



CHRYSLER
INFORMATION Redacted PURSUANT TO THE FREEDOM OF
INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6)

December 9, 2011

Mr. D. Scott Yon, Chief
Vehicle Integrity Division, NVS-214
U.S. Department of Transportation

National Highway Traffic Safety Administration (NHTSA)
Office of Defects Investigation (ODI)
Room W48-304
1200 New Jersey Avenue SE
Washington, D.C. 20590

Reference: NVS-212pco; PE11-035

Dear Mr. Yon:

Attached is Chrysler Group LLC's ("Chrysler") response to questions 7 through 13 of the referenced inquiry. Additionally, as stated in Chrysler's prior partial response dated November 11, 2011, in reference to questions 1 through 6 of the referenced inquiry, Enclosure 6: Extended Service Contract – Conf Bus Info has been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment. Furthermore, Enclosure 9: Assessments – Conf Bus Info, Enclosure 10: Change History – Conf Bus Info, and Enclosure 12: Part Sales – Conf Bus Info have also been submitted under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

In performing the analysis and reaching conclusions, and by providing the information contained herein, Chrysler is not waiving its claim to attorney work product and attorney-client privileged communications.

Chrysler has conducted a reasonable and diligent search of its data repositories for complaints related to the alleged conditions. Chrysler's review of field data regarding the subject population of 2002 - 2004 MY KJ vehicles demonstrates there are no inadvertent air bag deployments in the 2004 MY KJ vehicles. The 2004 MY KJ vehicle incorporated a new ORC module design. As a result, Chrysler believes that all further investigations and assessments should focus on the 2002 - 2003 MY KJ vehicle population.

Chrysler has yet to determine the root cause of the inadvertent air bag deployments in the 2002 - 2003 MY KJ. Chrysler has not determined if the inadvertent airbag deployments were caused by conditions internal or external to the vehicle. Accordingly, Chrysler has yet to determine whether a safety related defect exists. Chrysler is continuing to investigate the causes of the inadvertent airbag deployments in the 2002 - 2003 MY KJ.

Sincerely,

David D. Dillon

Attachment and Enclosures

Preliminary Statement

On April 30, 2009 Chrysler LLC, the entity that manufactured and sold the vehicles that are the subject of this Information Request, filed a voluntary petition for relief under Chapter 11 of Title 11 of the United States Bankruptcy Code.

On June 10, 2009, Chrysler LLC sold substantially all of its assets to a newly formed company now known as Chrysler Group LLC. Pursuant to the sales transaction, Chrysler Group LLC assumed responsibility for safety recalls pursuant to the 49 U.S.C. Chapter 301 for vehicles that were manufactured and sold by Chrysler LLC prior to the June 10, 2009 asset sale.

On June 11, 2009, Chrysler LLC changed its name to Old Carco LLC. The assets of Old Carco LLC that were not purchased by Chrysler Group LLC, as well as the liabilities of Old Carco that were not assumed, remain under the jurisdiction of the United States Bankruptcy Court – Southern District of New York (*In re Old Carco LLC, et al.*, Case No. 09-50002).

Note: Unless indicated otherwise in the response to a question, this document contains information through Oct 4, 2011, the date the information request was received.

7. Provide a list of all air bag fault codes that may lead to an inadvertent deployment of the frontal air bags for the subject vehicles.

- A7. Chrysler's analysis of CAIRs and VOQs indicates that the illumination of the driver's airbag lamp may precede an inadvertent deployment of passenger and/or driver airbag modules. However, the illumination of the driver's airbag lamp does not indicate that an inadvertent airbag deployment may ever occur.

The list of all Diagnostic Trouble Codes (DTC's) that could result in the illumination of the driver airbag lamp is provided in Enclosure 7 – Diagnostic Trouble Codes.

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

- A8. There are no dealer communications related to the alleged defects or any planned to be released in the next 120 days.

- 9. 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, Chrysler. 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.

A9. The requested assessments are listed below and for each assessment the appropriate enclosures are referenced as applicable.

Assessment 1: CAIR Complaint Analysis

Start Date	End Date	Engineering Group Responsible
10/12/2011	11/17/2011	Chrysler Product Investigations & Recall Administration

CAIR Complaint Analysis:

Review CAIRs and associated inspection reports for details surrounding the alleged inadvertent airbag deployments. Look for similarities in vehicle mode, vehicle build, environmental conditions, mileage, days in service, etc.

CAIR Complaint Analysis Results:

- There were 42 unique VINs in 2002 MY (20 C/100,000) alleging an inadvertent airbag deployment.
- There were 41 unique VINs in 2003 MY (23 C/100,000) alleging an inadvertent airbag deployment.
- Of the 83 unique VINs, 38 reported a driver airbag deployment and 45 reported driver & passenger airbag deployments.
- CAIR records indicate that the vehicle mileage at the time of the date reported ranged between approximately 1000 miles, up to 160,000 miles.
- The CAIR data does not indicate any trends relative to states or time of year (i.e. environmental factors).
- The vehicle build dates of the CAIRs show the 83 unique VINs are distributed from June 7, 2001 thru March 19, 2003. There were 53,388 2003 MY year vehicles built after March 19, 2003, none of which to date have reported an alleged inadvertent airbag deployment.
- Customer comments do not indicate any driving trends that lead up to the alleged inadvertent airbag deployments. It was noted that some vehicles were idling in Park, while others were in various stages of motion in Forward or Reverse gears.

CAIR Complaint Analysis Summary:

- There are no trends in the CAIR data that indicate specific quality, reliability, or durability issues.
- There are no identifiable trends in the customer's driving habits at the time of the alleged inadvertent airbag deployments.

Assessment 2: CAIR Complaint Subject Component (ORC) Analysis

Start Date	End Date	Engineering Group Responsible
3/3/2005	Pending	Chrysler Product Investigations & Recall Administration TRW Engineering

CAIR ORC Analysis Objective:

Visual examination of ORC removed from CAIR vehicles, to retrieve events and/or crash records from PTM (Plant Test Mode for TRW diagnostics) Screen and EEPROM (Electrically Erasable Programmable Read- Only Memory). Determine if customer's allegation of inadvertent airbag deployment was valid.

CAIR ORC Analysis Results:

- ORC's were retrieved from CAIR vehicles, where an inadvertent airbag deployment was alleged, and were provided to the supplier (TRW) for analysis.
- External examination did not reveal damage or corrosion to case or connector pins.
- Internal examination showed that one of the two squib ASICs (Application Specific Integrated Circuit) attached to the printed circuit board showed evidence of electrical over stress (EOS).
- ASIC U3 controls the passenger airbag 1st & 2nd stages and the driver airbag 2nd stage. ASIC U10 controls the driver airbag 1st stage and driver/passenger retractor pretensioners (if equipped).
- Where module data was available, no evidence of crash records were found.
- Product change levels of the ORCs retrieved from CAIR complaint vehicles ranged from AG to AI change levels.

CAIR ORC Analysis Summary:

- Squib ASIC U3 or U10, which control driver and passenger frontal airbags and seatbelt pretensioners, exhibit evidence of an EOS of unknown origin.
- When a U3 or U10 ASIC EOS event occurs, the driver's airbag partially deploys, due to either stage 1 (80% bag) or stage 2 (20% bag) being activated.
- The test reports summarizing the analysis of the ORCs removed from CAIR complaint vehicles are listed in Enclosure 9 – Assessments - Conf Bus Info, CAIR ORC Analysis.

Assessment 3: CAIR Vehicle System Testing

Start Date	End Date	Engineering Group Responsible
8/11/2005	Pending	Chrysler E/E Systems Engineering, TRW Engineering

CAIR Vehicle System Testing:

Test vehicles as follows:

- IGNP (Ignition), VDD (Positive Supply Voltage), VFIRE (Voltage to ASIC for firing Squibs) were monitored during different load variations.
- Squib lines monitors during different load variations.

