

BMW Group

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December 14, 2010

Scott Yon
Chief, Vehicle Integrity Division
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Ave., S.E.
Washington, DC 20590

Re: PE10-038

Dear Mr. Yon:

With this letter, BMW is responding to NHTSA's Information Request dated October 7, 2010 in the above captioned matter.

The attachments included with this letter comprise the non-confidential portion of BMW's response. As requested, BMW has repeated each question verbatim and provided our response accordingly. Our detailed responses are contained in the attachments.

Because a portion of our response is considered by BMW to be confidential, it is not being submitted to your office. Rather, as instructed, the confidential portion (CD No. 2) is being submitted to the Office of Chief Counsel, along with information supporting our request for confidentiality. We are attaching to this letter CD No. 1, the non-confidential portion of our response.

BMW understands that it is NHTSA policy to protect the privacy of individuals under Exemption 6 of the Freedom of Information Act, 5 USC Section 552(b)(6). Certain information requested by NHTSA, such as personal information pertaining to BMW vehicle owners that is contained in the attachments, although not claimed herein to be "BMW Confidential" pursuant to 5 USC Section 552(b)(4) (Exemption 4) and 49 CFR 512, should not be made public by NHTSA in accordance with Exemption 6.

Should you have any questions pertaining to the information enclosed with this letter, please contact me at (201) 571-5360, or Martin Rapaport of my staff at (201) 571-5208.

Sincerely,



Jan Urbahn
General Manager
Safety Engineering & Intelligent Transportation Systems

Attachments:

CD No. 1

Cc:

S. Wood, NHTSA (Office of Chief Counsel)

Company
BMW of North America, LLC

BMW Group Company

Mailing address
PO Box 1227
Westwood, NJ
07675-1227

Office address
300 Chestnut Ridge Road
Woodcliff Lake, NJ
07677-7731

Telephone
(201) 307-4000

Fax
(201) 571-5479

Website
bmwusa.com



**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

1. **State, by model and model year, the number of subject vehicles BMW has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by BMW, state the following:**
 - a. **Vehicle identification number (VIN);**
 - b. **Make;**
 - c. **Model;**
 - d. **Model Year;**
 - e. **Date of manufacture;**
 - f. **Date warranty coverage commenced;**
 - g. **Whether the vehicle is subject to service action TSB/CSC SI M32 03 04;**
 - h. **If affected by TSB/CSC SI M32 03 04, the date the service action was completed, or "n/a" if not completed; and,**
 - i. **The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).**

Provide the table in Microsoft Access 2000, or a compatible format, entitled "PRODUCTION DATA."

Response:

The source of this information is our vehicle production database and is current as of 30 September 2010.

The number of subject vehicles BMW has manufactured for sale or lease in the United States by Model and Model Year is contained in Table 1.

Model	Model Year	US Production
Cooper	2004	14,757
Cooper S	2004	13,553
Cooper	2005	14,209
Cooper S	2005	17,095

Table 1.

Attachment "PRODUCTION-DATA" on CD No. 1 contains the requested information.

Note, for items (g) and (h), that information, if applicable to a specific vehicle/VIN, is contained in Attachment "WARRANTY-DATA" on CD No. 1 in response to Question 5.

2. **State the number of each of the following, received by BMW, or of which BMW is otherwise aware, which relate to, or may relate to, the alleged defect in the subject vehicles:**
 - a. **Consumer complaints, including those from fleet operators;**
 - b. **Field reports, including dealer field reports;**
 - c. **Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;**

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

- d. Reports involving a fire, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a subject vehicle, property damage claims, consumer complaints, or field reports;
- e. Property damage claims;
- f. Third-party arbitration proceedings where BMW is or was a party to the arbitration; and,
- g. Lawsuits, both pending and closed, in which BMW is or was a defendant or codefendant.

For subparts "a" through "e" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "g," provide a summary description of the alleged problem and causal and contributing factors and mfg's short name's [sic - BMW's] assessment of the problem, with a summary of the significant underlying facts and evidence. For items "f" and "g," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Response:

The source of this information is our customer contact database, various field report databases, and certain legal databases, and is current as of 30 September 2010.

The number of reports, if any, by category, that may relate to allegations of loss of power steering assist is provided in Table 2. Table 2 also includes the number of reports, if any, in which an allegation, of the type noted in 2(c) and 2(d), is contained within the specific report in that category.

