Part 573 Safety Recall Report 20V-031

Manufacturer Name : Arcimoto Inc
Submission Date : JAN 20, 2020
NHTSA Recall No. : 20V-031
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 : 50
Estimated percentage with defect : 100 %

Vehicle Information :

Vehicle 1 : 2019-2019 Arcimoto FUV
Vehicle Type : MOTORCYCLES
Body Style : OTHER
Power Train : HYBRID ELECTRIC
Descriptive Information : Affects fifty of initial fifty-one MY2019 vehicles produced through to 12/27/2019.
Production Dates : SEP 19, 2019 - DEC 27, 2019

VIN Range 1 :	Begin :	7F7ATR312KER00000	End :	7F7ATR319KER00043	☐ Not sequential
VIN Range 2 :	Begin :	7F7ATR312KER00045	End :	7F7ATR316KER00050	☐ Not sequential

Description of Noncompliance :

Description of the Noncompliance : Due to electrical interference within the Arcimoto FUV electrical harnesses and modules, certain vehicles have experienced intermittent display corruption and loss of display information.
FMVSS 1 : 123 - Motorcycle controls and displays
FMVSS 2 : NR
Description of the Safety Risk : Lack of uninterrupted display information could cause operator confusion in circumstances, increasing the risk for operator error.
Description of the Cause : NR
Identification of Any Warning that can Occur : None.

Supplier Identification :

Component Manufacturer

Name :	NR
Address :	NR
	NR
Country :	NR

Chronology :

Shortly after Arcimoto went into Retail production in late September 2019, Arcimoto began receiving reports of failed & corrupted displays. Initial research determined these were unrelated to earlier reports from test-vehicle display corruption (caused by low 12V system). Arcimoto immediately began researching the failure mode, identified vehicles affected, and was able to determine the causes and reproduce the fault as a function of multiple different failure modes: display mode vulnerability, radio antenna signal interference, wiper motor power surge interference, and display GPU brownout. On December 28, 2019, a three-phase solution was initiated. The first phase installs new software that performs display checks at least every ten seconds to detect display corruption and then corrects it by reloading graphics assets to the graphics RAM. The second and third phases are intended to be implemented in the very near future as the permanent corrective actions, which will block any wiper motor power surge, upgrade the display's ability to block electrical noise, and installs new software to actively prevent display corruption. The Engineering and Q&RA Departments presented research and analysis findings to Arcimoto executives on December 29, 2019, who subsequently decided on the same day to validate findings of non-compliance issue from Engineering and Q&RA Departments, and notify NHTSA of a Recall.

Description of Remedy :

Description of Remedy Program :	Owners will be notified by mail and instructed to contact Arcimoto to schedule a service appointment(s) to have their display corruption issue resolved. 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 :	Arcimoto intends to implement a three-phase remedy program to robustly address the issue of intermittent display corruption. Phase One of the remedy program, already implemented on production vehicles, performs display checks at least every ten seconds to detect display corruption and then corrects it by reloading graphics assets to the graphics RAM. This change was intended to eliminate a scenario where there is a display corruption that caused loss of display information. Phase Two of the remedy program will install the flyback/ damping-diode to the exterior of the wiper motor to block a power surge and will add a filter and surge protection to display backer board or inline to upgrade display's ability to block electrical noise. Phase Three of the remedy program will implement a CRC software for active corruption prevention that is expected to detect the signal corruption at the receiving end, and re-transmit the correct display data.

Identify How/When Recall Condition was Corrected in Production :	Phase One: Software to Constantly Check & Reload Graphics: The display module was updated with a new software revision starting December 28, 2019, which performs display checks at least every ten seconds to detect display corruption and then corrects it by reloading graphics assets to graphics RAM; Phase Two: Diode: Install a flyback/ damping-diode to the exterior of the wiper motor to block a power surge, and Phase Two: Filter: Add filter and surge protection to display backer board or inline to upgrade display's ability to block electrical noise; Phase Three: CRC software for Corruption Prevention: Upload Check RAM Corruption (CRC) software to actively prevent corruption.

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 :	NR - NR
Planned Owner Notification Date :	JAN 21, 2020 - JAN 31, 2020

* NR - Not Reported