HONDA

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August 8, 2008

NVS-212mjl
PE08-026

Mr. Thomas Z. Cooper, Chief
Vehicle Integrity Division
Office of Defects Investigation
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
1200 New Jersey Avenue, S.E.
Washington, DC 20590

Dear Mr. Cooper:

Please find enclosed several additional documents that Honda is submitting as part of its final response to PE08-026. The documents listed in No. 1-2 will be submitted with a request for confidentiality to the Chief Counsel's office. Please find report, *Strut Failure + Pinch Detection* listed in No. 3 attached.

1. The remaining documents listed for question 8 on our response dated August 4, 2008.

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 conducted, are being conducted, are planned, or are being planned by, or for, Honda. This includes but is not limited to any and all actions by the subject component manufacturer relating to the alleged defect. For each such action, provide the following information:

Response:
Please see the files listed below, each of which has been included in in Attachment Q8 on enclosed CD. These documents include our in-house identification of concerns related to model year 2005 through 2007 Honda Odyssey power tailgate strut failures and all actions taken to reduce the failure rate taken by the supplier for these components, Stabilus. Please note that Honda contends that the premature wear of these gas struts does not pose a risk to motor vehicle safety, as we have previously explained.

Additional Response:

050217 Stabilus Report 1 from US
050614 Meeting Memo
050614 Stabilus Report 2 from Germany
050622 Meeting memo
050622 Stabilus Report 3 from Germany
050624 Stabilus Report 4 from Germany
050628 Meeting memo
050713 Meeting memo
050722 Stabilus Report 5 from Germany
050723 Stabilus Report 6 from Germany
051222 Stabilus Report 7 from Germany
060106 Stabilus Report 8 from Germany
060113 Stabilus Report 9 from Germany
080710 Stabilus Report 10 from US

Pending request for confidentiality

2. *080710 Stabilus Report 10 from US* which is listed as part of our response to question 8 was originally submitted to your office on July 23, 2008. We are withdrawing *Report 10* because it will be submitted with a request for confidentiality to the Chief Counsel's office.

3. The presentation *Strut Failure + Pinch Detection* is being submitted in response to questions 18-22. It accompanies the videos submitted on July 31, 2008.

Sincerely,

AMERICAN HONDA MOTOR CO., INC.

William R. Willen
Managing Counsel
Product Regulatory Office

WRW:nis

Attachments

cc: Chief Counsel

Attachment Q18-22

Strut Failure + Pinch Detection

Q1 : Why does the Odyssey power tailgate default to manual mode after the second time it detects an obstacle in the closing direction?

A1 : The Odyssey power tailgate switches to manual control after the second time it detects an obstacle in the closing direction for the following reasons:

1. Honda understands that the power output of the vehicle's 12-volt battery will decline if the power tailgate continues the *opening-closing-obstacle detection cycle* too many times. Eventually, this would cause the battery to lose power, resulting in a sudden loss of electrical control of the power tailgate and an inability to restart the vehicle.
2. The Honda Odyssey power tailgate control logic exhibits obvious and easily recognized differences from normal operation to the user when detecting an obstacle during a *strut failure mode* closing operation.
    - The first time an obstacle is detected in strut failure closing mode the tailgate reverses, sounds a continuous beeping alarm, then a second closing operation is started. This allows any person in the tailgate area time to get away from the tailgate before it closes a second time.
    - If an obstacle is detected a second time while the power tailgate is closing, the power tailgate clutch is released and the power tailgate is allowed to rest on the obstacle. The tailgate is not allowed to free fall, as the system must sense the resistance of an obstacle a second time before the clutch is allowed to release.
    - The multiple audible and physical contact warnings to the user and repeated operations provide more than enough information to the user that the tailgate is operating abnormally and that they should move away from the power tailgate and use caution.
3. In the development of the power tailgate system for the Odyssey, we determined that releasing the power tailgate clutch after encountering the same obstacle a second time during a closing operation would expose the obstacle to less physical contact than repeatedly closing the tailgate onto the object under power.
4. Repeated cycling of the power tailgate will eventually cause the battery power to drop to a level where the clutch can no longer be activated, which could result in the tailgate falling unexpectedly from an unknown point. Repeated cycling of the power tailgate could eventually cause a temperature increase in the motor and clutch that could result in the tailgate falling unexpectedly.

Q2 : NHTSA has asked Honda about the operation of the power tailgate's sensing ability when one or both of the gas struts are failing or have failed. Under normal operation, when the struts are functioning as designed, if the power tailgate senses an obstacle while closing it will re-open and remain open, requiring the user to initiate a new closing operation.