Category	Number	Number Including Allegation of Crash	Number Including Allegation of Injury	Number Including Allegation of Fatality	Number Including Allegation of Fire
Consumer Complaints	200	0	0	0	0
Field Reports	2	0	0	0	2
Dealer Field Reports	0	0	0	0	0
Property Damage Claims	0	0	0	0	0
Third-Party Arbitration Proceedings*	1	0	0	0	0
Lawsuits*	2	0	0	0	0

Table 2.

*The third-party arbitration proceedings, and lawsuits, if any, are "Lemon-Law" matters.

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

Attachment "LL-LEMON-LAW-SUMMARY-INFO" on CD No. 1 contains the requested information for items (f) and (g).

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:
- a. BMW's file number or other identifier used;
 - b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
 - c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
 - d. Vehicle's VIN;
 - e. Vehicle's make;
 - f. Vehicle's model;
 - g. Vehicle's model year;
 - h. Vehicle's mileage at time of incident;
 - i. Incident date;
 - j. Report or claim date;
 - k. Whether a crash is alleged;
 - l. Whether a fire is alleged;
 - m. Whether a loss of vehicle control is alleged;
 - n. Whether BMW replaced the power steering pump;
 - o. If BMW replaced the power steering pump, explain in detail the reason the pump was replaced, or "n/a" if not replaced;
 - p. Whether the vehicle was re-purchased by BMW;
 - q. If BMW re-purchased the vehicle, explain in detail the reason for the re-purchase, or "n/a" if not re-purchased;
 - r. Whether property damage is alleged;
 - s. Number of alleged injuries, if any; and
 - t. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "COMPLAINT DATA."

Response:

The sources of this information and the availability dates are as noted above.

Attachment "COMPLAINT DATA - CC" on CD No. 1 contains the requested information for the consumer complaints that may relate to allegations of loss of power steering assist. Separate consumer complaint files are provided and are grouped according to consumer complaint code as noted in the file name. Within each file, complaints are listed by BMW file number. Although not specifically requested, we have included the complaint code for each complaint in order to identify an individual complaint with its corresponding code/description. Also included is the vehicle production date.

Although not specifically requested, we have also included fields identified as "Type" and "Issue Summary" in Attachment "COMPLAINT DATA - CC" on CD No. 1. "Type" is used by the customer service representative to help categorize the customer's request, such as

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

“inquiry”, “complaint”, etc., while “Issue Summary” is used by the customer service representative to help summarize, in a very brief manner, the customer’s concern.

The consumer complaint codes and code descriptions utilized in the search are contained in Table 3. Table 3 also includes the number of complaints by specific complaint code. Consumer complaint codes and descriptions (3201 – SUC – Wheel Vibration/Balance, 3211 – SUC – Steering Box), while also utilized in the search, did not produce any complaints which may relate to allegations of loss of power steering assist.

Consumer Complaint Code	Code Description	Number of Consumer Complaints
3200	Steering Unit Components (SUC)	113
3201	SUC – Wheel Vibration/Balance	0
3211	SUC – Steering Box	0
3213	SUC – Steering Rack	3
3231	SUC – Steering Column	4
3233	SUC – Steering Wheel	4
3241	SUC – Hydraulics – Pump, Hose	76

Table 3.

Attachment “COMPLAINT DATA – FR” on CD No. 1 contains the requested information for the field reports that may relate to allegations of loss of power steering assist. Although not specifically requested, we have also included production date. The field report code descriptions utilized in the search were as follows:

- Steering
- Power steering
- Steering locked/stiff/binds/pulls
- Power steering cooling fan
- Front axle / front wheel control
- General vehicle electrics

Attachment “COMPLAINT DATA – OR” on CD No. 1 contains the requested information for “Other Reports”, i.e., notifications to BMW from other sources, such as from field- or market-area representatives. In those cases, there is not a report of the specific type noted in 2(a) through 2(g). Nevertheless, we are including the information as it may relate to allegations of loss of power steering assist.

For item 3(p) and 3(q), no vehicle repurchase, if any, has occurred solely due to a matter that may relate to an allegation of loss of power steering assist. In other words, an allegation, if any, that may relate to loss of power steering assist, is not the sole reason for a vehicle repurchase.

