Defect Information Report

Maserati S.p.A. has determined that a defect that relates to motor vehicle safety exists in model year 2014 to 2016 Maserati Quattroporte and Ghibli vehicles. Maserati North America, Inc. (MNA) is providing this notification to your office in accordance with **49 C.F.R. Part 573**.

Maserati S.p.A. and MNA have determined that the above described vehicles were manufactured with an incorrectly torqued rear tie-rod to hub carrier assembly attaching bolt. An incorrectly torqued rear tie-rod to hub carrier assembly attaching bolt can gradually lessen its clamping force, which will lead to noise emanating from the rear of the vehicle during driving conditions. Over time, and under extreme driving conditions (very hard acceleration or deceleration cornering events), a rear tie-rod to hub carrier assembly attaching bolt which has lost its clamping force, can fail, leading to separation of the tie-rod from the hub carrier assembly. A tie-rod which has separated from the hub carrier assembly can lead to a rear over-steer condition (vehicle pulling from the rear to one side), thereby increasing the risk of a vehicle crash.

As noted below, a total of **27,324** vehicles with this defect have been sold or leased to customers, and thus this notification relates to those vehicles.

The information, to the extent currently available to MNA follows:

1. *Manufacturer's Name and Address.*

Maserati North America, Inc.
250 Sylvan Avenue
Englewood Cliffs, N.J. 07632

2. *Identification of Vehicles Potentially Containing the Defect.*

The affected vehicles consist of model year 2014 to 2016 Maserati Quattroporte and Ghibli vehicles. A draft bulletin which includes the affected VIN's will be supplied when available.

3. *Total Number of Vehicles.*

The total population of model year 2014 to 2016 Maserati Quattroporte and Ghibli vehicles potentially in the affected VIN range is **27,324** that have been sold or leased to customers.

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4. *Approximate percentage of vehicles Estimated to Contain the Defect*.

Potentially 100% of all units within the affected VIN range may contain the defect.

5. *Description of the Defect.*

The defect has been identified as an incorrectly torqued rear tie-rod to hub carrier assembly attaching bolt which can gradually lessen its clamping force, which will lead to noise emanating from the rear of the vehicle during driving conditions. Overtime, and under extreme driving conditions (very hard acceleration or deceleration cornering events), a rear tie-rod to hub carrier assembly attaching bolt which has lost its clamping force, can fail, leading to separation of the tie-rod from the hub carrier assembly. A tie-rod which has separated from the hub carrier assembly can lead to a rear over-steer condition (vehicle pulling from the rear to one side), thereby increasing the risk of a vehicle crash.

6. *Chronology of Events leading to this Defect Determination.*

Please note the following chronology of events:

a. In early July 2014, Maserati opened an investigation as a result of 4 claims from the field regarding noise issues experienced by customers during driving conditions. The analysis revealed a torque decay of the bolt attaching the rear tie rod to the hub carrier assembly.
b. The four claims indicated a vehicle mileage of below 5000 km (approximately 3100 miles) on all four claims. With this, the issue was addressed to the component assembly process at the assembly-line.
c. On July 27th, 2014 the containment action at the plant began with a manual torque application of the tie-rod to hub carrier attaching bolt with a torque applied of 100Nm (74 ft. lbs.), and the addition of a yellow paint mark on the attaching bolt to indicate that the containment was performed on the vehicle.
d. On the same date (July 27, 2014), all the vehicles in stock (at the factory) were checked, and all of the vehicles were found to be within specification (tie-rod to hub carrier attaching bolt with the correct torque).
e. An extensive analysis of the manufacturing process at the plant was performed between August and September, 2014. The analysis indicated a possible torque process failure due to an incorrect initial torque phase of the bolt, which could lead to a jammed or seized connection of the tie-rod to hub carrier assembly.
f. On September and continuing through to November 2014, a complete design review of the manufacturing torque process was implemented which lead to the modification of the torque procedure, with new a range definition for torque and control angles. The containment action was stopped following the process modification and extensive tests were conducted at the plant.