CAIR Vehicle System Testing Results:

- Vehicle 2W338214 was repurchased from the owner after an inadvertent airbag deployment and delivered to TRW on 8/11/2005.
 - i. No aftermarket electronic devices found to be installed in the vehicle
 - ii. Some positive and negative spikes were observed on the squib lines during the load testing of this vehicle.
 - iii. The TRW team was not able to duplicate the failure mode on the squib ASICs during the testing of this vehicle.
- Vehicle 3W527772 was repurchased from the owner after an inadvertent airbag deployment and delivered to TRW on 12/7/2006.
 - i. Aftermarket electronic devices, electrical re-routing, improper connections, or physical damages were not found during a complete visual inspection of the vehicle.
 - ii. Squib lines were instrumented and monitored for voltage transients (positive or negative greater than 25 volts) during various electrical loading conditions.
 - iii. A negative voltage spike approaching -30 volts was recorded while operating the driver's power seat while the engine was running.
 - iv. The TRW team was not able to duplicate the failure mode on the squib ASICs during the testing of this vehicle.
- Vehicle 3W527772 was provided to the Chrysler Vehicle Engineering (EE Systems Compatibility Lab) on 5/18/2007.
 - i. Squib lines were instrumented and monitored for voltage transients during various electrical loading conditions.
 - ii. Transient Emissions recorded a few transients, from the horn, near -30V. However, they were very short in duration (nanoseconds), have little or no energy behind them, and could not have caused this issue.
 - iii. Tested for Radiated Emissions from 150 kHz to 1 GHz. No spurious emissions related to this condition were found.
 - iv. RF Immunity Testing (200 V/m) was performed, with no conditions related to this issue found.
 - v. ESD (Electrostatic Discharge) was performed, with no conditions related to this issue found.
- Vehicle 3W522026 was repurchased from the owner after an inadvertent airbag deployment and delivered to TRW in October of 2010.
 - i. Squib lines were instrumented and monitored for voltage transients during various electrical loading conditions.
 - ii. No abnormal negative transients were observed.
 - iii. Large amount of water damage / rust inside the vehicle.
 - iv. Driver side SIACM (Side Airbag Module) was covered in salt.
 - v. No evidence of a collision based on the vehicle inspection.
- Vehicle 3W522026 was provided to the Chrysler Vehicle Engineering (EE Systems Compatibility Lab) in December of 2010.
 - i. The vehicle was exposed to radio frequencies (RF) in the VTEM from 0.1MHz – 30MHz with continuous wave and eighty percent amplitude modulation. There we no effects recorded.

- ii. The vehicle was exposed to radio frequencies (RF) in the VATC from 30MHz – 1.0GHz. The vehicle was tested with the antenna in the vertical and horizontal positions facing the front and driver side of the vehicle. There were no effects recorded.
- iii. The vehicle was exposed to radio frequencies (RF) in the VRSE from 800MHz – 3.2GHz, with both continuous wave and pulse width modulation. There were no effects recorded.

CAIR Vehicle System Testing Summary:

- While some positive and negative transient were observed during the load testing of these vehicles, the Chrysler and TRW Engineering teams were not able to duplicate the failure mode on the squib ASICs.
- To date, no CAIR vehicles that have been repaired following an alleged inadvertent airbag deployment have exhibited a repeat of the event.
- The test reports summarizing the vehicle testing are listed in Enclosure 9 – Assessments – Conf Bus Info, CAIR Vehicle Testing.

Assessment 4: ASIC Manufacturing Study

Start Date	End Date	Engineering Group Responsible
11/3/2006	11/17/2011	Chrysler Product Investigations & Recall Administration

ASIC Manufacturing Study:

Review the manufacturing information for each of the ASICs in our possession, retrieved from CAIR complaint vehicles which have evidence of an EOS.

ASIC Manufacturing Study Results:

- The squib ASIC wafers were fabricated in Arlington, Texas. The ASICs were assembled in Malaysia, for National Semi Conductor (NSC).
- When the manufacturing identification was discernible, the ASICs reviewed were manufactured from February thru December of 2002.

ASIC Manufacturing Study Summary:

- The manufacturing information, relating to 9 identifiable ASICs involved in the study which were removed from CAIR vehicles, does not identify any specific period of time where a temporary quality concern could be attributed to the event in question.
- The study summarizing the ASICs exhibiting EOS is in Enclosure 9 – Assessments, ASIC Study.

Assessment 5: ASIC Usage Study

Start Date	End Date	Engineering Group Responsible
8/31/2006	11/23/2011	Chrysler Product Investigations & Recall Administration

ASIC Usage Study:

Perform a read across of other Chrysler vehicle lines that utilize the same NSC ASIC in their respective ORCs. Determine if similar alleged inadvertent airbag deployment events are occurring in those vehicle lines.

ASIC Usage Study Results:

- The same NSC ASIC (P/N 150734-2) was used in ORCs installed in 2001 MY Durango (DN), 2001 MY Dakota (AN), 2002 MY Neon (PL), 2002-2003 MY Ram (DR), 2002-2003 MY Grand Cherokee (WJ), and 2002-2003 MY Viper (SR).
- An investigation of CAIRs for each of these vehicle lines and model years confirmed that the 2002 – 2003 MY WJ has experienced EOS events similar to the 2002 – 2003 MY KJ.
- There are 11 CAIRs for 2002 MY WJ (4.6 C/100,000) and 12 CAIRs for 2003 MY WJ (5.6 C/100,000), relating to customer allegations of inadvertent airbag deployments.
- There were no other vehicle lines using the same ASIC that have exhibited the same EOS event seen on the 2002 – 2003 MY KJ/WJ.
- The 2002-2003 MY KJ/WJ ORCs are different part numbers, different hardware, and different software. Additionally, the 2 vehicle lines are very dissimilar, with the vast majority of parts being unique to their respective vehicle line.
- The 2002-2003 MY WJ ORC controls the side airbag curtains, which is not similar to the 2002-2003 MY KJ (standalone SABIC modules).
- The 2002 – 2003 MY KJ/WJ vehicles utilize different clocksprings from different suppliers.
- The KJ is manufactured at the Toledo South Assembly Plant and the WJ is manufactured at the Jefferson North Assembly Plant.

ASIC Usage Study Summary:

- The ASIC EOS event, and subsequent inadvertent airbag deployment, is limited to the 2002-2003 MY KJ/WJ vehicle lines.

Assessment 6: Clockspring Analysis

Start Date	End Date	Engineering Group Responsible
9/20/2005	8/31/2006	Chrysler Product Investigations & Recall Administration, Chrysler Materials Engineering

Clockspring Analysis:

Analyze clocksprings removed from CAIR vehicles 2W317690 (KJ) and 2C272143 (WJ) for anomalies that could have resulted in the customer's complaints of inadvertent airbag deployment.

Clockspring Results:

- Chrysler Materials Engineering Summary Report 127150 indicates no anomalies noted on the respective clockspring assemblies.

- The KJ and WJ clocksprings are unique to their respective vehicle lines. Additionally, the clockspring assemblies for KJ and WJ are different designs, purchased from different suppliers.

Clockspring Summary:

- There were no anomalies within the KJ and WJ clocksprings. The clocksprings did not contribute to the ASIC EOS conditions.
- The Materials Engineering Report is in Enclosure 9 – Assessments, LTR127150.

Assessment 7: Buy-Back Restoration Study

Start Date	End Date	Engineering Group Responsible
11/30/2011	Pending	Chrysler Product Investigations & Recall Administration Chrysler E/E Systems Engineering

Buy-Back Restoration Study:

Repurchase 2002 or 2003 MY KJ vehicle(s), that have recently exhibited an inadvertent airbag deployment and shows signs of EOS to a squib ASIC. Replace the damaged ASIC with an undamaged ASIC of similar vintage, removed from another CAIR vehicle ORC. Repair vehicle as close to original as possible. Instrument the vehicle's electrical system to monitor squib and power lines leading from the ORC. Subject the vehicle to various duty cycles. Data from the monitored lines will be reviewed.

Buy-Back Restoration Results:

- The results are pending, as the repurchase of recent CAIR complaint vehicles is being negotiated.

Buy-Back Restoration Summary:

- This study is still in progress. Supplemental information will be provided upon completion of this assessment.

Assessment 8: Vehicle Change Notice (CN) Analysis

Start Date	End Date	Engineering Group Responsible
11/30/2011	Pending	Chrysler Product Investigations & Recall Administration Chrysler E/E Systems Engineering

CN Analysis:

Review all CN's related to the 2003 MY KJ, to determine if any resulted in a component or process change that is responsible for the absence of CAIR complaints where the vehicle build date is after March 19, 2003.

CN Analysis Results:

- The results are pending.

CN Analysis Summary:

- This study is still in progress. Supplemental information will be provided upon completion of this assessment.

10. State within the body of the response letter, describe all modifications or changes made by, or on behalf of, Chrysler 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. Also, were there any other changes in the driver side frontal air bag circuit design (beyond the subject component) during this period? 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 Chrysler is aware of which may be incorporated into vehicle production within the next 120 days.

A10. The subject component (ORC) is a purchased assembly. A detailed summary of the available change information for the ORC is being submitted in Enclosure 10 – Change History - Conf Bus Info, which has been sent under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

11. Produce one each of the following:

- a. Exemplar sample of each design version of the subject component for the subject vehicle;**
- b. Any kits that have been released, or developed, by Chrysler for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.**

A11. Exemplar Samples

- a. New samples of ORCs, at each of the design levels used for 2002 - 2003 MY KJ, are no longer available from production or service. Samples provided with this response include a sample from current service inventory (P/N 56010501AI), along with returned CAIR vehicle samples (P/N 56010501AG & AH). The CAIR vehicle samples exhibit the EOC condition on a squib ASIC.

- b. There were no kits released or developed by Chrysler for use in service repairs to the subject component/assembly which relate to or may relate, to the alleged defect in the subject vehicles.

