

FREIGHTLINER
LLC

A DaimlerChrysler Company

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November 27, 2006

Richard Boyd, Chief
Medium and Heavy Vehicle Division
Office of Defects Investigation
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

Re: NVS-214bby / PE06-033

RECEIVED
NVS-218
2006 DEC - 1 P 3:31
OFFICE OF DEFECTS
INVESTIGATION

Mr. Boyd:

This letter responds to the above referenced request for information concerning missing or broken welds on the steering columns of certain Freightliner Century Class and Columbia trucks.

Your specific requests, with identification codes, are repeated verbatim in the following pages. Freightliner LLC's response follows each request in **bold**.

If you have any questions, please contact me.

Sincerely yours,



Timothy Blubaugh

Attachments

Certified Mail# 7002 3150 0004 1405 0631

North America's leading commercial vehicle manufacturer.

1. State, by model and model year, the number of subject vehicles Freightliner has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date state the following:

- a. **Vehicle Identification Number;**
- b. **Model;**
- c. **Model Year;**
- d. **Date of manufacture;**
- e. **Date warranty coverage commenced;**
- f. **The State in the United States where the vehicle containing the subject engine 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." See Enclosure 1, Data Collection Disc, for a pre-formatted table designed for this submission.

1. ANSWER

Production data is listed in Attachment 1.00.

Warranty coverage begins at the time of vehicle delivery to the customer.

2. State the number of each of the following, received by Freightliner, or of which Freightliner is otherwise aware, which 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;
 - d. Third-party arbitration proceedings where Freightliner is or was a party to the arbitration; and,
 - e. Lawsuits, both pending and closed, in which Freightliner 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 for each model and model year. 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 "e," provide a summary description of the alleged problem and causal and contributing factors and Freightliners assessment of the problem, with a summary of the significant underlying facts and evidence. For items "d" and "e", 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.

2. ANSWER

a. Freightliner LLC has received no consumer complaints concerning broken welds.

b. Two Field Reports have been received.

c, d, e. There are no reports of a crash, injury, or fatality; or of third-party arbitration proceedings or lawsuits, pending or closed.

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:
- Freightliners file number or other identifier used;
 - The category of the item, as identified in b. 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 make, model and model year;
 - Vehicle's mileage at time of incident;
 - Incident date;
 - Incident state;
 - Report or claim date;
 - Whether a crash is alleged;
 - Whether property damage is alleged;
 - Number of alleged injuries, if any;
 - Number of alleged fatalities, if any;
 - Whether the item is related to the alleged defect;
 - Whether or not Freightliner received a subrogation claim regarding the incident (Y/N);
 - Alleged cause of the failure;
 - Complaint summary;
 - Consumer comments; and,
 - Freightliners assessment of the allegation;

Provide this information in Microsoft Access 2000, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table designed for this submission.

3. ANSWER

See Excel spreadsheet, Attachment 2.00, Question 3.

4. Produce electronic 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 Freightliner used for organizing the documents.

4. ANSWER

See Excel spreadsheet, Attachment 2.01-2.12, Question 4.

5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Freightliner to date where the subject component was replaced or repaired on the subject vehicles: warranty claims; 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. Separately, for each such claim, state the following information:

- a. Freightliners claim number;
- b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. Vehicle's make, model, and model year;
- e. Repair date;
- f. Vehicle mileage at time of repair;
- g. Repairing dealers or facility's name, telephone number, city and state or ZIP code;
- h. Labor operation number;
- i. Problem code;
- j. Causal part (if identified);
- k. Whether a crack of any size was identified in the steering column;
- l. Replacement part number(s) and description(s);
- m. Repair procedure performed;
- n. Concern stated by customer; and
- o. Comments, by dealer/technician relating to claim and/or repair;

Provide this information in Microsoft Access 2000, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table designed for this submission.

5. ANSWER

The claim details can be found in the Excel Spreadsheet in Attachment 3.00-3.05, Question 5.

6. Describe in detail the search criteria used by Freightliner 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 and model year, the terms of the new vehicle warranty coverage offered by Freightliner 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) related to the alleged defect that Freightliner 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.

6. ANSWER

A warranty search on the subject vehicles, where the subject component was repaired or replaced, was filtered to identify the alleged defect using a number of Damage Codes that could fit the issue. The technician's comments in the results were then filtered using the word "weld". The claims without the word "weld" were filtered further for words such as: "side-to-side", "excess play", "wobble" and "loose". Of 244 warranty claims listed, 7 specifically mention a weld issue. Damage Codes and all search words used are listed in the Warranty Claims, Attachment 3.00-3.05, Question 5.

The warranty period for Century Class vehicles is typically 3-years/350,000 miles. Columbia vehicles are typically 1-year/100,000 miles. Variations in the warranty, both in duration and items covered, are frequently negotiated at the time of vehicle purchase.

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

7. ANSWER

There have been no service, warranty or other documents issued to dealers relating to the alleged defect in the subject vehicles.

8. Provide drawings, assembly drawings, and schematics that show the steering column and the steering column assembled in the vehicle. Identify on the drawings where the welds that are allegedly cracking and failing are located. Also identify on these drawings what components potentially limit how far the steering column can descend if a failure occurs.

8. ANSWER

Installation and part drawings can be found in Attachment 4.01-4.03, Question 8.

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 or any of the subject components installed in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Freightliner. 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 electronic 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.

9. ANSWER

A steering column returned from the field with a housing having two missing welds and two broken welds was evaluated by the Freightliner Test Department on 10/27/06. When installed in a Columbia vehicle, no binding was noted in the column during steering wheel rotation in either direction, lock-to-lock, with the vehicle stationary and engine running. A total of 5.5 inches movement was measured fore/aft at the wheel rim and 4.5

inches side-to-side. The column, part number A14-13459-002, came from serial number 1FUJA6CK4 [REDACTED], a 2006 MY Century Class with 112,000 miles. Douglas Autotec built the column March 27, 2005. The vehicle was built May 7, 2005.

Douglas Autotec began an analysis in 3/06 as a result of the column returned from Columbia S/N U97814. This is one of the vehicles listed in Attachment 2.0. This analysis continues.

Additionally, Douglas Autotec performed tests as follows:

Column Shaft Weld, DAC Test 4133

- a. Torsion Fatigue – Model 600 shaft; b. 10/26/06; c. 11/27/06;
- d. Two 606 columns were reworked to simulate the production rework. The improperly located weld was removed using a lathe. The shafts were then tested for strength and durability with only the remnant weld left. Test 4133 was a combination vibration and torsional fatigue cycle test.
- e. Product Engineering is responsible for the design. The Product Engineering Test Lab performed testing.
- f. The shaft assembly missing the rework weld failed after ~21,000 cycles at 27ft-lbs. This load represents a steering effort during a parking maneuver. The test results confirm that the failure is infantile.

Column Housing Welds, DAC Tests 4125, 4126, 4127, 4128, 4129

- a. Driver Entry – Model 606 Assembly; b. 11/15/06; c. 11/16/06;
- d. The objective was to determine if all housing weld issues involve just two rear missing welds, or could some housings have all welds, but not to specification. Five Model 606 Assemblies were each prepared with four welds having only 20% penetration to determine strength and durability. The weld penetration was determined from the above housing returned from vehicle V66955.
- e. Product Engineering is responsible for the design. The Product Engineering Test Lab performed testing.
- f. The column passed Driver Entry, Axial Load and the Vibration test with 20% penetration weld.