BMW Response
to
NHTSA PE10-038
14 Dec 2010

Attachment "COMPLAINT DATA - LL" on CD No. 1 contains the requested information for the ("Lemon-Law") third-party arbitration proceedings and ("Lemon-Law") lawsuits that may relate to allegations of loss of power steering assist.

- 4. Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method BMW used for organizing the documents.**

Response:

The sources of this information, and the availability dates, are as noted above.

Attachment "CC - CONSUMER COMPLAINTS" on CD No. 1 contains copies of the consumer complaints that may relate to allegations of loss of power steering assist. Separate consumer complaint files are provided and are grouped according to consumer complaint code as noted in the file name. Within each file, complaints are organized chronologically.

Attachment "FR-FIELD-REPORTS" on CD No. 1 contains copies of the field reports that may relate to allegations of loss of power steering assist.

Attachment "LL-LEMON-LAW" on CD No. 1 contains copies of the lemon law cases that may relate to allegations of loss of power steering assist. These cases do not comprise any instances of crashes, injuries, or fatalities. Lemon law cases are based on a variety of complaints where it is alleged that the vehicle is out of service for more than 30 days or that certain alleged defects cannot be repaired after a reasonable number of attempts. Power steering may be one of a number of alleged defects in the Complaint, but is not the focus of the Complaint, or power steering may be part of a repair order related to the lawsuit or third party arbitration/mediation although not specifically stated in the Complaint filed.

- 5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by BMW to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; claims that were repaired under service action TSB/CSC SI M32 03 04; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.**

Separately, for each such claim, state the following information:

- a. **BMW's claim number;**
- b. **Claim description, (i.e. warranty, TSB, extended warranty, good will, etc);**
- c. **Vehicle owner or fleet name (and fleet contact person) and telephone number;**
- d. **VIN;**
- e. **Vehicle's make;**
- f. **Vehicle's model;**
- g. **Vehicle's model year;**
- h. **Repair date;**

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

- i. Vehicle mileage at time of repair;
- j. Whether the vehicle was re-purchased by BMW;
- k. If BMW repurchased the vehicle, explain in detail the reason for the re-purchase, or "n/a" if not re-purchased;
- l. Replacement part number(s) and description(s);
- m. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- n. Labor operation number;
- o. Problem code;
- p. Whether a loss of vehicle control is alleged;
- q. Concern stated by customer; and,
- r. Comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA."

Response:

The source of this information is our warranty claims database and is current as of 30 September 2010.

The number of paid warranty claims by Model and Model Year that may relate to allegations of loss of power steering assist is contained in Table 3.

Model	Model Year	Number of Warranty Claims
Cooper	2004	1,581
Cooper S	2004	1,285
Cooper	2005	926
Cooper S	2005	879

Table 3.

Attachment "WARRANTY DATA" on CD No. 1 contains the requested information.

Although not requested, we have also included vehicle production date.

6. Describe in detail the search criteria used by BMW to identify the claims identified in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles. State, by make [sic - model] and model year, the terms of the new vehicle warranty coverage offered by BMW on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that BMW offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

Response:

The warranty claims search criteria was initially based upon the NHTSA definition of "subject component" and our corresponding warranty claims system comprehensive problem code for that component, specifically the steering system. Using those parameters resulted in capturing all warranty claims information pertaining to the steering system in the subject vehicles.

The claims data was then reviewed in order to remove clearly unrelated / non-applicable claims, such as those pertaining to steering wheel cosmetics, the multi-function steering wheel, loose trim pieces, etc.

Warranty claims were then sorted / grouped into categories based upon warranty claim problem code. Those claims were then reviewed using a text-based search involving the NHTSA definition of "alleged defect" with the intention of capturing claims that may relate to allegations of loss of power steering assist. As a result, warranty claims that may relate to allegations of loss of power steering assist were retained.

The warranty claim problem codes and code descriptions are contained in Table 4.

Warranty Claim Problem Code	Code Description
32410114XX*	Vane/tandem pump/electric pump occasional malfunction
32410115XX*	Vane/tandem pump/electric pump permanent malfunction
32130234XX*	Steering gear stiff to move
32130214XX*	Steering gear occasional malfunction
32130215XX*	Steering gear permanent malfunction
32410199XX*	Vane/tandem pump/electric pump Fault code stored in diagnosis fault code memory (no warning lamp)]
0032630100	SIB #32-03-04

Table 4.