12. State the number of each of the following that Chrysler 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 (including the cut-off date for sales, if applicable):

- a. Subject components; and
- b. Any kits that have been released, or developed, by Chrysler 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, model year and number sold, any other vehicles of which Chrysler is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

A12. Part Sales

U.S. monthly part sales information for the ORC is being submitted in Enclosure 12 – Part Sales - Conf Bus Info, which has been sent under separate cover to the NHTSA Chief Counsel's Office with a request for confidential treatment.

The table includes all subject component (ORC) service part sales, whether they are being sold as service parts for the subject vehicles or not and whether they are related to the alleged condition or not. For part sales sold to service the subject vehicles, it is difficult to determine whether the alleged defect prompted these part sales as there are circumstances not related to the alleged defect that generate sales. Thus, Chrysler has concluded that the use of part sales data will not be conclusive to assess any trend related to the alleged defects.

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

- a. The causal or contributory factor(s) including any water/liquid intrusion issue;
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The risk to motor vehicle safety that it poses (will the air bag continue to operate with the air bag light illuminated?);
- e. What warnings (both visually and audibly), if any, the operator would have that the alleged defect was occurring or subject component was malfunctioning (does the air bag light illuminate intermittently or in a constant ON mode); and
- f. The reports included with this inquiry.

A13: Assessment

Chrysler's investigation is continuing. As noted above in response to question 9, there are several pending investigative studies, the results of which will be provided to NHTSA upon completion.

Chrysler has made the following observations based upon the available customer complaints and field data:

- Chrysler's review of field data regarding the subject population of 2002 - 2004 MY KJ vehicles demonstrates there are no inadvertent air bag deployments in the 2004 MY KJ vehicles. The 2004 MY KJ vehicle incorporated a new ORC module design. As a result, Chrysler believes that all further investigations and assessments should focus on the 2002 - 2003 MY KJ vehicle population.
- For the 2002 - 2003 MY KJ subject population, Chrysler has yet to determine the root cause of the inadvertent air bag deployment of a frontal air bag or air bags (without crash/impact) or the illumination of the air bag light indicating a faulty ACM/wiring that can lead to an inadvertent deployment of the frontal air bag or air bags.
- Chrysler has not determined if the inadvertent airbag deployments were caused by conditions internal or external to the vehicle.
- Chrysler has yet to determine whether a safety related defect exists.
- In all reported cases of inadvertent air bag deployment, the driver side air bag exhibits only a partial deployment of either 80% or 20% output. Of the driver air bag inadvertent deployments, almost 55% of the deployments resulted in only 20% driver air bag power.
- There were no Fire, Crash, Property Damage or Fatality claims.
- The injuries reported were of a minor nature.

In summary, Chrysler has yet to determine the root cause of the inadvertent air bag deployments in the 2002 – 2003 MY KJ. Chrysler has not determined if the inadvertent airbag deployments were caused by conditions internal or external to the vehicle. Accordingly, Chrysler has yet to determine whether a safety related defect exists. Chrysler is continuing to investigate the causes of the inadvertent airbag deployments in the 2002 – 2003 MY KJ.

PE11-035

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12/9/2011

Enclosure 9 – Assessments

ASIC Study

KJ Inadvertent Airbag ASM & ASIC Summary

Vehicle	VIN	Owner	ACM P/N	ACM S/N	U3 LOT	U3 P/N	U10 LOT	U10 P/N	Date code for Squib ASIC (Year/Weeks)
2002KJ	2W [REDACTED]	[REDACTED]	P56010501AG	TSFME0932E0450	EE21CF	150734-2	EE21CM	150734-2	2002 / 1-6
2002KJ	2W [REDACTED]	[REDACTED]	P56010501AG	TSFME0732E0171		150734-2	EE21AX	150734-2	N/A
2002KJ	2W [REDACTED]	[REDACTED]	P56010501AG	TSFME1262E0258	EE2?DG	150734-2	EE22AY	150734-2	2002 / ?
2002KJ	2W [REDACTED]	[REDACTED]	P56010501AG	TSFME1272E0284		150734-2	EE22DA	150734-2	N/A
2002KJ	2W [REDACTED]	[REDACTED]	P56010501AG	TSFME1352E0972	EE22FU	150734-2	EE22BX	150734-2	2002 / 7-12
2002KJ	2W [REDACTED]	[REDACTED]	P56010501AG	TSFME1262E0258	EE24DG	150734-2	EE22AY	150734-2	2002 / 19-24
2002KJ	2W [REDACTED]	[REDACTED]	P56010501AH	TSFME2132E0769	EE23CT	150734-2	EE23CV	150734-2	0213
2003KJ	3W [REDACTED]	[REDACTED]	P56010501AH	TSFME1392E1784	EE22GE	150734-2	EE22HS	150734-2	2002 / 7-12
2003KJ	3W [REDACTED]	[REDACTED]	P56010501AH	TRFME1892E0440	EE17AZ	150734-2	EE22HK	150734-2	2002 / 7-12
2003KJ	3W [REDACTED]	[REDACTED]	P56010501AH	TRFME1822E0894	EE22GH	150734-2	EE22EG	150734-2	2002 / 7-12
2003KJ	3W [REDACTED]	[REDACTED]	P56010501AH	TRFME2532E1272	EE24EB	150734-2	EE2?EF	150734-2	2002 / ?
2003KJ	3W [REDACTED]	[REDACTED]	P56010501AH	TRFME2722E0303	EE24AP	150734-2	EE22EF	150734-2	2002 / 19-24
2003KJ	3W [REDACTED]	[REDACTED]	P56010501AI	TRFME0083E0517		150734-2	EE28B?	150734-2	2002 / 43-48
2003KJ	3W [REDACTED]	[REDACTED]	P56010501AI	TRFME3452E1145	EE27DJ	150734-2		150734-2	2002 / 37-42

Orange indicates an ASIC EOS.

Yellow indicates not determined.

PE11-035

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12/9/2011

Enclosure 9 – Assessments

LTR127150

Materials Engineering Summary Report

LTR Number: 127150

From:	Rick Turonek	Phone:	776-4966
Location:	CTC		

Lab(s):	NDE	Completed:	8/31/2006
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Subject/Part Name: KJ 02 WJ 02 Steering Column Clock Spring
Approver: Dale Wetzel
Originator: Russell Larvadain
Originator Phone: 6-7754
Number of Parts: 2
Nature of Work: Field, Warranty, Customer Satisfaction

Summary/Conclusion/Recommendations

Radioscopic Testing (Performed By: George Harmon)

The radioscopic inspection of these clock-springs was completed in accordance with the requirements of ASTM E1000 and the instructions of the requestor. The radioscopic images were digitally optimized from the screen presentation.

VIN 2W [REDACTED] - No apparent indications of back-winding, kinks in the wire tape or broken connectors were noted. are included below for review.

VIN 2C [REDACTED] - No apparent indications of back-winding, kinks in the wire tape or broken connectors were noted.

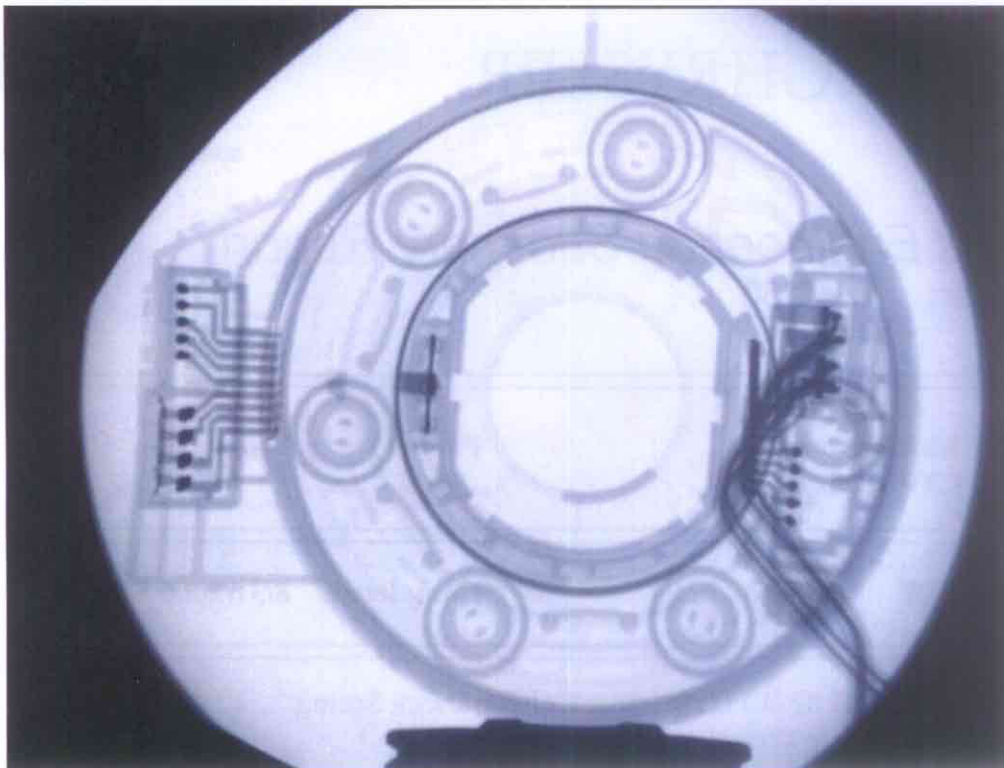
Images are provided and can be enlarged for better clarity.