- a. Axial Load Durability – Model 606 Assembly; b. 11/15/06; c. 11/15/06;
- d. Determine the torsional cyclic load life of the assembly with four welds having only 20% penetration.
- e. Product Engineering is responsible for the design. The Product Engineering Test Lab performed testing.
- f. Column passed test with all welds having 20% penetration.

- a. Vibration Axial Load Durability – Model 606 Assembly; b. 11/15/06; c. 11/30/06;
- d. Determine the vibration fatigue life of the assembly with four welds having only 20% penetration.
- e. Product Engineering is responsible for the design. The Product Engineering Test Lab performed testing.
- f. The test is in process.

- a. Shaft Retaining, Ultimate Force – Model 606 Assembly; b. 11/14/06; c. 11/17/06;
 - d. Determine the shaft retaining force by pulling up on the shaft end when assembled with a housing with four welds having only 20% penetration.
 - e. Product Engineering is responsible for the design. The Product Engineering Test Lab performed testing.
 - f. Column passed test with all welds having 20% penetration.
-
- a. Crush Test, Ultimate Force – Model 606 Assembly; b. 11/15/06; c. 11/15/06;
 - d. Determine the upper column retaining force by pushing down on the shaft end.
 - e. Product Engineering is responsible for the design. The Product Engineering Test Lab performed testing.
 - f. Column exceeded the test requirement with all welds having 20% penetration.

Electronic copies of all available Test Data are in Attachments 5.00-5.19, Question 9.

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

10. ANSWER

Column Shaft Weld

- a. N/A
- b. 10/24/04
- c. Eliminate rework of improperly located welds. Eliminate the risk of a reworked column missing the weld station.
- d. e. 6005001 and 6001005SA
- f. The original unmodified component was not withdrawn.
- g. h. No modified components or part number
- i. No modified components

Column Housing Welds

- a. N/A
- b. 3/14/06
- c. Interlock weld station 2 and 3 to prevent the housing from being removed before it is completely welded. Eliminate the risk of a missed weld operation on the housing

d. e. 6005001 and 6001005SA

f. The original unmodified component was not withdrawn.

g. h. No modified components or part number

i. No modified components

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

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 Freightliner is aware that contain the same part number component, whether installed in production or in service, and state the applicable dates of production or service usage.

Provide this information in Microsoft Access 2000, or a compatible format, entitled table designed for this submission.

"REQUEST NUMBER ELEVEN DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted.

11. ANSWER

In the past 12 months, 701 replacement columns have been supplied to the field for all applications in North America. There were approximately 108,000 subject vehicles built with this steering column.

a. b. c. All subject vehicles use either of Freightliner part numbers A14-13459-000 thru -004. These columns vary only in the airline fitting, shaft length or shaft sensor.

Freightliner Argosy and Coronado vehicles also use this column.

No kits have been designed or released.

The steering column is supplied by:

**Douglas Autotec Corporation
300 Albers Rd.
Bronson, MI 49028
Matthew Ruedisueli
Manufacturing Engineering Manager
517-369-2315**

Part sales are listed in an Excel Spreadsheet, Attachment 6.00, Question 11.

12. Furnish a copy of the design, test, and quality assurance specifications, standards, and drawings for the subject component used on subject vehicles. Include in this information any part numbers used to identify the different designs and how to interpret that part number.

12. ANSWER**Column Shaft Weld****a. Design FEMA (49171BDFMEA.xls)****b. Quality Specification (Weld upper and lower shaft to U-Joint PS.pdf)****c. Drawings 6005001 and 49167N (6005001&SA_T.pdf and 49167N_K.pdf)****Column Housing Welds****a. Design FEMA (6005 DFMEAxls)****b. Quality Specification (Upper Housing Assembly.pdf (Weld Brackets to Assembly))****c. Drawings 6005001 and 49235G (6005001&SA_T.pdf and 49235G_P.pdf)****Design FMEA and drawings are in Attachment 7.00-7-06, Question 12.**

13. State whether Freightliner has ever conducted, or is aware of, any returned part analyses in subject vehicles related to the alleged defect. If so, describe, and provide electronic copies of all documents and photographs relating to, any and all returned part analyses of subject components. Include in your description the total number of such parts returned, the number analyzed, a description of how they were analyzed, a listing of all such components that were inspected, tested, evaluated, or assessed by stating the vehicle's VIN, recall repair date, mileage at the recall repair date, date of build, anomalies detected, and reason for specific component analysis. Include any and all material showing the frequencies of failed components as a function of service life or mileage.

13. ANSWER**The analysis conducted by Freightliner has been described in the answer to Question 9.**

14. Provide copies of all documents or communications between Freightliner and Douglas Autotec Corporation regarding the alleged defect in the subject component. Organize the document copies in chronological order.

14. ANSWER**See Attachments 8.00-8.24, Question 14.**

15. Provide copies of all documents transmitted internally within Freightliner that relate to the alleged defect in the subject component. Organize the document copies in chronological order.

15. ANSWER**Copies of such documents are collated in Attachment 9.00-9.41, Question 15.**

16. Provide copies of all failure mode and effects analyses related to the alleged defect in the subject component.

16. ANSWER

Column Shaft Weld

Design FEMA (49171B FMEA.xls)

6005 PFMEA.xls

Column Housing Welds

6005 PFMEA.xls

See Attachment 10.00-10.02, Question 16

17. Furnish Freightliners assessment of the alleged defect in the subject vehicles, including:
- An assessment of the failure mechanism including all causal or contributory factors;
 - An assessment of the design factors of the subject component that may influence the durability of the subject component;
 - An assessment of the manufacturing factors that may influence the durability of the subject component;
 - An assessment of the vehicle assembly factors that may influence the durability of the subject component;
 - An assessment of the use factors of the subject component that may influence the durability of the subject component.
 - Please be as specific as possible in your answers and provide engineering explanations for how various factors affect the steering column durability.
 - Any warning symptoms;
 - The root cause of the failures;
 - It's potential effect on occupant safety; and
 - The potential for future occurrences of the alleged defect in the subject vehicles;

17. ANSWER

Both Issues

a. Failures are attributed to missing welds on the steering column shaft and housing.

b. No issues with the design of the column were found.

c. Steering Shaft Weld

The missing shaft weld has been attributed to the rework of 64 assemblies due to an improperly located weld. The assemblies were reworked by removing the weld and manually re-welding. One of the reworked shafts was not re-welded and failed before the customer took delivery.

c. Column Housing Welds

Lack of support structure welds occurred due to some columns missing one of three sequential welders. See 10c Answer.

Both Issues

d. There are no contributing vehicle assembly issues.

e.f. Steering columns are tested with loads far exceeding those applied during daily use.

This includes driver-applied loads to the steering wheel during entry and exit and power-off steering loads.

