Part 573 Safety Recall Report 23E-074

Manufacturer Name : Zero Motorcycles Inc.
Submission Date : APR 08, 2024
NHTSA Recall No. : 23E-074
Manufacturer Recall No. : SV-RCL-023-014

Manufacturer Information :

Manufacturer Name : Zero Motorcycles Inc.
Address : 380 El Pueblo Road
Scotts Valley CA 95066
Company phone : 831-438-3500

Population :

Number of potentially involved : 306
Estimated percentage with defect : 100 %

Equipment Information :

Brand / Trade 1 : Zero Motorcycles
Model : Accessory Chain Kits
Part No. : 10-08127 & 10-08140
Size : NR
Function : Accessory
Descriptive Information : Zero Motorcycles aftermarket final drive chain-kit with incorrect Instruction Sheet for non-factory replacement of Original Equipment final drive belt-system on SDS and XMX Zero motorcycle platform models with splined-shaft motors.

Potential safety defect caused by following incorrect instruction sheet included in Subject Chain-Kits.

Production Dates : OCT 28, 2016 - OCT 03, 2023

Description of Defect :

Description of the Defect : The Instruction Sheet included with Subject Chain-Kits includes incorrect instructions that, if followed, may lead to the compromise of the retention compound of the motor shaft's target magnet.

FMVSS 1 : NR
FMVSS 2 : NR

Description of the Safety Risk : Should the retention compound of the motor shaft's target magnet be compromised by following the incorrect instructions provided in the Instruction Sheet of a Subject Chain-Kit, the target magnet could subsequently move, leading to unexpected response of the motor, including a potential switch to reverse, which could cause a crash.

Description of the Cause : Instructions provided with the Subject Chain-Kits did not call out sufficient heating time to break down the retention compound used for the bolt that

	retains the original belt sprocket to the motor shaft. These instructions also incorrectly called out the use of an impact driver to remove this sprocket bolt. Insufficient breakdown of the sprocket bolt's retention compound combined with the use of an impact driver may lead to excessive impact loads imparted to the motor shaft, which could lead to compromising the retention compound for the target magnet that is also on this shaft.
Identification of Any Warning that can Occur :	If the motor shaft's target magnet moves, depending on the degree of movement, the unexpected response could manifest itself as a reduction in power and/or less predictable acceleration / hesitation in power delivery.

Involved Components :

Component Name :	Original Instruction Sheet included / made availab
Component Description :	Chain Kit iSheet - Splined Shaft - NA ENG
Component Part Number :	87-00075

Supplier Identification :

Component Manufacturer

Name :	NR
Address :	NR
	NR
Country :	NR

Chronology :

8/22/23: Zero notified of 3 warranty cases by single dealership on 2 MY21 and 1 MY23 FX motorcycles experiencing unexpected drive direction change upon recent installation of Zero Subject Chain-Kits. Quality issues Stop Ship of these kits.
8/22/23: Zero CS notified by customer of MY23 FX of accident reported to have taken place 8/21 due to unexpected drive direction change. No injuries reported. Zero determines this motorcycle also has Subject Chain-Kit recently installed by same dealership.
8/23/23: Product Integrity Team Zero (PITZ) meets to review concern. Action items issued.
8/25/23: PITZ decides to send Zero employee to dealership where the 3 warranty MCs are available for inspection.
8/30/23: PITZ reviews report of 8/29 inspection. All 3 show signs of target magnet movement due to retaining compound compromise. Team continues activities to determine root cause.
9/5/23: Review of Subject Chain-Kit Instruction Sheet leads PITZ to call for internal audit as well as onsite audit of dealership's procedure.

9/15/23: PITZ reviews internal and 9/13 dealership audits, leading to suspect insufficient heat application to sprocket retention bolt on motor shaft could lead to excessive impact-driver use to remove this bolt, which could then lead to potential compromise of target magnet retention compound also on this shaft. Test requested to explore this potential root cause.
9/22/23: PITZ concludes results of impact test do indicate potential compromise. PITZ also informed of 5 more cases in warranty system appear to indicate same condition post non-factory installation of Subject Chain-Kits.
9/26/23: PITZ reviews all data and agrees to make recommendation to management. Team also reviews available data on mileage post chain-kit installation prior to manifestation of condition, with values ranging from 20 to 1,771mi, and concludes condition would manifest in no more than 5,000mi post installation.
Final Chronology contained in Manufacturer Comments below.

Description of Remedy :

Description of Remedy Program :	Zero Motorcycles dealers will be instructed to assess the mileage on each motorcycle with a Subject Chain-Kit. If they can assess that the chain-kit has a minimum of 5,000 vehicle miles without experience of any throttle response concerns, there will be no need to perform any corrective action. However, if the chain-kit has fewer than 5,000 vehicle miles, or the chain-kit mileage cannot be determined, or the vehicle has experienced any throttle response concerns, the dealer will replace the motor of the affected motorcycle with a new motor which has a sprocket chain kit pre-installed by Zero. Dealers will then submit a warranty claim for the parts and labor related to this service. If a customer has experienced a concern related to this condition outside of the warranty period, Zero Motorcycles will reimburse their corresponding out-of-pocket prior expenses. For unsold/uninstalled Subject Chain-kits in dealer inventory, the remedy will be a new replacement Instruction Sheet with the correct procedure that eliminates the potential to compromise the target magnet's retention compound.
How Remedy Component Differs from Recalled Component :	The correct/remedy Instruction Sheet calls out a minimum of 4 minutes heating applied to the motor sprocket retaining bolt to break down its retention compound and the use of a hand-tool to remove it. The incorrect/recalled Instruction Sheet calls out 1 minute of heating and the use of an impact driver to remove the motor sprocket retention bolt.
Identify How/When Recall Condition was Corrected in Production :	Since this concerns the non-factory service facility removal of the Original Equipment belt sprocket from the motor shaft for installation of the Zero Subject Chain-Kit sprocket, this is not a production concern.

Recall Schedule :

Description of Recall Schedule :	Zero Motorcycles expects to notify its dealer network no later than the week of 10/23/2023 and motorcycle owners no later than the week of 10/30/2023.

Planned Dealer Notification Date :	OCT 24, 2023 - OCT 25, 2023
Planned Owner Notification Date :	OCT 30, 2023 - OCT 31, 2023

Purchaser Information :

The following manufacturers purchased this defective/noncompliant equipment for possible use or installation in new motor vehicles or new items of motor vehicle equipment:

Name :	NR
Address :	NR
	NR
Country :	NR
Company Phone :	NR

* NR - Not Reported