History of Part

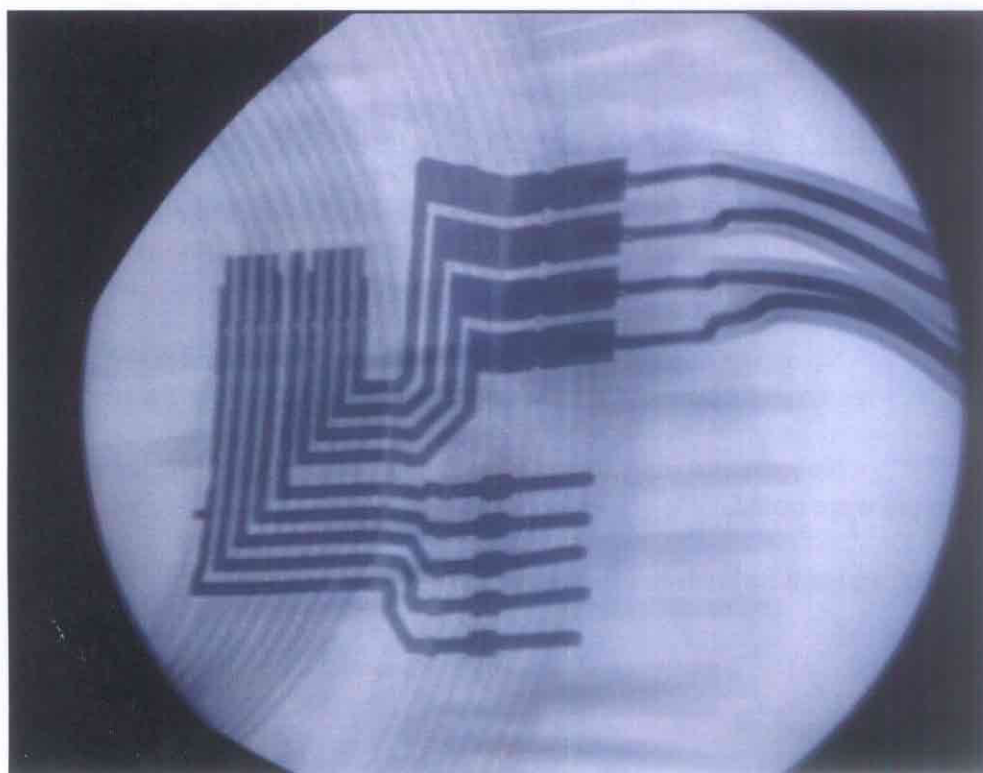
2 clock springs for x-ray analysis

Purpose

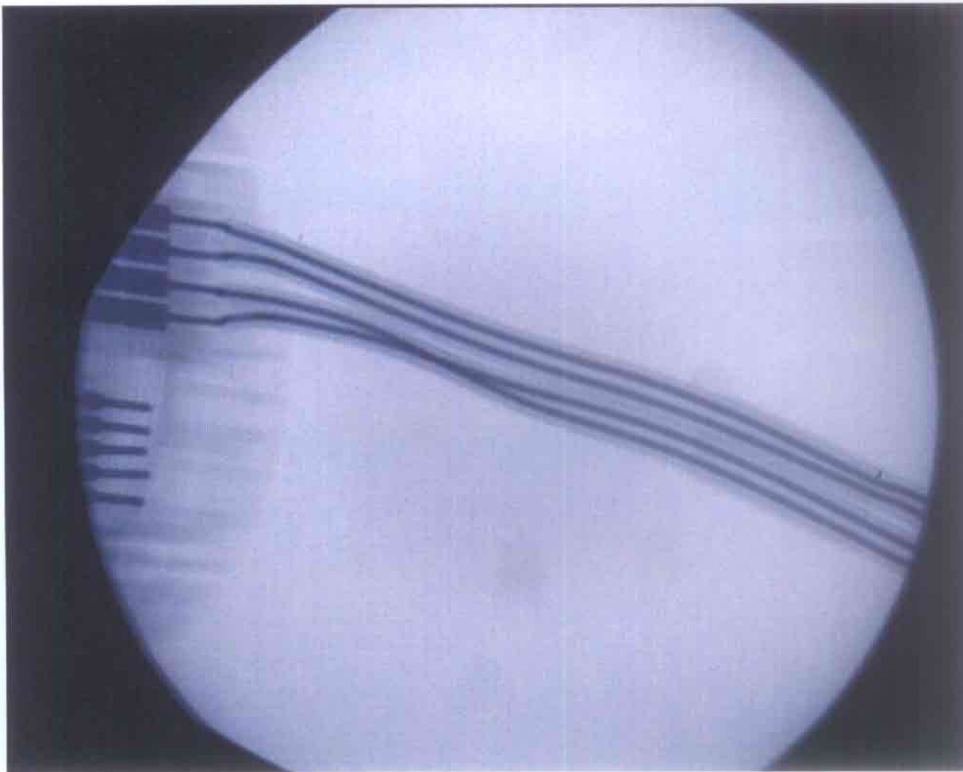
Determine if there are any breaks, back-winding or kinks in ribbon and connectors.



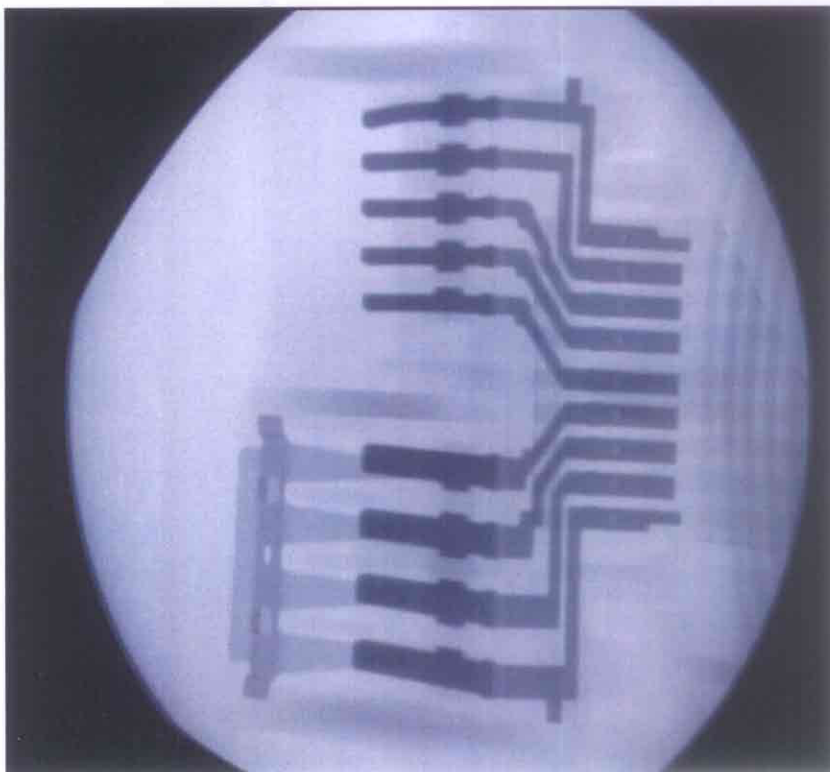
VIN 2W [REDACTED]



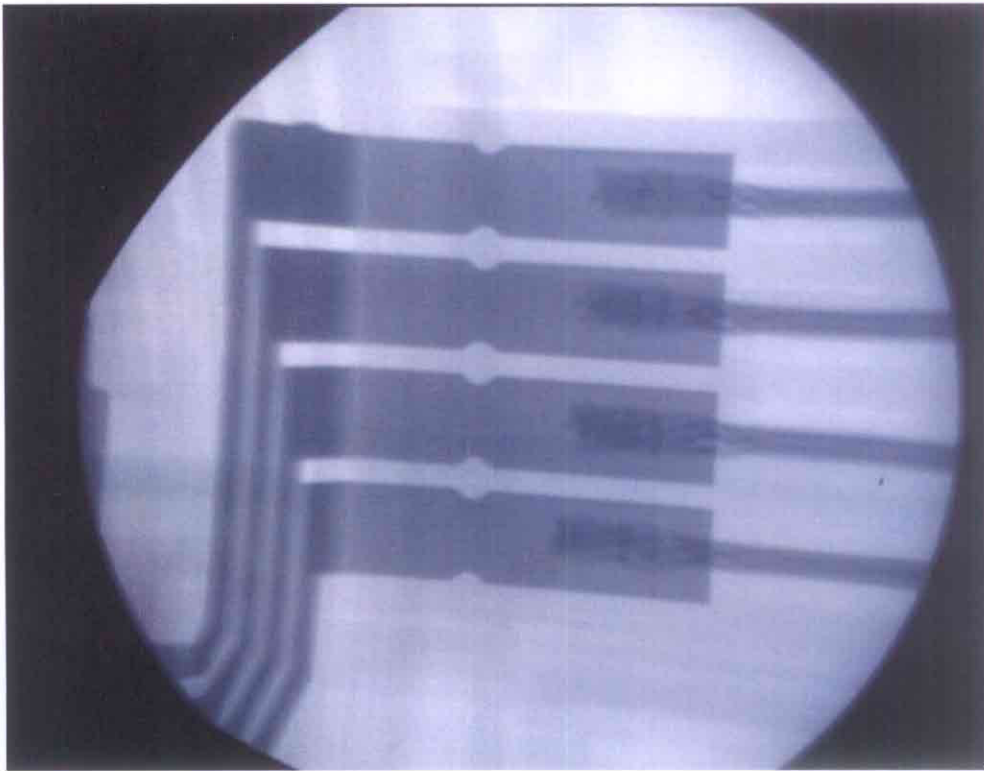
VIN 2W [REDACTED]