Column Shaft Weld

- g. If the column shaft assembly is missing the circumferential weld, it will separate without warning.**
- h. The root cause is attributed to operator training, resulting in missing welds.**
- i. The vehicle may crash without prior warning, resulting in possible occupant injury.**
- j. Douglas Autotec is confident all steer column shafts with a missing weld have surfaced because the failure is infantile. As of October 2004, the rework process was discontinued.**

Column Housing Welds

- g. The driver will first notice a fore/aft play in the steering wheel, followed by the addition of a lateral play as the remaining two forward welds fracture.**
- h. The root cause is attributed to operator training, resulting in missing welds.**
- i. After the forward welds fracture, vehicle steering control can be maintained, but requires more driver effort. There have been no reported accidents or injuries.**
- j. Douglas Autotec is still determining whether other incorrectly welded columns have been shipped.**

2004 Model Year Century and Columbia

Total = 42,219

VIN	Model	Built	Inservice	State
1FVAA6CV84170000	CL120	5/22/2003	7/26/2005	FL
1FVAA6CV0	CL120	5/23/2003	6/12/2003	IN
1FVHA6AS3	CL120	7/21/2003	2/10/2004	SC
1FVAA6CV7	CL120	10/2/2003	5/1/2004	MI
1FVAA6CV9	CL120	10/2/2003	3/18/2005	PA
1FVAA6CV0	CL120	10/3/2003	10/22/2003	IN
1FVAA6CV2	CL120	10/2/2003	8/28/2004	CA
1FVHA6CV6	CL120	10/6/2003	4/30/2005	GA
1FVHA6CV8	CL120	10/6/2003	12/15/2004	OH
1FVHA6CVX	CL120	10/6/2003	3/3/2004	NH
1FVAA6CV6	CL120	10/17/2003	6/27/2005	AZ
1FVAA6CV8	CL120	10/18/2003	4/25/2005	OR
1FVAA6CVX	CL120	10/21/2003	1/6/2006	VA
1FVAA6CV1	CL120	10/18/2003	4/20/2006	OH
1FVAA6CV3	CL120	10/20/2003	11/12/2005	TN
1FVAA6CV5	CL120	10/20/2003	3/28/2005	MI
1FVAA6CV1	CL120	10/20/2003	2/5/2005	CA
1FVAA6CV3	CL120	10/20/2003	6/18/2005	MI
1FVAA6CV5	CL120	10/20/2003	1/31/2005	NM
1FVAA6CV7	CL120	10/21/2003	10/29/2003	IN
1FVAA6CV9	CL120	10/21/2003	10/29/2003	IN
1FVAA6CV0	CL120	10/21/2003	2/18/2006	MN
1FVAA6CV2	CL120	10/21/2003	7/8/2005	MT
1FVAA6CV4	CL120	10/21/2003	5/25/2005	PA
1FVAA6CV6	CL120	10/22/2003	5/18/2005	CA
1FVHA6CV0	CL120	6/11/2003	6/28/2003	AL
1FVHA6CV2	CL120	7/2/2003	10/17/2003	CA
1FVAA6CV2	CL120	5/14/2003	10/1/2004	IL
1FVAA6CV4	CL120	6/10/2003	7/1/2003	AL
1FVAA6CV6	CL120	7/30/2003	12/18/2003	NC
1FVHA6CVX	CL120	9/2/2003	12/27/2003	CA
1FVHA6CV1	CL120	10/3/2003	1/9/2004	CA
1FVHA6CV3	CL120	11/6/2003	11/24/2003	OH
1FUJA6CG8	CL120	3/27/2003	4/28/2003	AZ
1FUJA6CGX	CL120	3/27/2003	4/28/2003	AZ
1FUJA6CG1	CL120	3/27/2003	4/28/2003	AZ
1FUJA6CG8	CL120	3/28/2003	5/1/2003	AZ
1FUJA6CGX	CL120	3/28/2003	4/16/2003	AZ
1FUJA6CG1	CL120	4/7/2003	4/16/2003	AZ
1FUJA6CG5	CL120	4/7/2003	4/16/2003	AZ
1FUJA6CG5	CL120	4/7/2003	4/16/2003	AZ
1FUJA6CG7	CL120	4/7/2003	5/23/2003	AZ
1FUJA6CG5	CL120	4/7/2003	4/16/2003	AZ
1FUJA6CG0	CL120	4/10/2003	4/16/2003	AZ
1FUJA6CG2	CL120	4/10/2003	4/16/2003	AZ
1FUJA6CG4	CL120	4/11/2003	4/25/2003	AZ
1FUJA6CG0	CL120	4/11/2003	5/1/2003	AZ
1FUJA6CG2	CL120	4/11/2003	5/1/2003	AZ
1FUJA6CG4	CL120	4/15/2003	5/1/2003	AZ
1FUJA6CG0	CL120	4/17/2003	5/1/2003	AZ
1FUJA6CG4	CL120	4/17/2003	4/25/2003	AZ
1FUJA6CG1	CL120	4/17/2003	4/25/2003	AZ

2005 Model Year Century and Columbia

Total = 55,959

VIN	Model	Built	Inservice	State
1FUJA6CG68	CL120	4/8/2004	5/24/2004	TN
1FUJA6CG88	CL120	4/8/2004	5/24/2004	TN
1FUJA6CGX	CL120	4/8/2004	5/24/2004	TN
1FUJA6CG15	CL120	4/8/2004	5/24/2004	TN
1FUJA6CG35	CL120	4/8/2004	5/24/2004	TN
1FUJA6CG55	CL120	4/8/2004	5/24/2004	TN
1FUJA6CG75	CL120	4/12/2004	5/24/2004	TN
1FUJA6CG95	CL120	4/12/2004	5/24/2004	TN
1FUJA6CG5	CL120	4/12/2004	5/24/2004	TN
1FUJA6CG7	CL120	4/13/2004	5/24/2004	TN
1FUJA6CG9	CL120	4/13/2004	5/27/2004	TN
1FUJA6CG0	CL120	4/13/2004	5/27/2004	TN
1FUJA6CG2	CL120	4/13/2004	5/27/2004	TN
1FUJA6CG4	CL120	4/14/2004	5/27/2004	TN
1FUJA6CG6	CL120	4/14/2004	5/27/2004	TN
1FUJA6CG8	CL120	4/14/2004	5/27/2004	TN
1FUJA6CGX	CL120	4/14/2004	5/27/2004	TN
1FUJA6CG1	CL120	4/16/2004	5/27/2004	TN
1FUJA6CG8	CL120	4/17/2004	5/27/2004	TN
1FUJA6CGX	CL120	4/19/2004	5/27/2004	TN
1FUJA6CG1	CL120	4/27/2004	6/18/2004	TN
1FUJA6CG3	CL120	4/27/2004	6/18/2004	TN
1FUJA6CG5	CL120	4/27/2004	6/18/2004	TN
1FUJA6CG7	CL120	4/29/2004	6/18/2004	TN
1FUJA6CG9	CL120	4/29/2004	6/18/2004	TN
1FUJA6CG0	CL120	4/30/2004	6/18/2004	TN
1FUJA6CG2	CL120	4/30/2004	6/18/2004	TN
1FUJA6CG4	CL120	4/30/2004	6/18/2004	TN
1FUJA6CG0	CL120	4/30/2004	6/18/2004	TN
1FUJA6CG2	CL120	4/30/2004	6/18/2004	TN
1FUJA6CG4	CL120	4/27/2004	6/25/2004	TN
1FUJA6CG6	CL120	4/28/2004	6/25/2004	TN
1FUJA6CG8	CL120	4/28/2004	6/25/2004	TN
1FUJA6CGX	CL120	4/28/2004	6/25/2004	TN
1FUJA6CG1	CL120	4/28/2004	6/25/2004	TN
1FUJA6CG3	CL120	4/28/2004	6/25/2004	TN
1FUJA6CG5	CL120	4/29/2004	6/25/2004	TN
1FUJA6CG7	CL120	5/1/2004	6/25/2004	TN
1FUJA6CGX	CL120	5/1/2004	6/25/2004	TN
1FUJA6CG1	CL120	5/1/2004	6/25/2004	TN
1FUJA6CG3	CL120	5/4/2004	6/25/2004	TN
1FUJA6CG5	CL120	5/4/2004	6/25/2004	TN
1FUJA6CG7	CL120	5/4/2004	6/25/2004	TN
1FUJA6CG9	CL120	5/4/2004	6/25/2004	TN
1FUJA6CG0	CL120	5/5/2004	6/25/2004	TN
1FUJA6CG2	CL120	5/5/2004	6/30/2004	TN
1FUJA6CG4	CL120	5/5/2004	6/30/2004	TN
1FUJA6CG6	CL120	5/5/2004	6/30/2004	TN
1FUJA6CG2	CL120	5/5/2004	6/30/2004	TN
1FUJA6CG4	CL120	5/5/2004	6/30/2004	TN

