

May 29, 2009

NVS-213swmc
EA09-001

2009 JUN -8 PM 1:36

Ms. Kathleen C. DeMeter, Director
Office of Defects Investigation
U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
1200 New Jersey Ave., SE
Washington, DC 20590

Dear Ms. DeMeter:

In reply to your letter dated March 27, 2009, we are submitting our response regarding the alleged failure of the ignition interlock system in 2002-04 Accord and Civic vehicles and 2003-04 Element and TL vehicles.

1. State, by model and model year, the number of peer vehicles Honda has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Honda, state the following:
 - a. Vehicle identification number (VIN);
 - b. Model;
 - c. Model Year;
 - d. Date of manufacture;
 - e. Date warranty coverage commenced; and
 - f. 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, titled "PRODUCTION DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

Response:

The data elements "a" through "f" are provided in the file titled "PRODUCTION DATA" on the enclosed CD. There are separate tables for each model.

Model	Model Year	Sales
Accord	2004 (inc. 2-dr, 4-dr & V6)	358,551
Civic	2002 (inc. 2-dr & 4-dr)	241,367
	2003 (inc. 2-dr, 4-dr & Hybrid)	233,794
	2004 (inc. 2-dr, 4-dr & Hybrid)	234,415
Element	2003	67,940
	2004	49,563
TL	2003	93,893
	2004	69,117

2. State, by model and model year, the number of each of the following, received by Honda, or of which Honda is otherwise aware, which may relate to the alleged defect in the subject and peer vehicles:
- Consumer complaints, including those from fleet operators;
 - Field reports, including dealer field reports;
 - 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;
 - 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;
 - Property damage claims; and
 - Third-party arbitration proceedings where Honda is or was a party to the arbitration; and
 - Lawsuits, both pending and closed, in which Honda 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 Honda'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 total number of reports for items "a" through "g" are stated in the table below. See Attachment Q2 on enclosed CD for summary description of items "c" through "g". Honda did not identify any relevant reports for items "d" and "f".

Note: Honda does not have any fleets.

Model	Model Year	A Owner/ Fleet Reports	B Field/ Dealer Reports	C Crash, Injury, Fatality Reports	D Fire	E Property Damage	F Third-Party Arbitration	G Lawsuits
Accord	2002	90	6	17	0	7	0	1
	2003	98	13	15	0	4	0	3
	2004	44	11	0	0	0	0	0
Civic	2002	22	1	0	0	0	0	1
	2003	23	6	2	0	0	0	0
	2004	18	7	1	0	0	0	0
Element	2003	16	2	1	0	0	0	0
	2004	8	1	0	0	0	0	0
TL	2003	0	0	0	0	0	0	0
	2004	4	3	0	0	0	0	0

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:
- Honda's file number or other identifier used;
 - The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
 - Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
 - Vehicle's VIN;
 - Vehicle's model;
 - Vehicle's model year;
 - Vehicle's mileage at time of incident;
 - Incident date;
 - Report or claim date;
 - Whether a crash is alleged;
 - Whether property damage is alleged;
 - Number of alleged injuries, if any; and
 - Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2000, or a compatible format, titled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

Response:

The data elements "a" through "m" are provided in the file titled "REQUEST NUMBER TWO DATA" on the enclosed CD. There are separate tables for the following 4 categories: 1) Remove key, not in PARK; 2) Key hard to remove or is stuck; 3) Can't turn key; and 4) Vehicle rollaway, key removed unknown.

Source(s): Customer Relations, Tech Line, Field Reports, Claims and Lawsuits.
As of: 4/29/09

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 Honda used for organizing the documents. Describe in detail the search criteria used by Honda to identify the claims identified in response to Request No. 2.

Response:

See Attachment Q4 for copies of all documents.

The documents are organized by category (i.e., consumer complaints, field reports, etc.) and within each category the documents are sub-categorized: 1) Remove key, not in PARK; 2) Key hard to remove or is stuck; 3) Can't turn key; and 4) Vehicle rollaway, key removed unknown. The documents in each sub-category are organized by model year then the last six digits of the VIN.

Search criteria

Complaints: Cases were pulled based on specific model, model year and the following labor codes: 218 Automatic Transmission; 725 Ignition Switch; and 743 Shift Interlock.