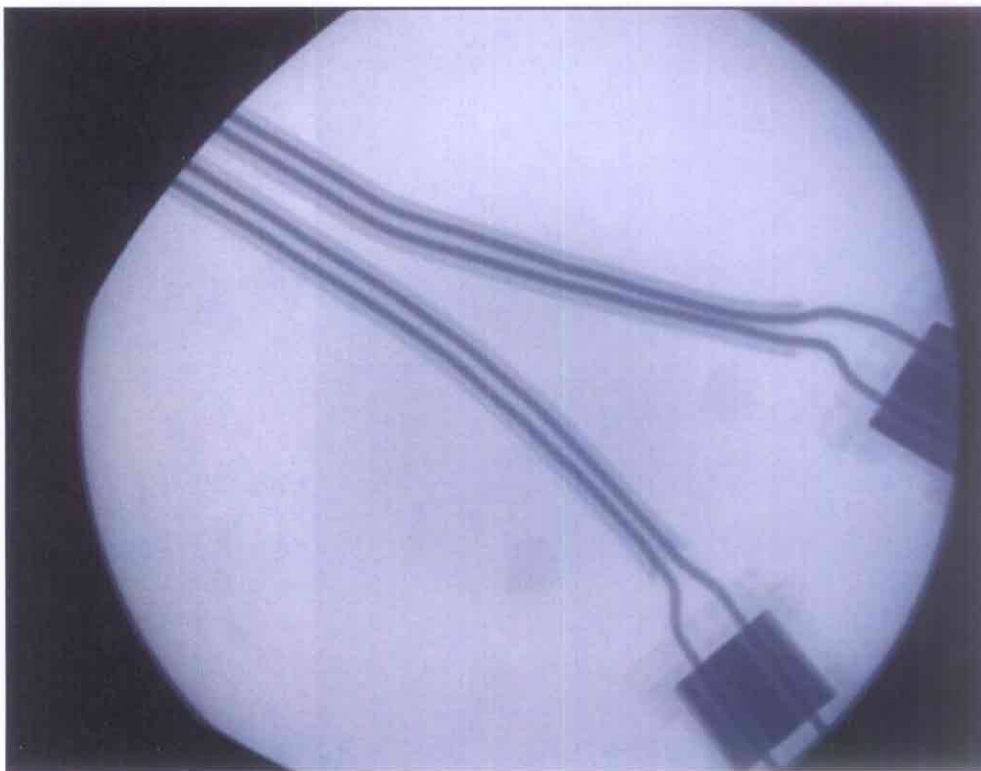
VIN 2W [REDACTED]



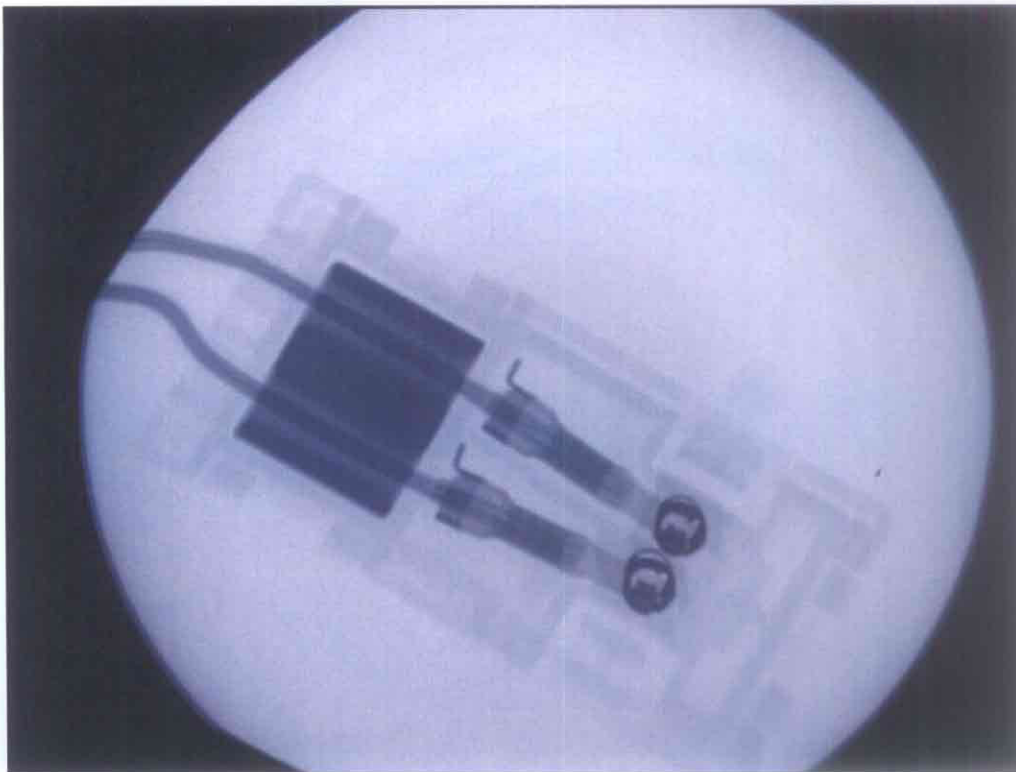
VIN 2W [REDACTED]