Freightliner Steer Column Field Report Summary

a.	c.	d.	e.	e.	f.	g.	h.	i.	p.	q. r.
FSPR	Customer	VIN	Model	Year	Miles	Incident Date	Repairing Dealer	Claim Paid	Cause	Tech Comments
7833	[REDACTED]	1FUJBBCK3 [REDACTED]	ST1200 64S T	2005	1058	Oct-04	Freightliner of DesMoines- IO	29-Oct-04	Missing Weld	136 PULLED APART UPPER COVERS AND CHECKED STEERING WHEEL TURNS ALL THE AWAY AROUND CHECKED AT UPPER U JOINT AND SPINS IN IT NO PINCH BOLT LOOKS LIKE WAS WELDED CHECKED SHOP MANUAL IF REPLACEABLE AND LLOKS LIKE UPPER COLUMN NEEDS TO BE REPLACED.
10509	[REDACTED]	1FUJBBCV4 [REDACTED]	ST1200 64S T	2005	113531	Jan-06	Freightliner of Toledo- OH	31-Jan-06	Missing Welds	STEERING WHEEL WONT STAY ADJUSTED-TOWED TO SHOP. FOUND STEERING COLUMN HOUSING WELDS CRACKED. INSTALL DRIVELINE REMOVED BY TOW COMPANY. PULL STEERING COLUMN & REMOVE STEERING WHEEL. INSTALL NEW COLUMN & RELATED PARTS THAT WERE REMOVED.

Note

- n.: These two Field reports are related to the subject issue.
- j. k. l. m. o.: There are no reports of accidents, injuries, fatalities or third party or subrogation claims regarding these claims.
- s.: Both failures were the result of supplier manufacturing issues.

Note: This FSPR 0010509 is the original for the same failure documented on FSPR 10523.

FSPR Detail			
Serial Numbers			
Serial Number	U97814		
Fleet Range			
Lead SN		End Serial Number	No Vehicles
Product	Freightliner Century Class	Priority	0
Issue	Steering column mounting failed. mfg 12/04.		
Failed Part Name	Upper Steering Column	Category	0
Submitting DSM	Gary Rouke	Severity	1
Resp Dept			
SAR Number	1050900	Build Location	Cleveland, NC
Build Date	12/01/2004	Mileage	113000 0
Damage Code	532-001908130	BOM	
Primary Failed Item	A14-13459-002	Damage Code	532-001908130
EWR		MIP	

Problem	
Description	
The upper steering column mounting failed. Two welds attaching the mounting broke. The replacment column had 4 welds attaching this bracket. Photos have been sent to Jim Junor. Failed part sent to Jim, due to arrive in Portland 1/27/06	
Short Term Fix	
Resolution	

Ian Dawson

From: Jim Junor [JimJunor@Freightliner.com]
Sent: Thursday, November 16, 2006 12:46 PM
To: Ian Dawson
Cc: Jim Junor
Subject: 10509; U97814 Steering column mounting failed. mfg 12/04.
Attachments: U97814a.JPG; New A14-13459-002.JPG; U97814c.JPG; U97814b.JPG

Note: This FSPR is the original for the same failure documented on FSPR 10523.

FSPR Detail

Serial Numbers			
Serial Number	U97814		
Fleet Range			
Lead SN		End Serial Number	No Vehicles
Product	Freightliner Century Class	Priority	0
Issue	Steering column mounting failed. mfg 12/04.		
Failed Part Name		Upper Steering Column	Category
Submitting DSM		Gary Rouke	Severity
Resp Dept			0
SAR Number		1050900	Build Location
Build Date		12/01/2004	Cleveland, NC
Damage Code		532-001908130	Mileage
Primary Failed Item		A14-13459-002	113000 0
EWR			BOM
			Damage Code
			532-001908130
			MIP

Problem

Description
The upper steering column mounting failed. Two welds attaching the mounting broke. The replacment column ha
Short Term Fix
Resolution



CAC FS: Product Information Report

May 31, 2006

Request ID	00000000010523
Severity	DEALER REPAIR
Status	NEW
Priority	NORMAL
Failed Part Name	A14-13459-002
Primary Failed Item	ADJUSTABLE STEERING COLUMN ASSY
Responsible Dept	
Responsible Person	
Individual Assigned	JIM JUNOR
Attachments Indicator	NO
Create Date	Jan 30, 2006

Issue Text

Problem:-

Description:-

THE FAILURE HAPPENED AT A TA AS THE DRIVER WAS BACKING UP. WHEN IT OCCURRED HE DID HAVE SOME STEERING, BUT HAD TO HOLD THE WHEEL/COLUMN IN THE PROPER POSITION OTHERWISE THE U JOINT WOULD BIND. BASICALLY HE COULD MOVE THE WHEEL/COLUMN ALL OVER THE PLACE.

PICTURE U97814A SHOWS ONE SIDE OF THE WELD WHICH BROKE. IT LOOKS LIKE VERY POOR (OR NO) PENETRATION, AND MAYBE IS ONLY MEANT TO BE TACKED.

PICTURE U97814B SHOWS BOTH BROKEN WELDS AND IS JUST A LITTLE FURTHER BACK.

PICTURE U97814C SHOWS THE FLIP SIDE OF THIS MOUNTING, WHICH IS NOT WELDED. WHEN WE LOOKED AT THE REPLACEMENT PART WE NOTICED THIS WAS WELDED (SO 4 WELDS VERSUS 2) WHICH IS SHOWN IN PICTURE NEW A14-13459-002.

Short Term Fix

REPLACE WITH CORRECTLY MANUFACTURED COLUMN.

Resolution

DUPLICATE FSPR, SEE 10509

Action Log Last Entry

Submitting DSM	Region	Dir Code	Lead SN	End SN	Affected Units
GARY ROUKE	GREAT LAKES	LC	U97805	U97822	

Truck Info:-

VIN	Make	Mileage	Mileage Type	Model	Model Year	NHTSA CAT CD	NHTSA CAT NAME
1FUJBBCV05LU97812	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV15LU97818	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV75LU97810	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV85LU97816	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV35LU97805	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		

