Roadster T-FUV, and 15 MY2022) produced from 09/19/2019 through to 03/21/22.
Production Dates :	NOV 17, 2020 - MAR 21, 2022
VIN Range 1 :	Begin : 7F7ADR316LER00001 End : 7F7ADR315LER00006 ☐ Not sequential
VIN Range 2 :	Begin : 7F7ADR314MER00001 End : 7F7ADR313MER00023 ☐ Not sequential

Vehicle 4 :	2020-2022 Arcimoto Roadster
Vehicle Type :	MOTORCYCLES
Body Style :	OTHER
Power Train :	HYBRID ELECTRIC
Descriptive Information :	Affects all five-hundred sixteen MY2019 - MY2022 vehicles (fifty-seven MY2019 T-FUV, one-hundred twenty-six MY2020 T-FUV, six MY2020 D-Deliverator-1, four MY2021 Roadster, one MY2021 E-Rapid Responder, two-hundred sixty-five MY2021, twenty-three MY2021 D-Deliverator-1, twenty-one MY2021 Roadster T-FUV, and 15 MY2022) produced from 09/19/2019 through to 03/21/22.
Production Dates :	JAN 01, 2020 - MAR 21, 2022
VIN Range 1 :	Begin : 7F7ARR314LER00001 End : 7F7ARR31XLER00004 ☐ Not sequential
VIN Range 2 :	Begin : 7F7ARR312MER00001 End : 7F7ARR316MER00020 ☐ Not sequential

Description of Defect :

Description of the Defect :	Once the battery temperature is below 0°C the VCU will turn the charge enabled relay (CER) off to prevent charging below freezing. When this happens twice in one minute it will disable the CER and prevent charging from an outlet and the kinetic energy restorative system. Once this happens charging can not happen again until a hard reset is done.
FMVSS 1 :	NR
FMVSS 2 :	NR
Description of the Safety Risk :	If an owner were to attempt to charge their vehicle overnight, not knowing the vehicle is unable to be charged due to the defect, the owner could feasibly start the vehicle and attempt to drive it. The result could be that the engine unexpectedly stalls, creating a risk of a crash.
Description of the Cause :	This defect is being caused because the battery is trying to prevent an unsafe charging situation. If a battery is below 0°C the VCU will turn the CER off to prevent charging below freezing. The VCU will then allow charging after the temperature is above 0°C again. This is a normal function. When the VCU sees the temperature drop below 0°C then raises above 0°C and then it happens a second time within a minute, due to fluctuating temperature at the freezing mark, it will disable the CER permanently and will not allow charging again until a hard reset is done.
Identification of Any Warning that can Occur :	None

Involved Components :

Component Name 1 :	VCU, ECOTRONS, ES1274A
Component Description :	VCU
Component Part Number :	003222

Component Name 2 :	ORION BMS 2
Component Description :	BMS
Component Part Number :	001052

Supplier Identification :

Component Manufacturer

Name : Ecotrons LLC
Address : 13115 Barton Rd Ste H
Whittier California 90605
Country : United States

Chronology :

Beginning in January, the service team began receiving complaints from customers whose vehicles would not charge after being exposed to freezing temperatures (>0°C.) On January 13th a problem communication meeting was called to evaluate the serenity of the situation and determine the next steps for establishing a root cause. It was determined that this was a serious enough problem to place a hold on shipping any more vehicles until a root cause and remedy could be established. The electrical engineering team and the service department began investigating the defect. On February 17th it was confirmed that the VCU was disabling the CER when the temperature was below 0°C to prevent an unsafe charging situation. Once the temperature went back above 0°C the VCU enabled the CER. The defect is that if the temperature is fluctuating at 0°C it is possible for the CER to be disabled twice in a minute. The firmware was programmed to permanently disable the CER when this happens as an extra safety precaution until a hard reset could be done on the vehicle.

Description of Remedy :

Description of Remedy Program :	Owners will be notified by mail and instructed to contact Arcimoto to schedule a service appointment to have their firmware updated to prevent the defect from happening. There will be no charge to vehicle owners for this service. To the best of our knowledge, no owners have incurred any costs resulting from this defect.
How Remedy Component Differs from Recalled Component :	The new firmware will still allow the VCU to disable the CER and will prevent charging if the temperature falls below 0°C The difference is that the amount of times that the temperature goes below and above freezing during a minute will be increased and make it mathematically impossible to have the CER latch out again during fluctuating temperatures around the 0°C mark.
Identify How/When Recall Condition was Corrected in Production :	On March 11th the new firmware was confirmed and released to both service and production teams. The production department is now able to continue manufacturing the vehicles with the new firmware in place.

Recall Schedule :

Description of Recall Schedule :	Arcimoto does not intend to send any dealer or distributor notifications, as it has neither dealers nor distributors at this time.
Planned Dealer Notification Date :	MAY 09, 2022 - MAY 16, 2022
Planned Owner Notification Date :	MAY 09, 2022 - MAY 16, 2022

* NR - Not Reported