The text was reviewed for each case to identify alleged failure of the ignition interlock system.

Field Reports: Our Field Report submission is comprised of Field Quality Reports and Techline reports. Field Quality Reports were pulled based on specific model and model year and each report was reviewed to identify alleged failure of the ignition interlock system. Techline reports were pulled based on model, model year and any Techline code beginning with 88, which is associated with Locks/keys. The text of each Techline report was reviewed to identify alleged failure of the ignition interlock system.

Claims and notices: Claims and notices were pulled based on specific model, model year and key words "key" and "ignition". The text was reviewed to identify alleged failure of the ignition interlock system.

Source(s): Customer Relations, Tech Line, Field Reports, Claims and Lawsuits.
As of: 4/29/09

5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Honda to date that may relate to the alleged defect in the subject and peer vehicles (including all claims that may relate to the replacement of service part numbers beginning with "35100*" or "06350*" or "06351*" or "38200*" in the subject and peer vehicles): warranty claims; extended warranty claims; claims for goodwill 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. Provide all claims, unfiltered for alleged defect. Supply any applicable filtered claims not previously submitted.

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

- a. Honda's claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Vehicle model;
- e. Model Year;
- f. Repair date;
- g. Vehicle mileage at time of repair;
- h. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- i. Labor operation number;
- j. Problem code;
- k. Replacement part number(s) and description(s);
- l. Concern stated by customer; and
- m. Comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2000, or a compatible format, titled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table that provides further details regarding this submission.

Response:

The total warranty counts, all unfiltered warranty claims, for EA09-001 and RQ08-006 are provided in the table below. The data elements "a" through "m" are provided in the file titled "WARRANTY DATA" on the enclosed CD which contains two tables: 1) EA09-001 and 2) RQ08-006.

Model	Model Year	EA09-001				RQ08-006	
		Warranty Claims	Goodwill Claims	Extended Warranty	Vehicle Service Contract	Warranty Claims	Goodwill Claims
Accord	2002	196	53	0	0	189	49
	2003	525	84	0	0	498	76
	2004	130	29	0	0		
Civic	2002	122	14	0	0		
	2003	368	58	0	0		
	2004	92	16	0	0		
Element	2003	74	56	0	0		
	2004	22	8	0	0		
TL	2003	69	4	0	0		
	2004	41	1	0	0		

Source(s): Warranty claim data.
 As of: 4/29/09

6. Describe in detail the search criteria used by Honda 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.

Response:

Search Criteria: Using warranty data for subject and peer vehicles, claims were pulled based on replacement part numbers beginning with 35100 and 06350. All claims, unfiltered for the alleged defect, are submitted.

7. Produce copies of all service, warranty, and other documents that may relate to the alleged defect in the subject or peer vehicles, that Honda 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 Honda is planning to issue within the next 120 days.

Response:

See Attachment Q7 for the following: 1) Service Bulletin 05-007, Safety Recall: Ignition key is removable with the shift lever out of park; 2) Honda Service News, Dec. 2005, Can't turn ignition switch? Check for locked steering; and 3) Acura Service News, Dec. 2005, Can't turn ignition switch? Check for locked steering.

Currently no communication is planned within the next 120 days.

8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that may relate to the alleged defect in the subject or peer vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Honda. For each such action, provide the following information:
- Action title or identifier;
 - The actual or planned start date;
 - The actual or expected end date;
 - Brief summary of the subject and objective of the action;
 - Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
 - 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:

See Attachment Q8 for Honda Lock's analysis.

- 02M Accord Interlock Failure Investigation Results of Returned Parts*
 - Analysis began following 2007/08/29 and 2008/05/12 occurrences*
 - Report completed 2009/02/11*
 - The analysis of two parts collected by NHTSA resulting from HOTLINE reports was completed using known methods to assess the electrical and mechanical components.*
 - Honda Lock Corporation.*
 - The electrical components, including the solenoid, of both lock mechanisms were functioning properly at the time of the tests. Both mechanisms allowed removal of the ignition key by defeating the interlock device with a small application of rotational torque. The mechanical interlock components showed damage consistent with prior application of extreme force while in the interlocking mode, as well as significant wear. The combination of damage and wear seems to be the cause of the interlock system being defeated with minimal force.*
9. Describe all modifications or changes made by, or on behalf of, Honda in the design, material composition, manufacture, quality control, supply, or installation of the subject system, for the subject or peer vehicles, from the start of production to date, which may relate to the alleged defect in the subject or peer vehicles. For each such modification or change, provide the following information:
- The date or approximate date on which the modification or change was incorporated into vehicle production;
 - A detailed description of the modification or change;
 - The reason(s) for the modification or change;
 - The part numbers (service and engineering) of the original component;
 - The part number (service and engineering) of the modified component;
 - Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
 - When the modified component was made available as a service component; and
 - Whether the modified component can be interchanged with earlier production components.