CAC FS: Product Information Report

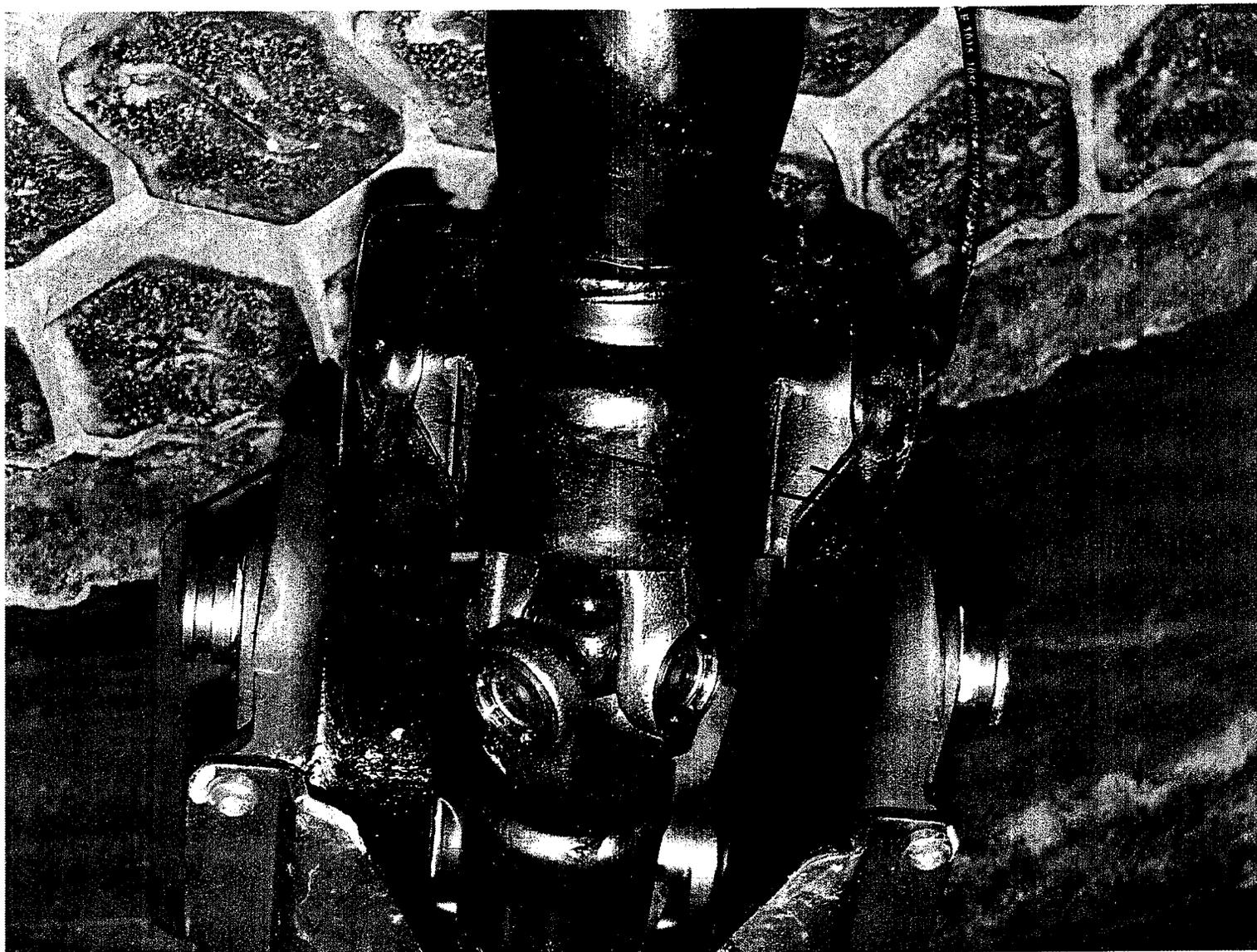


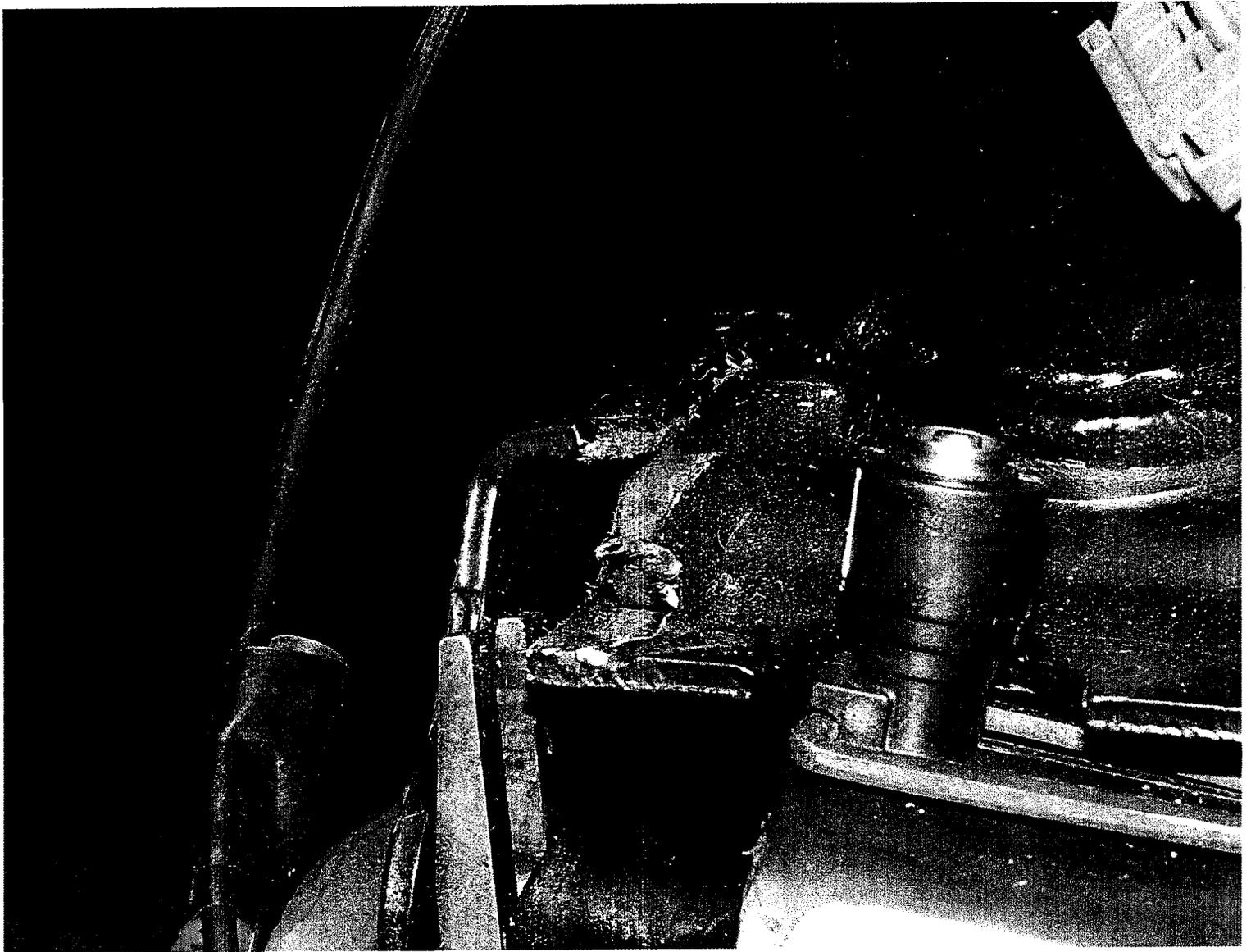
A DaimlerChrysler Company

May 31, 2006

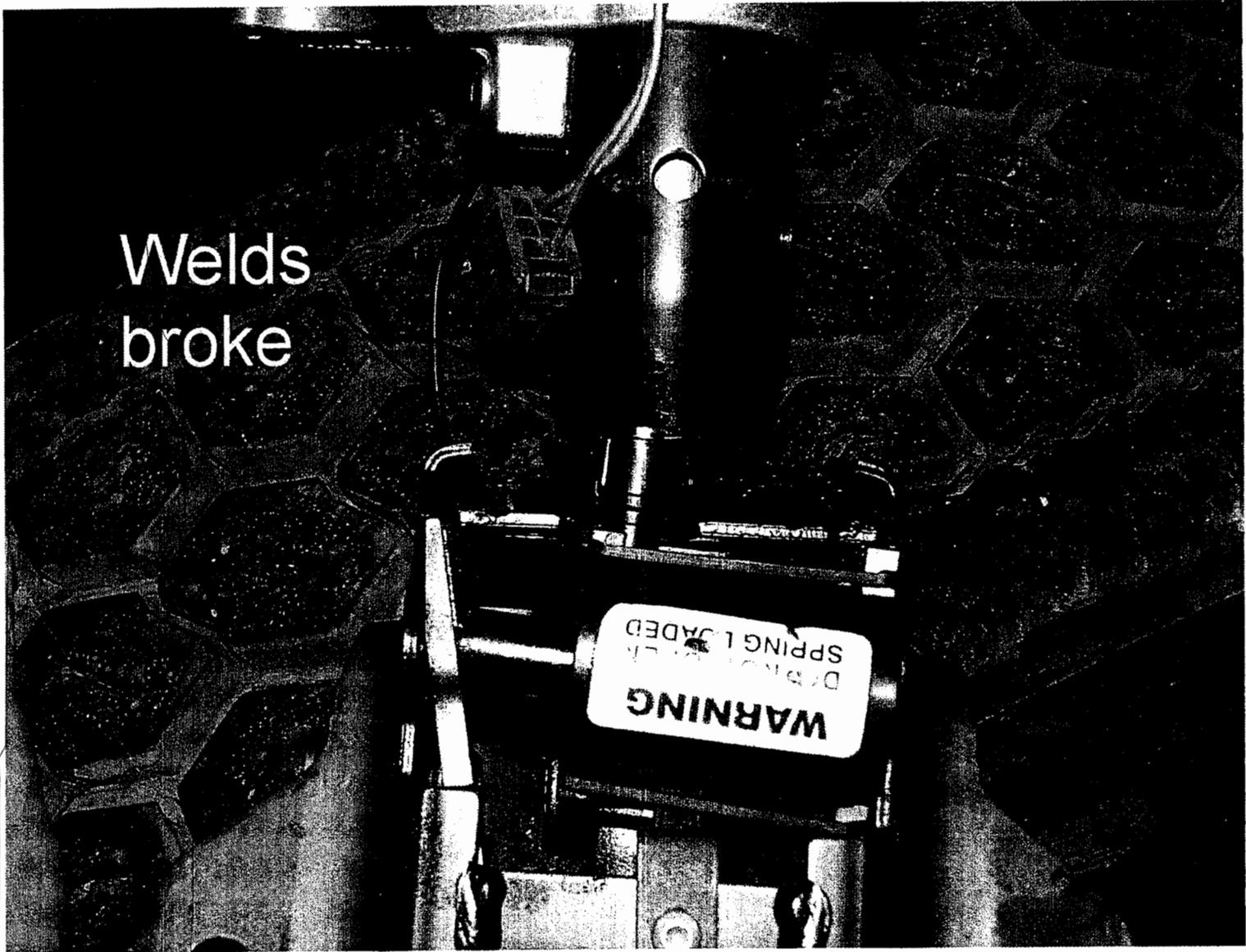
VIN	Make	Mileage	Mileage Type	Model	Model Year	NHTSA CAT CD	NHTSA CAT NAME
1FUJBBCV35LU97819	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCVX5LU97817	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCVX5LU97820	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV65LU97815	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV75LU97807	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV15LU97821	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV25LU97813	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV45LU97814	FREIGHTLINER		MLS	CENTURY CLASS	2005	01	STEERING
1FUJBBCV05LU97809	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV35LU97822	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV55LU97806	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV95LU97808	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		
1FUJBBCV95LU97811	FREIGHTLINER	0	MLS	CENTURY CLASS	2005		

Additional Info:-			
SYMPTOM CODE LEVEL 1	SYMPTOM CODE LEVEL 2	SYMPTOM CODE LEVEL 3	SYMPTOM CODE LEVEL 4
FRAME & CHASSIS	STEERING & HANDLING	FUNCTION	LOSS OF FUNCTION
BOM:-	?		
EWR:-	?		
MIP:-	?		
Parts at PDC Date:-			
SAR Number:-	?		
FRACAS:-	?		
Solution:-			
Service Bulletin:-			
Campaign:-			





Welds
broke



Steve Payne

From: Jim Junor
Sent: Tuesday, January 31, 2006 9:37 AM
To: Steve Payne
Subject: RE: Steering Column Failure, U97814

Steve, I found at least six claims on trucks built in Nov/Dec 2004 that either specifically mention weld failure or clearly describe an identical symptom.

Jim

From: Jim Junor
Sent: Monday, January 30, 2006 9:29 AM
To: Steve Payne
Cc: Floyd Frick
Subject: FW: Steering Column Failure, U97814

The part is at my desk.

Jim

From: Jim Junor
Sent: Wednesday, January 25, 2006 1:49 PM
To: Steve Payne
Cc: Floyd Frick
Subject: FW: Steering Column Failure, U97814

Steve, I just received this. Douglas Autotech is the supplier. I don't know if it's related, but Ray Martens has a customer that had to tighten up the nut that provides the clamping for the telescoping action.