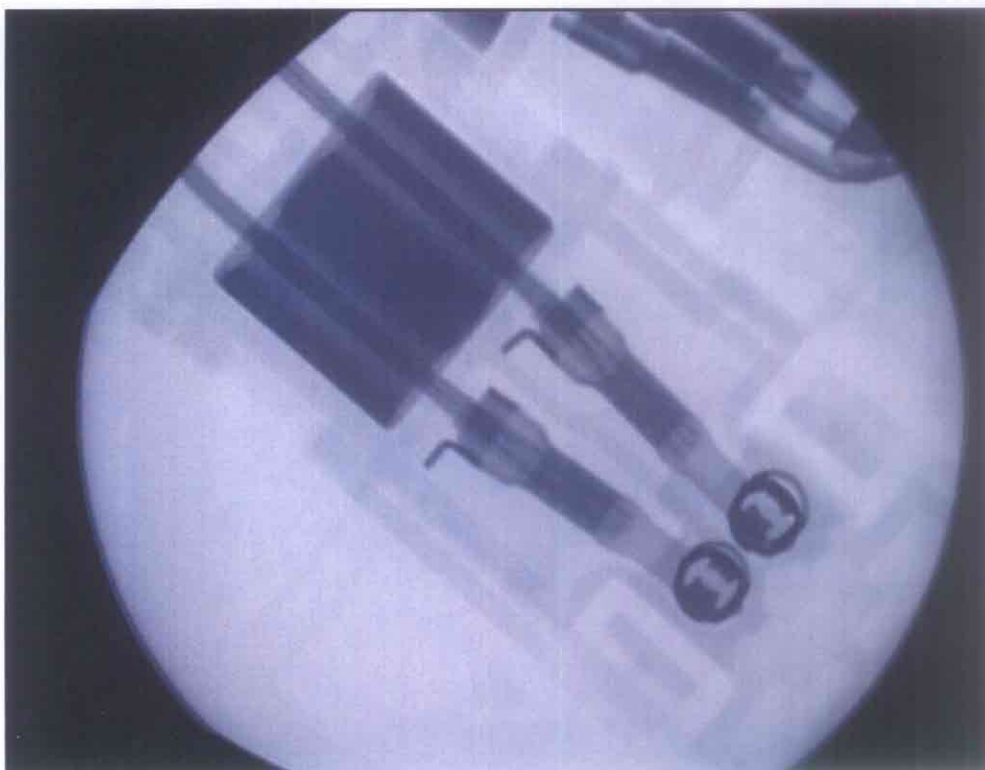
VIN 2W



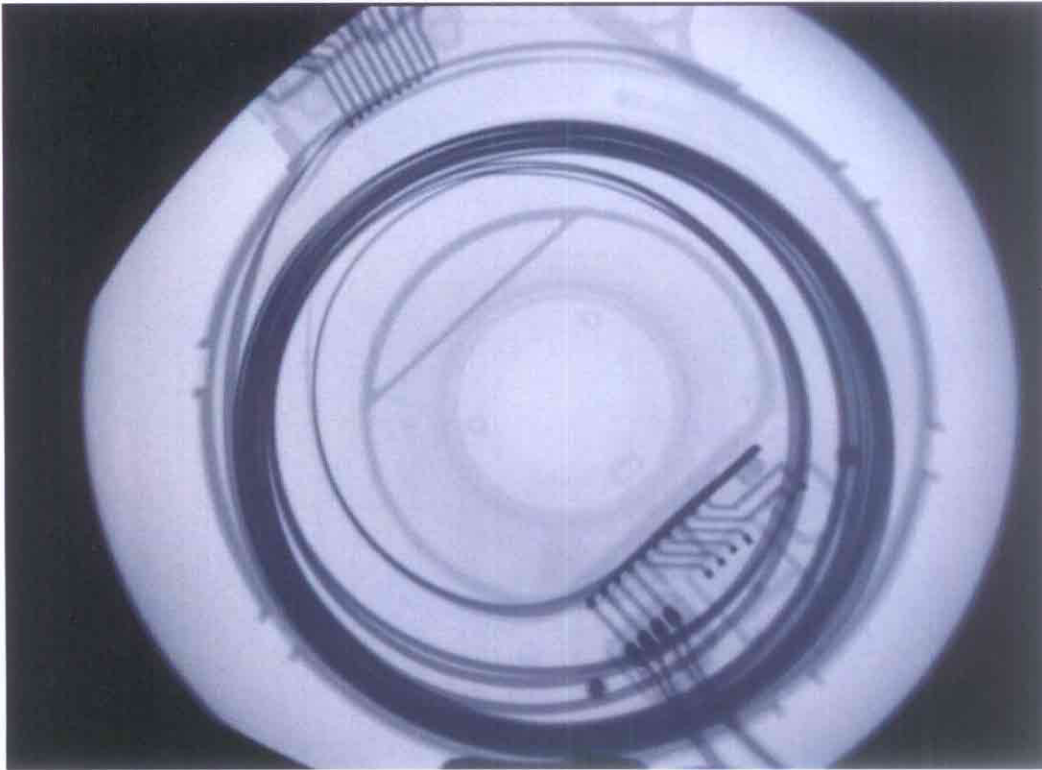
VIN 2W



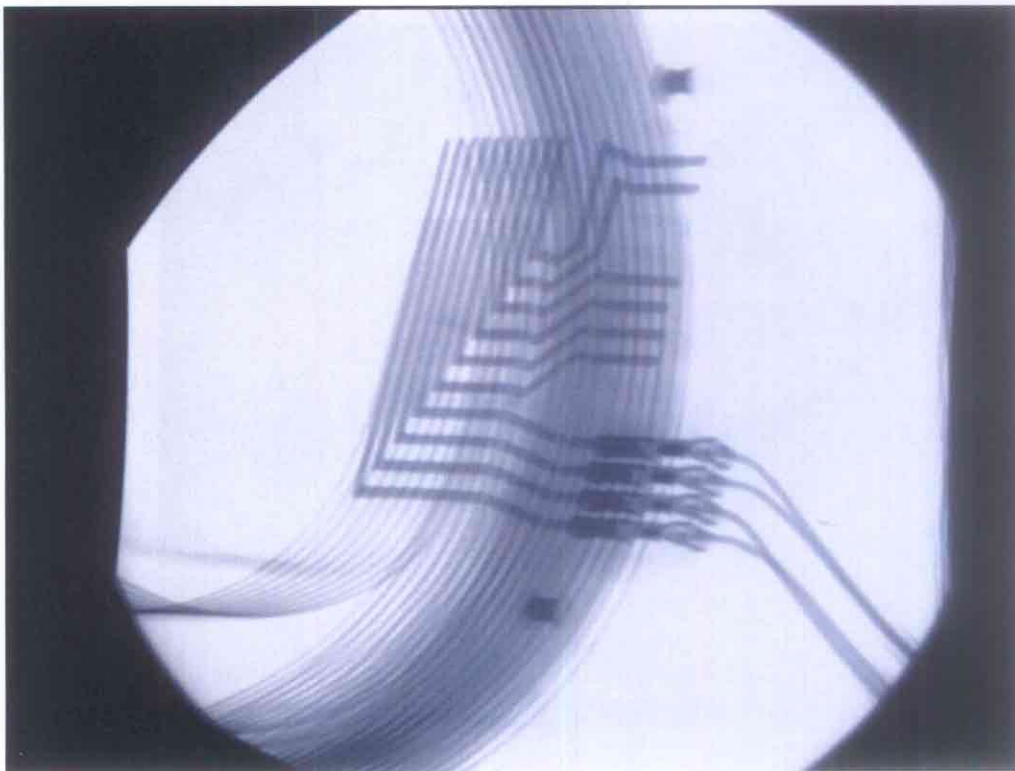
VIN 2W [REDACTED] (black)



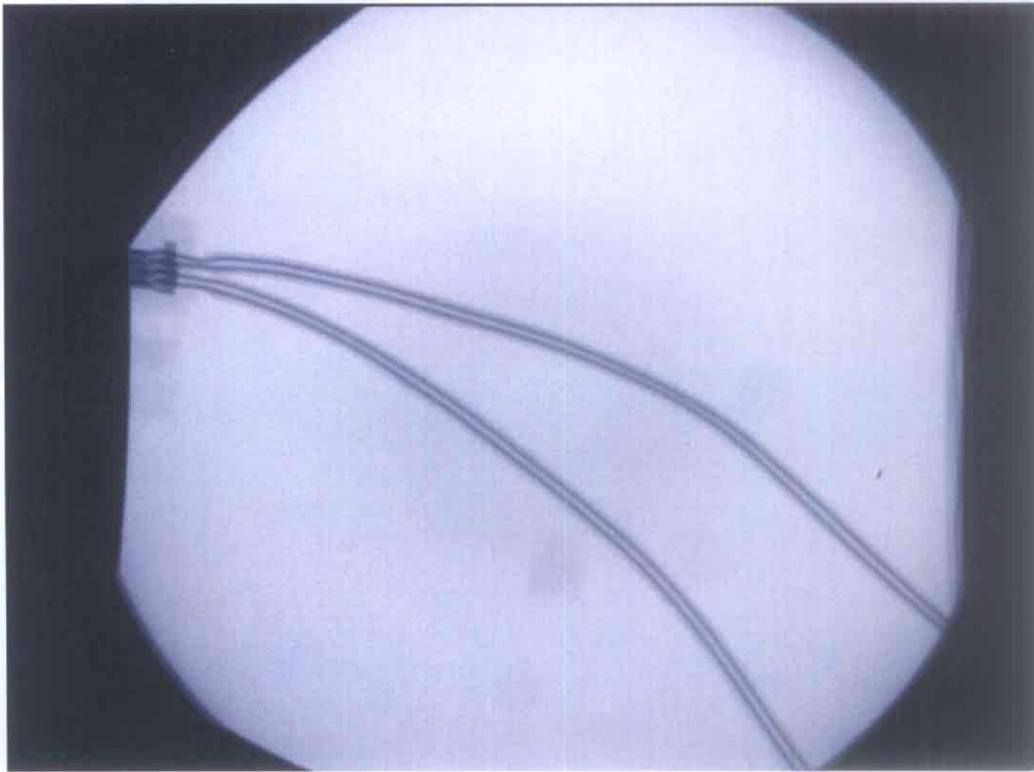
VIN 2W [REDACTED] (gray)