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g. An additional eight field claims were recorded between December 2014 and March 2015, that also affected vehicles manufactured after the clean point was established at the plant on November 2014. Based on these facts the internal investigation was opened for a second time.
h. On March 11 2015, (as an immediate containment action), the manual torque process of the joint was checked and re-applied at the plant.
i. Parts from the field were received at Maserati SpA between April and June 2015.
j. Claims analysis (of the eight) evidenced at this point in time also indicated high mileage failures (this was the reason both plant process and design issues were further investigated).
k. On July 2015, a first improvement step was implemented at the plant torque process to lessen the effects of the final torque on the joint. The new strategy included: a first pre-torque application of 100 Nm (74 ft. lbs.) of the tie-rod to hub carrier attaching bolt to properly mate the joint, then a torque release of the bolt, followed by a torque application of 100Nm (74 ft. lbs.), and finally, turning the attaching bolt a further 45 degrees.
l. During August 2015, an extensive stress analyses bench test was conducted on the joint (tie-rod to hub carrier assembly), following numerical statistical research evaluation outside of normal vehicle usage operation. This analysis indicated that in a very remote customer usage condition (equating to extreme driving specifically, very hard acceleration or deceleration events during cornering), which would involve a combination of high lateral loads and high suspension travel (high g forces together with high vehicle speeds), it was possible to have a potential torque decay (loss of clamping force) of the tie-rod to hub carrier attaching bolt that can lead to a loose joint condition, similar to the one experienced in the field.
m. Due to this result, a new tie-rod to hub carrier attaching bolt equipped with a chemical patch, designed to ensure the final tightening torque even during these extreme driving conditions was proposed. On September 2015 a subsequent test rig was carried out on this new configuration. The test rig results were positive and confirmed the solution to the issue.
n. On September 18, 2015 this new torque application process together with the new bolt equipped with the chemical patch was implemented in series production at the plant.
o. Between October 2015 and February 2016 it was then defined a possible service solution procedure for the vehicles already produced, and potential effectiveness of the solution.
p. From March through April 2016 the service solution procedures were verified and then validated with proper bench testing (following procedure optimization to improve in-use vehicle serviceability).

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q. On the April 26, 2016 Maserati decided to issue a proactive safety recall campaign.

NOTE: As of April 26, 2016, Maserati is unaware of any accidents or injuries potentially related to this issue.

7. *Test Results and Other Information.*

None at this time.

8. *Description of Proposed Remedy.*

The remedy for the affected vehicles involves the check of both the rear right and left-hand tie-rod to hub carrier attaching bolt torque in all the affected vehicles:

A. If the tie-rod joint(s) are loose and/or damaged, the rear hub carrier, rear tie rod with its attaching bolt will be replaced.
B. If the tie-rod joint(s) are not loose, only the bolt will be replaced.

The remedy procedure depending on which procedure will be needed (8A or 8B) can take up to approximately 1 day to be completed, and will be performed free of charge to the vehicle owner.

MNA anticipates that an adequate inventory of required parts will be available within 60 days. All customers for whom this remedy is required, and our dealers, will receive notification of the remedy campaign. MNA intends to send customer notification letters to each owner of an affected vehicle by first-class mail to inform the customer of the problem, and advise the customer to contact their local Authorized Maserati Dealer to schedule an appointment to repair the affected vehicle. We will also be posting it on the Maserati USA website under "Services" by VIN. Because all of the vehicles that potentially have the defect are 2014 to 2016 models, all of the affected vehicles are currently under warranty, and no customers would have incurred any costs to obtain a pre-notification remedy of this defect. Accordingly, MNA requests that it be excused from the requirements of 49 C.F.R. §§ 573.6(c)(8), 573.13, and 577.11 to provide notification to owners that they may be eligible for reimbursement of the costs of obtaining a pre-notification remedy of this defect. 49 C.F.R. § 573.13(d) permits manufacturers to "exclude reimbursement for costs incurred within the period during which the manufacturer's original or extended warranty would have provided for a free repair of the problem addressed by the recall, without any payment by the consumer." In addition, 49 C.F.R. § 577.11(e)

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contemplates that, upon written request by the manufacturer, NHTSA may determine that the manufacturer is not required to provide notification concerning reimbursement for pre-notification remedies because all covered vehicles are under warranty. Thus, MNA's request to be excused from the obligation of specifying a reimbursement program in this report, and of providing notification to owners concerning it, is consistent with the regulations governing reimbursement for pre-notification remedies.

9. *Campaign Schedule and Draft Notices.*

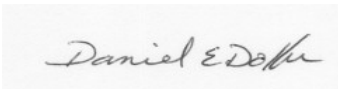
MNA expects to launch the recall within 60 days of this notification to NHTSA, as well as additional dealer materials including a draft copy of the recall campaign instruction bulletin. MNA has assigned this campaign an internal Maserati number of **303.**

10. *Representative Copies of Notifications that Relate to the Defect and Have Been Sent to More than One Manufacturer, Distributor, Dealer, or Purchaser.*

There are no notices, bulletins or other communications that relate directly to the defect and have been sent by MNA to more than one manufacturer, distributor, dealer, or purchaser.

Should you have questions concerning this submission, please contact me at your earliest convenience at 201-816-2638.

Sincerely,



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