Unless you have another plan, I'll have Gary ship the part to me.

Jim

From: Gary Rouke
Sent: Wednesday, January 25, 2006 1:31 PM
To: Eddie Blake; Jim Junor
Cc: Rick Palmer
Subject: Steering Column Failure, U97814

Eddie, Jim, here is some info on the steering column failure which occurred 1/23/06 in Toledo, OH. I will file a incident report, but there was no property damage done. It happened at a TA as the driver was backing up. When it occurred he did have some steering, but had to hold the wheel/column in the proper position otherwise the U joint would bind. Basically he could move the wheel/column all over the place.

Picture U97814a shows one side of the weld which broke. It looks like very poor (or no) penetration, and maybe is only meant to be tacked.

Picture U97814b shows both broken welds and is just a little further back.

Picture U97814c shows the flip side of this mounting, which is not welded. When we looked at the replacement part we noticed this was welded (so 4 welds versus 2) which is shown in picture New A14-13459-002.

There is a date code on the failed column of 11/24/04. The vehicle is a Century Class, so still under base warranty. Mileage is 113,000, in service 2/16/05. Vehicle belongs to Carlen Transport, out on Bangor, Maine.

7/19/2006

I have more pictures if needed. The dealer is Freightliner of Toledo (SKFD) and will hang onto the part until someone tells us to ship it. Thanks.

Attachment 2.09 Question 4

CAC FS: Product Information Report



Mar 1, 2005

Request ID	00000000007833
Severity	BREAKDOWN
Status	CLOSED
Priority	NORMAL
Failed Part Name	STEERING COLUMN SHAF
Primary Failed Item	A14-13459-002
Responsible Dept	
Responsible Person	
Individual Assigned	?
Attachments Indicator	YES
Create Date	Oct 24, 2004

Issue Text

Problem:-

Description:-

THE STEERING COLUMN SHAFT SNAPPED, JUST ABOVE WHERE THE LOWER U-JOINT KNUCKLE ATTACHES TO THE SHAFT. THE WELD WAS "INCOMPLETE" AROUND THE FULL CIRCUMFERENCE OF THE KNUCKLE ATTACHMENT PART OF THE SHAFT. THE VENDER HAS PICKED UP THE SHAFT, AND RETURNED IT TO CHICAGO FOR THEIR REVIEW OF THIS DESIGN. THE DLR NO LONGER HAS THE PART.