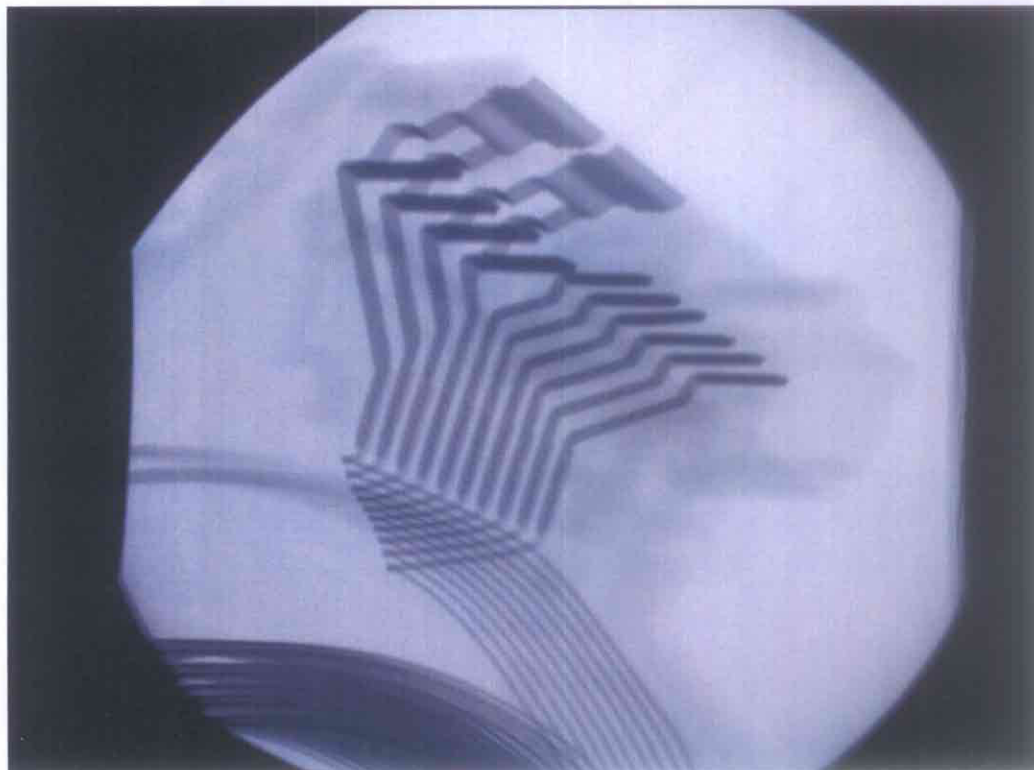
VIN 2C [REDACTED]



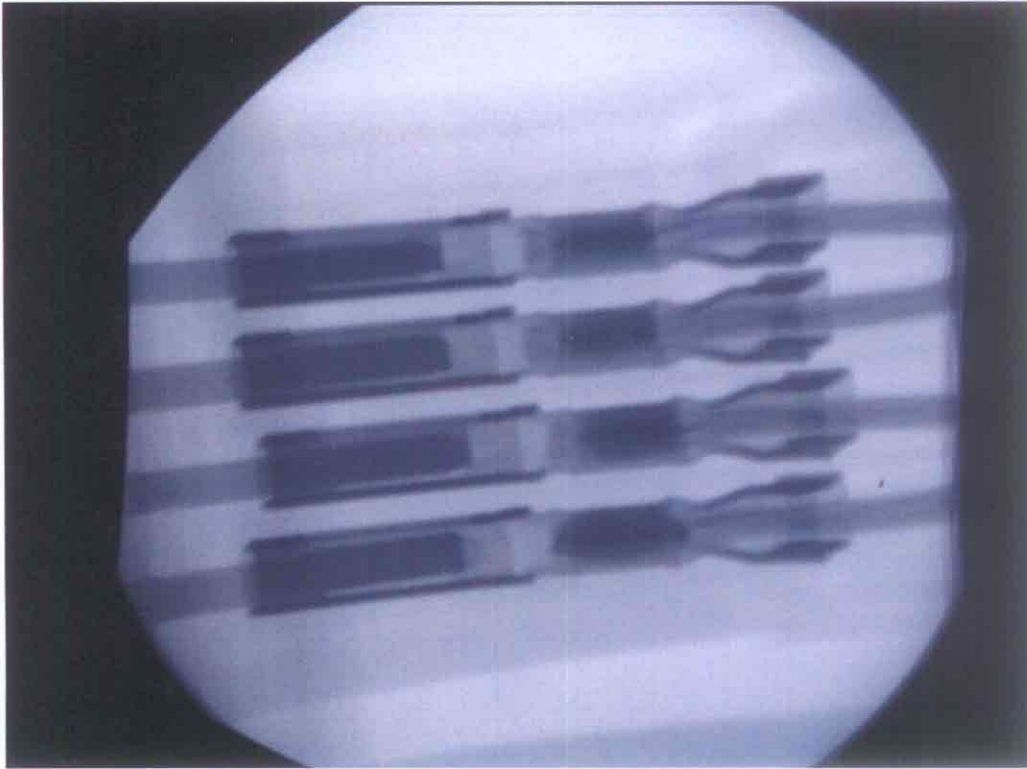
VIN 2C [REDACTED]



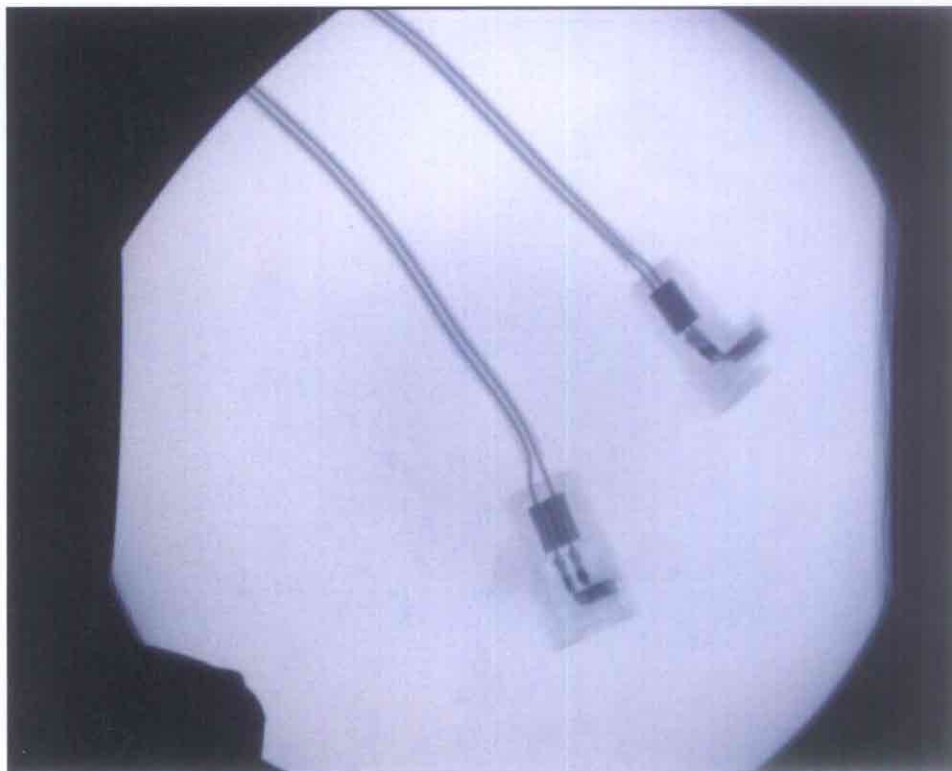
VIN 2C [REDACTED]



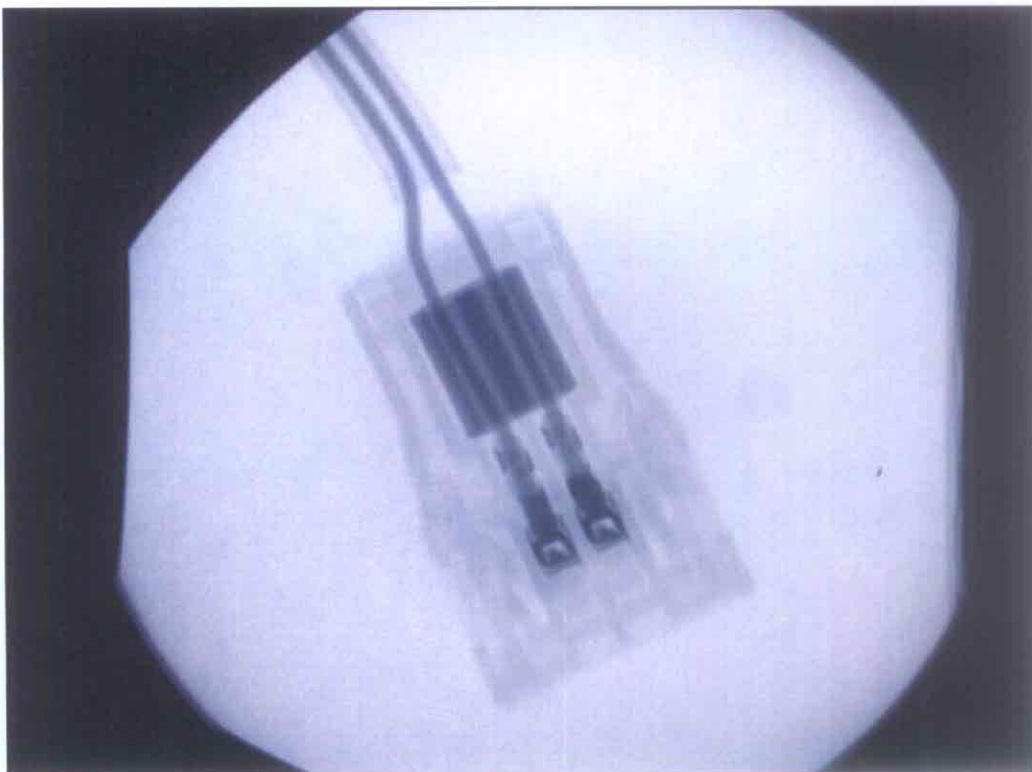
VIN 2C [REDACTED]