*The "XX" at the end of the warranty problem code denotes an alpha-numeric set of characters specific to a regular warranty claim, a goodwill warranty claim, or an extended warranty claim. As requested in response to 5(b), the specific claim type is contained in Attachment "WARRANT DATA" on CD No. 1.

Note, warranty claims pertaining to the service information bulletin that NHTSA included as a part of this information request were also captured. The specific problem code is noted in the last row of Table 4.

Information pertaining to labor operations, labor operation descriptions, problem codes, and problem code descriptions are contained in Attachment "WARRANTY DATA" on CD No. 1.

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

The terms of the New Vehicle Limited Warranty coverage for the subject vehicles is 4 years / 50,000 miles and includes coverage for the subject component.

MINI offers a "Certified Pre-Owned" (CPO) program for the subject vehicles. The CPO program provides certain warranty coverage (subject to exclusions and limitations) on the vehicle when purchased (via the CPO program) by a second (and any subsequent) owner(s) for an additional 2 years / 50,000 miles (whichever occurs first), after our original New Vehicle Limited Warranty coverage period of 4 years / 50,000 miles expires. With the addition of this CPO coverage, the vehicle is covered up to a maximum of 6 years / 100,000 miles (whichever occurs first).

MINI offers several extended service contract options for the subject vehicles which are known as the MINI "Extended Motorer Protection" (EMP) program. While CPO coverage is only available in one term as noted above, we have four EMP terms available for vehicles still covered by our New Vehicle Limited Warranty: 5 years / 100,000 miles, 6 years / 100,000 miles, 7 years / 70,000 miles, or 7 years / 100,000 miles (whichever occur first). All of these terms "wrap" the factory 4 year / 50,000 mile warranty, and will expire at 5, 6, or 7 years from the original in-service date of the vehicle, or 70,000 or 100,000 total vehicular miles, whichever comes first.

On these enrollments, coverage begins on the date of enrollment, and the covered mileage period is calculated by adding the term mileage coverage to the mileage on the vehicle as of the date of enrollment. For all of our current EMP offerings, once in place, coverage can be transferred to a second (and any subsequent) owner(s) in private-party to private-party changes in ownership, but, it does not apply (becomes "inactive") if the vehicle is traded in to a dealer, broker, or wholesaler.

- 7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that BMW has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that BMW is planning to issue within the next 120 days. For each such action, provide a list of the BMW vehicles affected and provide the following information:**
- a. Vehicle's make;**
 - b. Vehicle's model; and,**
 - c. Vehicle's model year.**

Response:

The source of this information is our technical service department and is current as of the date of this response.

BMW has not issued any applicable information except for the service information bulletin that NHTSA included as a part of the information request.

- 8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been**

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

conducted, are being conducted, are planned, or are being planned by, or for, BMW. For each such action, provide the following information:

- a. Action title or identifier;
- b. The actual or planned start date;
- c. The actual or expected end date;
- d. Brief summary of the subject and objective of the action;
- e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and,
- f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

Response:

The source of, and the data/information collection dates pertaining to, this information is as noted in the attachments.

Attachment "CONF-TA-1.pdf" in folder "Q8" on CD No. 2 provides a summary of the "actions" and provides the information requested in Questions 8(a) through 8(f).

All of the other attachments contained in folder "Q8" on CD No. 2, and referenced in Attachment "CONF-TA-1.pdf", consist of the pertinent test and analyses documentation, and account for the "actions" conducted.

9. Describe all modifications or changes made by, or on behalf of, BMW in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:
- a. The date or approximate date on which the modification or change was incorporated into vehicle production;
 - b. A detailed description of the modification or change;
 - c. The reason(s) for the modification or change;
 - d. The part number(s) (service and engineering) of the original component;
 - e. The part number(s) (service and engineering) of the modified component;
 - f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
 - g. When the modified component was made available as a service component; and,
 - h. Whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that BMW is aware of which may be incorporated into vehicle production within the next 120 days.

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

Response:

The source of this information is our various technical development departments and is current as of 30 Sep 2010.

Outlined below are the modifications to the power steering pump that were implemented in order to resolve the issue that is the subject of this information request.

Modification #1: EEPROM redesign.

- a. Available in vehicle production February 2005.
- b. Engineering release EFW89S, replacement of EEPROM by ROM164 with small EEPROM (redesign – ECU (Electronic Control Unit)).
- c. Permanent loss of power steering assist at vehicle ignition start.
- d. 6769759 / 6769757
- e. 6769759 / 6769961
- f. Yes; withdrawn from production/service February 2005.
- g. Available in service March 2005.
- h. Parts are compatible.