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

Response:

9a-h. Responses included in Attachments Q9A – Q9D

10. State the number of each of the following that Honda has sold that may be used in subject or peer vehicles by component name, part number (both service and engineering/production), and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable):
- Subject component; and
 - Any kits that have been released, or developed, by Honda for use in service repairs to the subject component/assembly.

For each component part number, state by model, model year and production volume all vehicles using the part, and provide the supplier's name, address, and point of contact (name, title, and telephone number).

Response:

- See Attachment Q10A for parts demand history for the Cylinder Set and Attachment Q10B for parts demand history for the Steering Lock Assembly. Honda retains monthly parts demand history for two years and annual history for five years. Please note that the parts history was not available for all applicable part numbers.*
 - No kit has been released or developed by Honda for use in service repairs to the subject component/assembly.*
11. Describe, and provide copies of all documents relating to, all communications between Honda and subject component suppliers that relate to the field performance, durability or design countermeasures for the ignition interlock system in the subject vehicles, including the process that led to the development of the redesigned switch used in the MY 2004 Accord vehicles. Provide a chronological summary of the communications and organize the documents accordingly.

Response:

There is no record of communication between Honda and the suppliers of the components involved in this inquiry. Additionally, there are no documents relating specifically to the interlock system for this model after it was introduced in the market.

Attachment Q11 includes the certification documents for the development of the immobilizer anti-theft systems for the:

- 1998 Honda Accord*
- 2001 Honda Civic*
- 2003 Honda Accord*

For reference, the ignition switch from the 2003 Japan Accord was utilized in the 2004 U.S. Accord.

12. Describe, and provide copies of all documents relating to, all internal communications within Honda that relate to the field performance, durability or design countermeasures for the ignition interlock system in the subject vehicles, including the process that led to the development of the redesigned switch used in the MY 2004 Accord vehicles. Provide a chronological summary of the communications and organize the documents accordingly.

Response:

There is no record of any communications within Honda related to the field performance, durability or design countermeasures for the ignition interlock system, as no design changes were made.

Attachment Q12 includes test reports for the following models during their development:

- 1998 Accord
- 2001 Civic
- 2003 Accord

For reference, the ignition switch from the 2003 Japan Accord was utilized in the 2004 U.S. Accord.

13. Please provide the following additional information regarding "Document 1, QIS SCWA-030618-04," provided in Attachment #Q8 of Honda's November 24, 2008 letter responding to ODI's information request letter for RQ08-006:
- a. Explain in detail the basis for the "Driver Sequence" analysis of a potential mechanism for interlock lever deformation that was described in the Cause Analysis section on Page 2 of the Quality Improvement Sheet (QIS);
 - b. Clarify whether the "inner joint" referenced in the Cause Analysis is the inner collar recess that is blocked by the lever during interlock operation;
 - c. Provide copies of the photographs on Page 1 of the QIS that are at least as good as those contained in the original report;
 - d. Provide two samples of parts (lever and "inner joint") exhibiting the condition described in the QIS Cause Analysis;
 - e. Explain how the lever deformation mechanism described in the report affects Honda's durability test results (including a detailed description of the procedures used in the durability testing and whether they can reproduce the deformation mechanism described in this QIS);
 - f. Describe all factors that could contribute to partial lever "disengagement" during normal ignition switch operation (i.e., NOT in interlock mode) as described in the QIS, including greater elaboration of the factors that could contribute to occurrences of "inner joint digs into the lever,;"
 - g. Explain in detail the reasons for the design countermeasure described in the QIS, including the differences between the 9Nm lever and the 15Nm lever;
 - h. Describe how the lever strength is measured for the 9Nm and 15Nm levers and how this relates to Honda's use of the terms "blocking torque" and "slip out torque;"
 - i. Describe all differences between the ignition switches and ignition interlock systems in the pre-countermeasure variants of the models listed in the "Countermeasure Contents" section of the QIS (Accord, Civic and Element);" and
 - j. State the maximum reduction in interlock overlap margin that Honda believes could result from the deformation mechanism described in the QIS and provide a detailed explanation of the basis for Honda's assessment.