Short Term Fix

Resolution

Action Log Last Entry

Submitting DSM	Region	Dir Code	Lead SN	End SN	Affected Units
RONALD ROE	NORTH CENTRAL	ND			

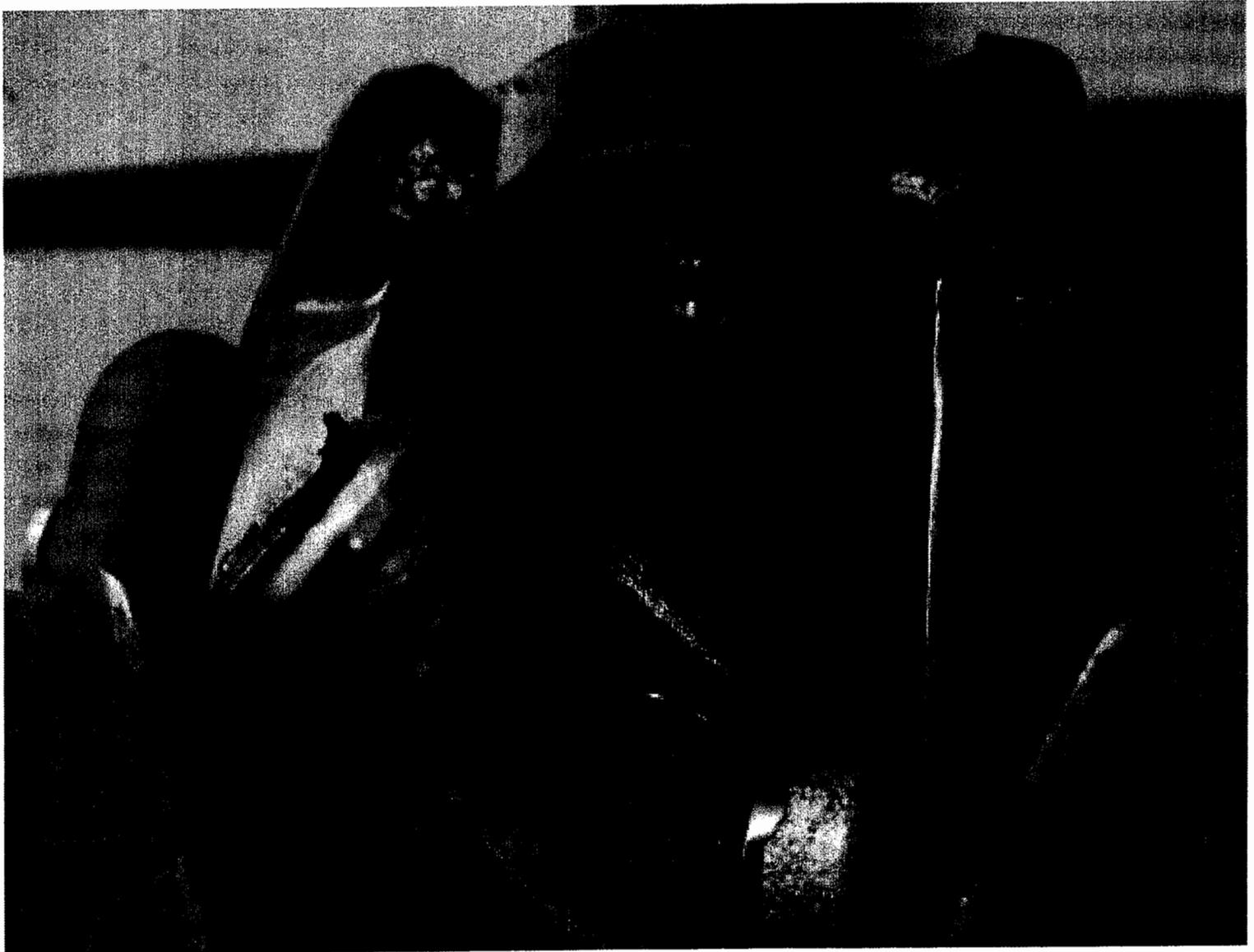
Truck Info:-

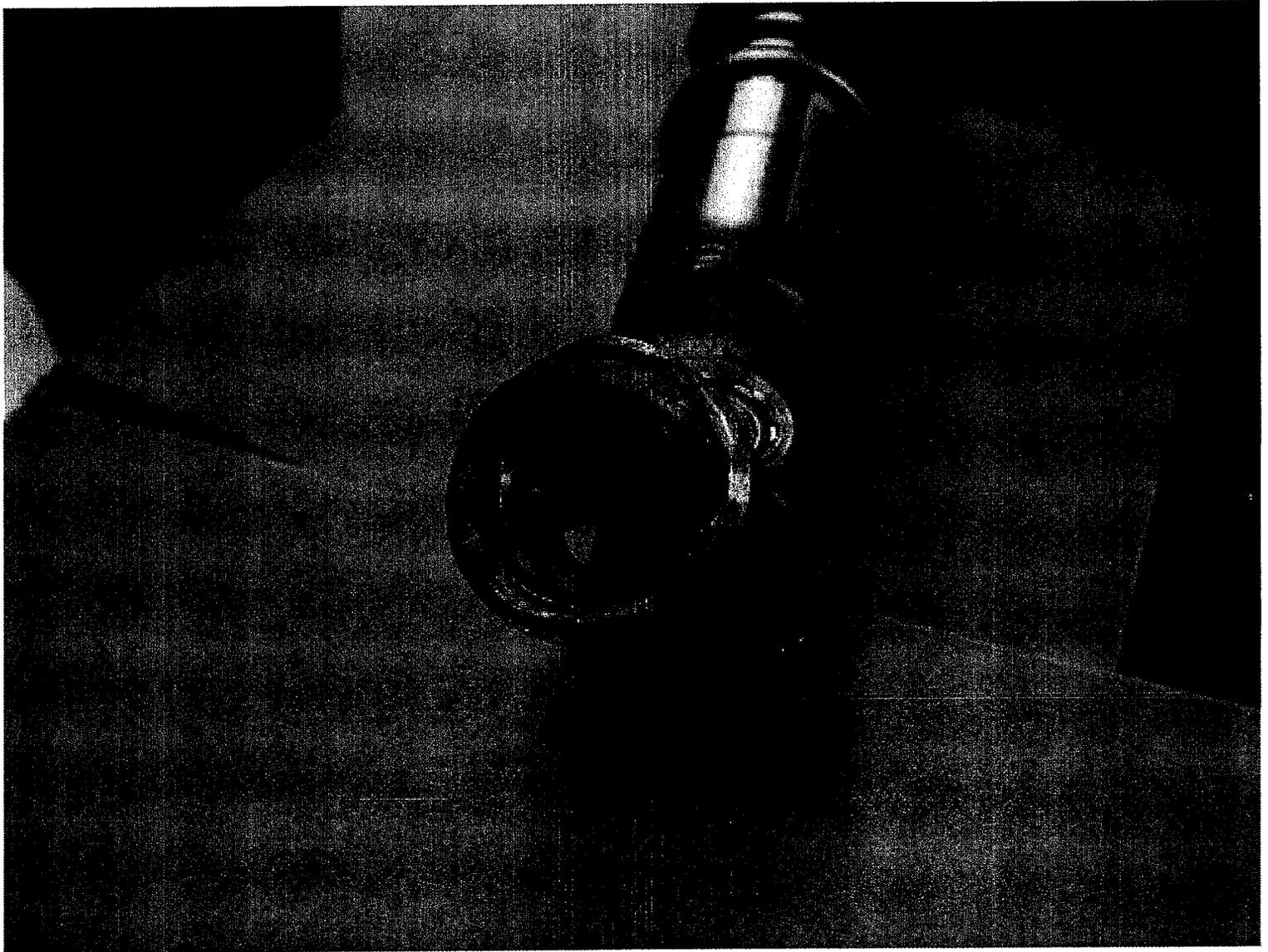
VIN	Make	Mileage	Mileage Type	Model	Model Year	NHTSA CAT CD	NHTSA CAT NAME
1FUJBBCK35LU92710	FREIGHTLINER	1,028	MLS	CENTURY CLASS	2005	01	STEERING