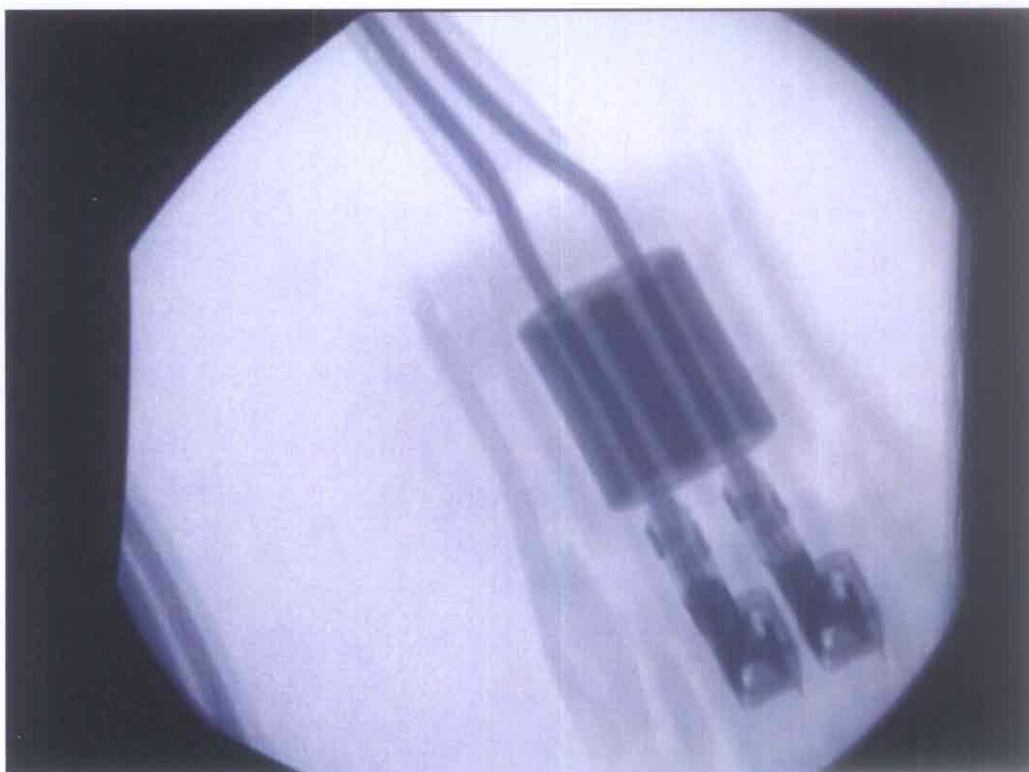
VIN 2C [REDACTED]



VIN 2C [REDACTED]



VIN 2C [REDACTED] (black)



VIN 2C [REDACTED] (green)

The following are the resistance value for the 2 clocksprings from Vehicle Safety Office.

2002 KJ (Liberty) Clockspring 2002 WJ Clockspring

2W317690

2C272143

Air Bag circuit 1	1.5 ohms	1.4 ohms
Air Bag circuit 2	1.5 ohms	1.3 ohms
6-way connector	0.7 ohms	0.7 ohms

PE11-035

CHRYSLER

12/9/2011

Enclosure 7 - Diagnostic
Trouble Codes

PE11-035 Diagnostic Trouble Codes (DTC's)

DTC	Fault Source (Source Flag)
Accelerometer	Under-sensitive deflection output
Accelerometer	Oversensitive deflection output
Accelerometer	Bias out of range
Accelerometer	"Railed" output condition
Accelerometer	Accelerometer Status Fault EEPROM (Configurable)
ORC Output Circuit	VFireOpen (4 total - 2/Quad ASIC)
ORC Output Circuit	VFireRTNOpen (2 total - 1/Quad ASIC)
ORC Output Circuit	Current Limit resistor fault (4 total - 2/Quad ASIC)
Internal	Squib ASIC Communication Fault (ASIC HW Failure) (2 total - 1 fault source per squib)
Internal	Calibration Table checksum fault
Internal	Calibration Algorithm options mismatch
Internal	Calibration Algorithm ID mismatch
Internal	Configuration Table checksum failure
Internal	Front Fire Unconfirmed
Internal	Algorithm Overrun
Internal	Driver CZS loss of ASIC communication
Internal	Passenger CZS loss of ASIC communication
Internal	Unplanned Reset
Internal	Watchdog failure
Internal	EEPROM failure
Internal	ROM checksum failure
Internal	Vref_Failure
Internal	Fire Inhibit failure (2 total - 1/squib ASIC)
Internal	ASIC Diagnostic Resistor (2 total - 1/squib ASIC)
Driver Squib #1 Open	resistance above open diagnostic limit
Passenger Squib #1 Open	resistance above open diagnostic limit
Driver Squib #2 Open	resistance above open diagnostic limit
Passenger Squib #2 Open	resistance above open diagnostic limit
Driver Squib #1 Short	resistance below diagnostic limit
Passenger Squib #1 Short	resistance below diagnostic limit
Driver Squib #2 Short	resistance below diagnostic limit
Passenger Squib #2 Short	resistance below diagnostic limit
Driver Squib #1 Short to Battery	resistance to Battery below diagnostic limit
Passenger Squib #1 Short to Battery	resistance to Battery below diagnostic limit
Driver Squib #2 Short to Battery	resistance to Battery below diagnostic limit
Passenger Squib #2 Short to Battery	resistance to Battery below diagnostic limit
Driver Squib #1 Short to Ground	resistance to Ground below diagnostic limit
Passenger Squib #1 Short to Ground	resistance to Ground below diagnostic limit
Driver Squib #2 Short to Ground	resistance to Ground below diagnostic limit
Passenger Squib #2 Short to Ground	resistance to Ground below diagnostic limit
Firing Capacitor Low Stored Energy	Stored Energy Capacitor voltage too low
	Capacitance too low
Safing Sensor	Loss of safing sensor continuity
	Safing sensor resistance below shorted limit
Driver Seat Belt Sensor Shorted/Shorted to Ground	Driver Seat Belt Shorted
Driver Seat Belt Sensor Open	Driver Seat Belt Open
Driver Seat Belt Sensor Short to Battery	Driver Seat Belt Short to Battery
Passenger Seat Belt Sensor Shorted/Shorted to Ground	Passenger Seat Belt Shorted
Passenger Seat Belt Sensor Open	Passenger Seat Belt Open
Passenger Seat Belt Sensor Short to Battery	Passenger Seat Belt Short to Battery
Driver Seat Belt Pretensioner Open	resistance above open diagnostic limit
Passenger Seat Belt Pretensioner Open	resistance above open diagnostic limit
Driver Seat Belt Pretensioner Shorted	resistance below diagnostic limit
Passenger Seat Belt Pretensioner Shorted	resistance below diagnostic limit
Driver Seat Belt Pretensioner Short to Battery	resistance to Battery below diagnostic limit
Passenger Seat Belt Pretensioner Short to Battery	resistance to Battery below diagnostic limit
Driver Seat Belt Pretensioner Short to Ground	resistance to Ground below diagnostic limit
Passenger Seat Belt Pretensioner Short to Ground	resistance to Ground below diagnostic limit
Loss of Driver Front Sensor Communication	Sensor CRC incorrect
Loss of Passenger Front Sensor Communication	Sensor CRC incorrect
Driver Front Sensor Internal Diagnostic Code	Accelerometer bias or deflection failure
	Unexpected Accelerometer Type
	Accelerometer railed
	Sensor Internal A/D conversion error
Passenger Front Sensor Internal Diagnostic Code	Accelerometer bias or deflection failure
	Unexpected Accelerometer Type
	Accelerometer railed
	Sensor Internal A/D conversion error
Warning Lamp Open	Cluster's status message indicates open warning lamp
Warning Lamp Short	Cluster's status message indicates shorted warning lamp
Loss of Ignition-Run/Start	Ignition Run/Start feed missing
Loss of Ignition-Run Only	Ignition Run Only feed missing
SRIM DTC - Interrogate SRIM	Interrogate SRIM Diagnostic Code
No SRIM Message	No SRIM Message
Module Not configured for SRIM	Unexpected SRIM message appears on bus
DAB Disable Warning Lamp Reported Faulted	DAB Disable Warning Lamp Reported Faulted
PAB Disable Warning Lamp Reported Faulted	PAB Disable Warning Lamp Reported Faulted
No Left SIACM Message	No message from Left SIACM
No Right SIACM Message	No message from Right SIACM
Interrogate Left SIACM	Left SIACM requests ORC lamp on
Interrogate Right SIACM	Right SIACM requests ORC lamp on
Module Not Configured for SIACM	Unexpected SIACM message appears on bus