Response:

- a. *We had originally judged that the operating margin of the interlock device would not be affected by deformation of the lever when we prepared the Quality Improvement Sheet (QIS). See Attachment Q13A for a description of the defect occurrence mechanism.*
- b. *The reference to the inner collar and inner joint are different for the S84 and S5A ignition switches. Please refer to Attachment Q13B page 1 for detailed illustrations of these two types of ignition switches for clarification.*
- c. *Additional and expanded images are included in Attachment Q13B page 2.*
- d. *Sample parts are being provided separately.*
- e. *This symptom of deformed mechanisms has not been reproduced on new parts in our durability testing. However, the parts from the reproduction tests do not meet our durability testing. Attachment Q13A details the procedures used in the reproduction tests of this system.*
- f. *The symptom of the inner joint deforming the lever does not occur in normal ignition switch operation. Attachment Q13A includes a description of the occurrence mechanism.*
- g. *These design changes were applied to address market complaints such as the warm key resulting from the activated solenoid. These changes were not related to the lever force resistance specifications. At the same time the material of the lever was changed from aluminum to zinc for a cost reduction. See Attachment Q13C.*
- h. *Both blocking torque and slip-out torque are references to torque applied to the interlock lever. See Attachment Q13B page 3 for the method of measuring lever strength.*
- i. *The ignition switches and interlock systems prior to any countermeasures are depicted in Attachment Q9A.*
- j. *Please see our response to Q13a, as the response to this question is the same.*

14. Produce three each of the following ignition switch assembly components:

- a. 2002 OE interlock lever;
- b. 2002 recall repair interlock lever (as in PN 06351-S84-000);
- c. 2003 OE lever with the aluminum and resin mold; and
- d. 2004 OE SEA style lever (strength increased from 9 Nm to 15 Nm).

Response:

Sample parts 14a-d will be provided separately.

15. Provide the following information for the subject components used in subject and peer vehicles in the United States market:

- a. The material specifications for the ignition switch body, cylinder, spring pin, inner collar, interlock lever shaft and interlock lever;
- b. The dimensions and tolerances for the ignition switch body, cylinder, spring pin, inner collar, interlock lever shaft, and interlock lever;
- c. Compare the strength and durability of the key used in the subject vehicles with ignition interlock system, including the maximum torque that the key can be turned without cracking or separating and the number of cycles the key can be turned at 2.6 Nm;
- d. The specified minimum lever overlap margins;
- e. A detailed description of how the lever overlap margins are measure or calculated;

- f. The distributions of initial lever overlap margin (state the mean and standard deviation values for each distribution);
- g. Identify all usage/wear conditions that can reduce lever overlap margin in service and state how they effect overlap margin (mechanism and maximum reduction in overlap margin); and
- h. List any mid-year changes to any specifications or dimensions to these components.

Response:

15a-f. All requested information is provided in Attachment Q15.

15g. See Attachment Q13A for our response to Question 15g regarding the S5A type ignition switch.

15h. No mid-year design changes occurred. The only change that occurred was the lever shaft press fit height manufacturing target change referenced in Attachment Q9C.

16. Furnish Honda's assessment of the alleged defect in the subject vehicles, 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.