NHTSA asked why the tailgate does not return to the fully open position when an obstacle is sensed in the strut failure fail-safe mode.

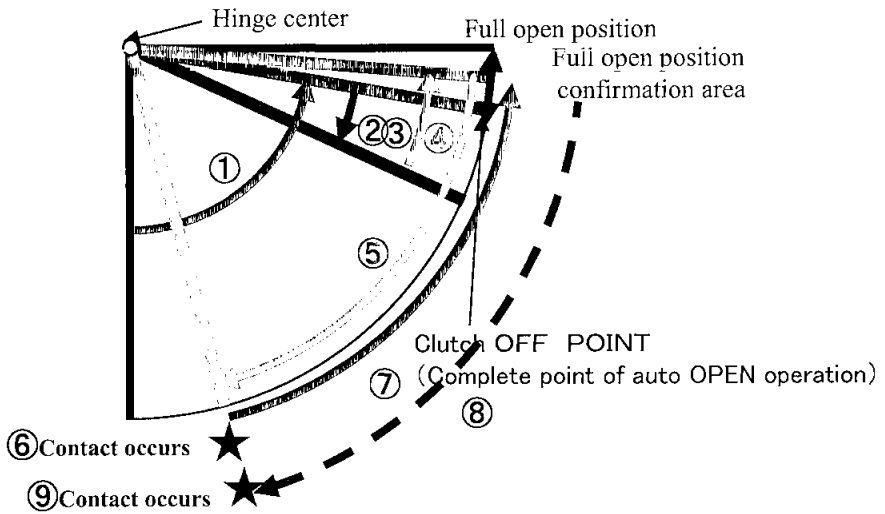
A2 : In this condition, the power tailgate is closing in fail-safe mode due to detection of a strut failure. The power closing operation is interrupted by the pinch sensor which detects an obstacle in the way of the power tailgate. This causes the power tailgate to re-open under power to the near full-open position, at which point the clutch is released. Upon releasing the clutch, the tailgate will drop slightly due to the failed strut, causing the tailgate to close under power. If an obstacle is contacted a second time the clutch will be released to prevent repeatedly striking the obstacle, reducing battery power to the point that the power tailgate will fail and the vehicle may not be restarted, and preventing damage to the power tailgate clutch and motor that could result in unexpected failure.

It may appear as the following sequence:

Falling detection→⑤ CLOSE operation → ⑥Contact sensing →⑦ Reverse to open operation → **⑧Contact sensing** → ⑨Reverse to close→ ⑩ Contact sensing→ Manual open

Normal condition

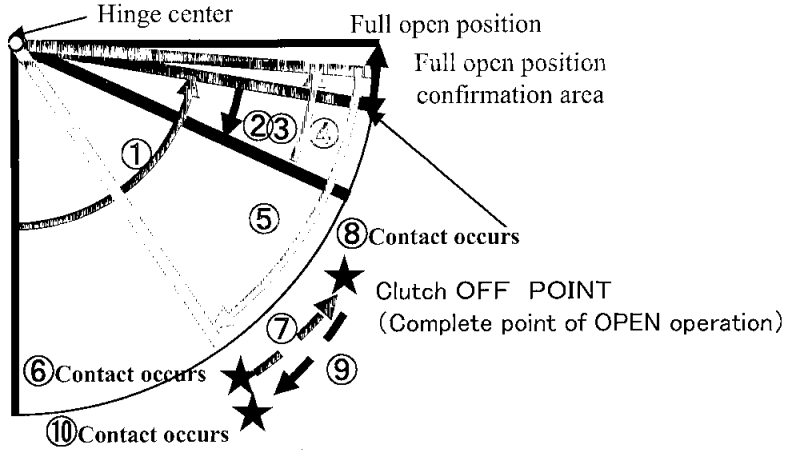
Reverse function in closing operation during strut failure detection
(No contact on the way of reverse to open)



⑥Contact occurs⇒⑦Rise toward the full open position confirmation area⇒
⑧Then, close operation⇒⑨Contact occurs during closing
⇒system ends

As seen in attached video (slide 3)

Reverse function in closing operation during failure detection
(Contact is occurred (sensed) on the way of reverse to open)



⑥Contact occurs⇒⑦Rise toward the full open position confirmation area⇒
⑧Contact occurs⇒⑨Then, close operation⇒⑩Contact occurs during closing
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