The attachments contained within sub-folder "MOD-1" in folder Q9 on CD No. 2 contain the requested information.

Modification #2: MOSFET production process optimization.

- a. Available in vehicle production July 2005 to June 2006.
- b. MOSFET production process optimization.
- c. Permanent loss of power steering assist, or continuous running of power steering pump, caused by contamination in the steering control module.
- d. 6769759 / 6769961
- e. 6769963 / 6769961
- f. Yes, withdrawn from production/service July 2005.
- g. Available in service July 2005.
- h. Parts are compatible.

The attachment contained within sub-folder "MOD-2" in folder Q9 on CD No. 2 contains the requested information.

* * *

BMW does not plan on any modification or change to the subject components that will be incorporated into vehicle production because production of this model ended in 2006.

10. State the number of each of the following that BMW has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale:

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

- a. Subject component(s); and,
- b. Any kits that have been released, or developed, by BMW for use in service repairs to the subject component/assembly.

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also identify by make, model and model year, any other vehicles of which BMW is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

Response:

The source of this information is our BMW AG parts database and is current as of 30 Sep 2010.

We believe that parts sales data has limited analytical value regarding its use in assessing the performance of the subject components because this data does not contain information pertaining to the reason for the sale of a particular part. Therefore, it is not possible from parts sales information to determine the number of these parts that have been installed in the subject vehicles for the purpose of repairing a vehicle in which the alleged issue is occurring.

Parts sales are depicted as totals per calendar year, and are irrespective of vehicle model year. Parts sales by vehicle model year are not available in the parts database. Therefore, parts sales by model year, for the specific model years pertaining to the subject vehicles (i.e., MY04-05), are not available. Accordingly, the table depicts parts sold for Model Years 2002 through 2006, not MY04-05. The sales figures represent the number of parts distributed from BMW AG to BMW NA. For various reasons, dealers will return unused parts, so the actual number of parts replaced in vehicles will be less than the numbers depicted in the table. The specific information is depicted in Table 5 and Table 6 for the power steering pump, and the power steering pump cooling fan, respectively.

Power Steering Pump		
Calendar Year	Part Number	Parts Sold
2004	6760248	36
2004	6760567	755
2004	6769758	12
2005	6769758	47
2004	6769759	660
2005	6769759	670
2005	6769962	113
2006	6769962	196
2005	6769963	2,295
2006	6769963	3,729
2007	6769963	51
2006	6778424	17
2007	6778424	37
2007	6778425	4,632
2008	6778425	4,345
2009	6778425	3,618
2010	6778425	4,077

Table 5.

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

Power Steering Pump Cooling Fan		
Calendar Year	Part Number	Parts Sold
2002	6761038	169
2003	6761038	602
2003	4026606	1,327
2004	4026606	1,509
2004	6768827	1,008
2005	6768827	4,525
2005	6774702	10
2006	6774702	1,780
2006	6777632	5,355
2007	6777632	1,457
2007	6781742	5,152
2008	6781742	7,386
2009	6781742	4,925
2010	6781742	5,026

Table 6.

The supplier information is as follows:

Power Steering Pump

ZF Lenksysteme GmbH
Richard-Bullinger-Straße 77
D-73527 Schwäbisch Gmünd
Norbert Schwarz / HQ
Tel.: 00-49-7171-31-2541

Power Steering Pump Cooling Fan

SPAL Automotive Srl
Via per Carpi n. 26/B
42015 Correggio (RE), Italy
Mr. Gubiotti
Tel.: 00-39-0522-731311

Other MINI models and model years that contain the subject system are as follows:

MINI Cooper / Cooper S – MY02-06
MINI Cooper Convertible / Cooper S Convertible – MY05-08

11. Describe, in detail, the function and operation of the power steering system in the subject vehicles. Provide pictures and/or diagrams with descriptive labels on the components.

Response:

The source of this information is a technical development department, a technical training department, and a supplier's technical service group, and is current as of the date of this response.

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

The attachments contained within folder Q11 on CD No. 2 contain the requested information.