Response:

Regarding the S84 type ignition switches as applied to the 2002 Honda Accord and 2003 Acura TL:

- a. *When the ignition key is rotated from the run (II) position with heavy force while the interlock system is preventing the ignition key from being removed, the interlock lever may gradually become worn if this condition is repeated many times. This causes the lever's working margin to gradually decrease as it becomes worn. If this continues the symptom identified in recall 05V-025 may be observed. This type of failure relies on repeated misuse after the initial misuse resulted in the damage to the interlock system described above.*
- b. *The failure mechanism for this symptom is detailed in Attachment Q15.*
- c. *The failure mode is that the ignition interlock system no longer prevents removal of the ignition key when the transmission gear selector is in any position other than Park.*
- d. *If the vehicle has been parked on a slope and the driver has failed to place the transmission gear selector in the Park position and has not set the parking brake, the vehicle may roll out of the position in which it was parked. The actual risk to motor vehicle safety depends on many additional factors including the grade of the slope, the speed at which the driver exits the vehicle and their ability to detect that the vehicle is not securely parked as well as what is in the immediate vicinity of the subject vehicle.*
- e. *Depending on the slope of the area in which the vehicle has been parked, the vehicle may begin to roll immediately, which could indicate to the driver that neither the transmission gear selector has been placed in the Park position nor has the parking brake been set. Similar to the answer to 16 d., this response depends greatly*

on the ability of the driver to detect this condition as well as other environmental factors.

- f. *Honda's assessment of the reports included in this response may be found in Attachment Q13 of RQ08-006.*

Regarding the S5A type ignition switches as applied to the 2003 Honda Accord, 2002 2003 Honda Civic and 2003-2004 Honda Element:

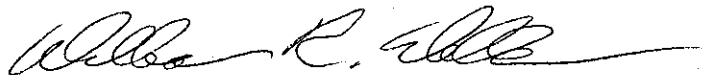
- a. *An electric solenoid is used to activate the interlock lever within the interlock device, engaging the interlock system when the gear selector is in any position other than Park. If the driver attempts to switch the engine off while the gear selector is in a position other than Park while the interlock lever is engaged (activated) and enough force is applied to the key, it could result in electrical power to the solenoid being cut. This requires that the ignition key be rotated past the accessory position and forced partially toward the OFF position. Or, if the driver then realizes that the key cannot be removed because the gear selector is not in Park and they then move the gear selector to Park, which causes electrical power to the solenoid being cut, however, it is possible that enough mechanical force was applied to the key to result in friction between the interlock lever and the key cylinder causing the interlock lever to remain partially engaged by the key cylinder. If the interlock lever is almost completely engaged, the driver will be unable to remove the key without breaking the key. If the interlock lever is only slightly engaged the rotational force on the key cylinder will overcome the interlock lever and the interlock system will continue to work correctly. However, if the interlock lever remains engaged somewhere in a narrow range between nearly fully engaged and nearly fully released, and the driver applies enough force (something greater than 3 Newtons) the interlock lever tip can be deformed and overcome. If this happens, the driver will have damaged the interlock system resulting in failure the system due to the driver's misuse. We expect that because the driver is aware of the damage they have caused this explains the possibility that the warranty rate may not reflect the failure rate. Because this failure requires the driver to apply an unusually high amount of force to the ignition key two times as well as a complex sequence of events we do not consider this a defect or an unreasonable risk to motor vehicle safety. Accordingly, we anticipate a low projected failure rate.*
- b. *The failure mechanism for this symptom is described in detail in Attachment Q13.*
- c. *The failure mode is that the ignition key interlock system no longer prevents the ignition key from being removed when the transmission gear selector is in any position other than Park.*
- d. *If the vehicle has been parked on a slope and the driver has failed to place the transmission gear selector in the Park position and has not set the parking brake, the vehicle may roll out of the position in which it was parked. The actual risk to motor vehicle safety depends on many additional factors including the grade of the slope, the speed at which the driver exits the vehicle and their ability to detect that the vehicle is not securely parked as what is in the immediate vicinity of the subject vehicle.*
- e. *Depending on the slope of the area in which the vehicle has been parked, the vehicle may begin to roll immediately, which could indicate to the driver that neither the transmission gear selector has been placed in the Park position nor has the parking brake been set. Similar to the answer to 16 d., this response depends greatly on the ability of the driver to detect this condition as well as other environmental factors.*

Ms. Kathleen DeMeter
NVS-213swmc / EA09-001
May 29, 2009
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f. *Honda's assessment of the reports included in this response may be found in
Attachment Q13 of RQ08-006.*

Sincerely,

AMERICAN HONDA MOTOR CO., INC.



William R. Willen
Managing Counsel
Product Regulatory Office

WRW:nis

Attachments