12. Furnish BMW's assessment of TSB/CSC SI M32 03 04, including:

- a. **Explain the subject and objective of the corrective action;**
- b. **Explain the rationale for the scope of vehicles affected;**
- c. **Define the corrective action life expectancy; and,**
- d. **Explain BMW's confidence in the long-term effectiveness of the corrective action.**

Response:

The source of this information is our technical development group, and technical service department, and is current as of the date of this response.

- a. For the vehicles identified in the service information bulletin, which pertains to a service action / campaign, one of the wires for the power steering pump's cooling fan was miss-installed at the location of one of the pin-connectors within the associated electrical relay. As a result, the power steering pump's cooling fan would not be actuated, and therefore the power steering pump would not be cooled, if driving and environmental conditions warranted actuation of the fan. If this happened, then due to the design of the protective circuit of the power steering pump, the power assist function would be reduced as ambient temperatures increased. This could eventually lead to a loss of power steering assist. The intent of the service action was to correct the wiring/pin-connection for proper power steering pump cooling fan operation and therefore, proper power steering pump operation.
- b. Analyses led to the determination that MINI Cooper and Cooper S models, with option 508 (park distance control), which were produced between June 11, 2004 and August 26, 2004, were potentially affected due to a miss-installed wire in the power steering pump cooling fan electrical relay.
- c. The corrective action should remain functional during the vehicle's service life.
- d. BMW is confident that the corrective action will continue to function during the vehicle's service life.

13. Furnish BMW's assessment of the alleged defect in the subject vehicle, including:

- a. **The causal or contributory factor(s);**
- b. **The failure mechanism(s);**
- c. **The failure mode(s);**
- d. **The risk to motor vehicle safety that it poses;**
- e. **What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and,**
- f. **The reports included with this inquiry.**

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

Response:

Question 13(a)–(c):

As described in detail in other parts of our response, there are several different causal or contributory factors that could lead to a loss of power steering assist. A brief overview is as follows:

Permanent loss of power steering assist

- Due to a “checksum” error in the EEPROM electronics, this could prevent the power steering pump from functioning at the start of the driving cycle. The power steering pump would not switch on during the driving cycle.
- Due to certain problems in the MOSFET electronics, this could lead to a:
 - o Continuous running of the power steering pump; including after switching off the engine.
 - o Loss of power steering assist during the driving cycle; the pump would not switch on during the driving cycle, nor at the start of the next driving cycle.
- An interruption of the power supply could lead to a loss of power steering assist. The power steering pump would not switch on during the driving cycle and also would not switch on at the start of the driving cycle.

Temporary loss of power steering assist

- If the power steering pump cooling fan stopped working, then power steering assistance will be reduced, eventually leading to a shut-down of the pump, as designed, in order to protect itself from overheating. Specifically, when internal pump temperatures reach 100°C, power steering assist starts to decrease; at 115°C, power steering assist stops. After cooling down, power steering assist would restart dependent upon the corresponding temperature level.
- An under-voltage condition in the vehicle (low battery) could result in degradation of power steering assist.

BMW Response
to
NHTSA PE10-038
14 Dec 2010

Question 13(d):

We believe the issue that is the subject of this information request does not represent an unreasonable risk to motor vehicle safety; rather, it is a quality / customer satisfaction issue for the reasons set forth below:

Driving Test Analyses Indicate Effect is Characterized as Not-Safety-Related

Driving scenarios involving typical driver operation in the subject vehicles were performed and assessed for a typical driver. Driving scenarios such as constant/continuous circular driving, accessing/entering a circular drive, close turns on country roads, long-drawn-out curves on highways, etc. were conducted. In all cases, it was determined that the vehicle was controllable if a loss of power steering assist occurred to a typical driver. This was documented in response to Question 8 on CD No. 2.

Steering Effort Without Power Assist Satisfies European Regulations

European regulations require that vehicles be subject to specific requirements under conditions in which there is a failure of the power assisted steering system. The steering effort required, when the vehicle is tested without power assisted steering, is far below the maximum steering effort permitted pursuant to the European type approval regulations. Therefore, even in a situation involving complete loss of power assisted steering, the operator may only experience a minor increase in effort in steering the vehicle. This was documented in response to Question 8 on CD No. 2.

Effect may be Immediately Noticeable / Effect may be Temporary

Depending upon the mode in which a loss of power steering assist could occur, in some cases, the effect may be noticeable immediately upon initiating the driving cycle, while in other cases, the effect may be temporary. In other words, not all effects in which a loss of power steering assist could occur are sudden/surprising or permanent. Upon initiating a driving cycle, although drivers may notice an increase in steering effort from a customer satisfaction perspective, the driver's ability to quickly steer, as a result of a loss of power steering assist in these modes, is not suddenly compromised.

Field Experience

Given the significant exposure (by time, mileage, age of vehicle, etc.) of the subject vehicles in the field, we have not been made aware of one crash, injury, or fatality, that may relate to the issue that is the subject of this information request.

Vehicle Not Repurchased Solely Due to Power Steering

As noted in response to Question 3, no vehicle repurchase, if any, has occurred solely due to a matter that may relate to an allegation of loss of power steering assist. In other words, an allegation, if any, that may relate to loss of power steering assist, is not the sole reason for a vehicle repurchase

Accordingly, we believe that the loss of power steering assist is not considered to pose an unreasonable risk to motor vehicle safety.

**BMW Response
to
NHTSA PE10-038
14 Dec 2010**

Question 13(e)

Various warnings would be available to the driver as follows:

In cases involving the EEPROM "checksum" error, the driver would experience a small increase in steering effort from the start of the driving cycle.

In cases involving the power steering pump cooling fan, the driver would experience a decrease in power steering assist over time during the driving cycle.

In cases involving the MOSFET (continuous running pump) issue, a low battery warning message may illuminate in the vehicle's instrument panel at engine start.

Question 13(f):

Our technical assessment of the (NHTSA VOQ) reports included with inquiry is contained within our response to Question 8 on CD No. 2.

Additionally, it appears that there has been a "media effect" pertaining to NHTSA's receipt of VOQs. On the date of NHTSA's "Opening Resume," NHTSA had received 54 VOQs. On/about the date of the NHTSA Information Request to BMW, NHTSA had received 117 VOQs. The first VOQ was received in 2007. Therefore, it took approximately 3 years for NHTSA to receive 54 VOQs. After the opening resume was initiated, and the case was published by the media, NHTSA received 63 VOQs in approximately two weeks. It appears that the media had a significant influence upon the public complaint process. Therefore, perhaps a better gauge for the number and rate of public complaints would be to use the 54 complaints NHTSA had received by the time of the opening resume.

BMW Group

December 14, 2010

Scott Yon
Chief, Vehicle Integrity Division
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Ave., S.E.
Washington, DC 20590

Re: PE10-038

Dear Mr. Yon:

With this letter, BMW is responding to NHTSA's Information Request dated October 7, 2010 in the above captioned matter.

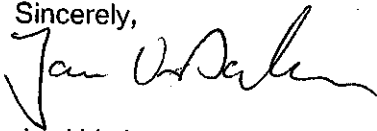
The attachments included with this letter comprise the non-confidential portion of BMW's response. As requested, BMW has repeated each question verbatim and provided our response accordingly. Our detailed responses are contained in the attachments.

Because a portion of our response is considered by BMW to be confidential, it is not being submitted to your office. Rather, as instructed, the confidential portion (CD No. 2) is being submitted to the Office of Chief Counsel, along with information supporting our request for confidentiality. We are attaching to this letter CD No. 1, the non-confidential portion of our response.

BMW understands that it is NHTSA policy to protect the privacy of individuals under Exemption 6 of the Freedom of Information Act, 5 USC Section 552(b)(6). Certain information requested by NHTSA, such as personal information pertaining to BMW vehicle owners that is contained in the attachments, although not claimed herein to be "BMW Confidential" pursuant to 5 USC Section 552(b)(4) (Exemption 4) and 49 CFR 512, should not be made public by NHTSA in accordance with Exemption 6.

Should you have any questions pertaining to the information enclosed with this letter, please contact me at (201) 571-5360, or Martin Rapaport of my staff at (201) 571-5208.

Sincerely,



Jan Urbahn
General Manager
Safety Engineering & Intelligent Transportation Systems

Attachments:

CD No. 1

Cc:

S. Wood, NHTSA (Office of Chief Counsel)

Company
BMW of North America, LLC

BMW Group Company

Mailing address
PO Box 1227
Westwood, NJ
07675-1227

Office address
300 Chestnut Ridge Road
Woodcliff Lake, NJ
07677-7731

Telephone
(201) 307-4000

Fax
(201) 571-5479

Website
bmwusa.com