Additional Info:-

SYMPTOM CODE LEVEL 1	SYMPTOM CODE LEVEL 2	SYMPTOM CODE LEVEL 3	SYMPTOM CODE LEVEL 4
FRAME & CHASSIS	STEERING & HANDLING	FUNCTION	LOSS OF FUNCTION

BOM:- ?
 EWR:- ?
 MIP:- ?
 Parts at PDC Date:-
 SAR Number:- ?
 FRACAS:- ?
 Solution:-
 Service Bulletin:-
 Campaign:-





Question 5, Attachment 3.00

FLX / Douglas Autotech Steering Column Warranty (11/22/06)

Claim Number	Customer	VIN	Model	Year	Problem Occurred	Miles	Repairing Dealer	Operation	Labor Operation	Damage Code (A,B and C)	PPFN	Alleged Defect	Tech Comments
a	b	c	d	e	f	g	h	i	j,m,n,o	k	l		
1	T8AR00A740391 S		CST120	2005	17-Apr-05	163582		532-0011A	532-001AC	130	A14-1345I	Worn	REPLACED STEERING COLUMN FOUND STEERING COLUMN WORN.
2	T8AR00A708891 S		CST120	2004	17-Mar-05	198658		532-0011A	532-001AC	130	A14-1345I	Worn	REPLACED STEERING COLUMN FOUND STEERING COLUMN WORN.
3	T8AR00A923281 S		CST120	2004	20-Sep-05	385992		532-0011A	532-001AC	130	A14-1345I	Worn	REPLACED STEERING COLUMN FOUND STEERING COLUMN WORN.
4	FTED0005C5811 T		CL120	2005	14-Oct-05	88047		532-0011A	532-001AC	130	A14-1345I	Wobble	T/S FOR STEERING WHEEL WOBBLING. FOUND WHEN TILT STEERING COLUMN IS LOCKED IN. STILL MOVES.
5	RSAR00B390701 S		CL120	2004	24-Aug-05	237469		532-0011A	532-001AC	130	A14-1345I	Wobble	BAS--STEERING COLUMN ASSY WOBBLING STEERING COLUMN NEEDS TO BE REPLACED R/R STEERING COLUMN
6	NSFD0004C758 V		CST120	2005	12-Oct-04	1058		532-0011A	532-001AC	130	A14-1345I	Weld	136 PULLED APART UPPER COVERS AND CHECKED STEERING WHEEL TURNS ALL THE WAY AROUND CH
7	UISD0005B7201 T		CL120	2005	9-May-05	15343		532-0011A	532-001AC	130	A14-1345I	Weld	STEERING WHEEL COULUM BROKE. STEERING COLUMN BROKE DO TO INADEQUATE WELD. REPLACED C
8	PNFD0005S370 F		CL120	2005	1-Sep-05	31848		532-0011A	532-001AC	130	A14-1345I	Weld	STEERING COLUMN IS LOOSE. REMOVED STEERING COLUMN CHECKED AND FOUND THE WELDS FOR THE C
9	AAAR00A45E1031 F		CL120	2005	16-Nov-05	89467		532-0011A	532-001AC	130	A14-1345I	Weld	STEERING COLUMN ASSEMBLY BROKEN. STEERING COLUMN WILL NOT STAY LOCKED IN PLACE. LOCKING
10	B2BR00B758531 T		CST120	2005	27-Sep-05	110733		532-0011A	532-001AC	130	A14-1345I	Weld	HOUTX 728-01/38292/7/S STEERING WHEEL LOOSE/CK AND FOUND WELDS WERE CRACKED. POOR WORKI
11	SKFD0006A0861 C		CST120	2005	23-Jan-06	113531		532-0011A	532-001AC	130	A14-1345I	Weld	STEERING WHEEL WONT STAY ADJUSTED-TOWED TO SHOP. FOUND STEERING COLUMN HOUSING WELD
12	CDFD00A02689 N		CST120	2005	28-Nov-05	143659		532-0011A	532-001AC	130	A14-1345I	Weld	--GMR-- BRACKET FOR STEERING COLUMN IS BROKEN - VERY HARD TO STEER. CKD AND FOUND WELDS
13	VWFD0004B002 D		CL120	2005	21-Sep-04	563		532-0011A	532-001AC	345	A14-1345I	Weld	TILT COLUMN MACHINED INCORRECTLY SEE LINE #E GOT 2ND COLUMN INSTALLED IN TRUCK INSTALLED P
14	FBED0004B1061 E		CL120	2005	1-Sep-04	906		532-0011A	532-001AC	130	A14-1345I	Weld	STEERING COLUMN PART FELL OUT MATERIAL FAILURE. FOUND L-SHAPED BRACKET TH
15	MXFD00A25230 S		CL120	2005	21-Jan-05	14465		532-0011A	532-001AC	130	A14-1345I	Weld	**RM** D2MXFD0402 CPWA FILING FOR CUSTOMER REFUND. TILT COLUMN BROKEN. FOUND THE PIVOT
16	LJMD0005C4321 M		CL120	2005	11-Apr-05	74021		532-0011A	532-001AC	590	A14-1345I	Weld	TILT STEERING GOES UP AND DOWN BUT WONT GO IN AND OUT CHECKED OUT FOUND STEER COLUMN V
17	NLFDD00A444381 N		CST120	2005	26-Apr-06	156915		532-0011A	532-001AC	345	A14-1345I	Weld	CHECKED OVER AND FOUND THE TILT STEER ASSY WAS FROZE UP - COULD NOT UNFROZE - REMOVED A
18	AAAR00A45C0771 F		CL120	2005	20-Oct-05	168523		532-0011A	532-001AC	130	A14-1345I	Weld	PER DAVE BALL REVIEW-12/20/05 VISIT TILT RELIE
19	BDFD0004L2881 M		CL120	2004	5-Apr-04	3582		532-0011A	532-001AC	130	A14-1345I	Weld	STEERING COLUMN ASSEMBLY BROKEN
20	TGFD0004D386 F		CL120	2004	11-Jun-04	92520		532-0011A	532-001AC	590	A14-1345I	Weld	TOOK STEERING WHEEL, AND COLUMN PANELS TO FIND AIR LEAK. FOUND LEAK AT QUICK CONNECT ON T
21	SJSD0005AK03 M		CST120	2004	13-Jul-05	236167		532-0011A	532-001AC	345	A14-1345I	Weld	STEERING COLUMN WONT EXTEND... REMOVED AND REPLACED TILT STEERING COLUMN COND CORR
22	H8BR00053061 F		CST120	2005	15-Jul-05	46968		532-0011A	532-001AC	130	A14-1345I	Weld	CHECK AND ADVISE. TILT COLUMN WILL NOT RETRACT. IS FULLY EXTENDED NOW FOUND STEERING COLU
23	TFDD00A030471 A		CL120	2005	23-Jun-05	47258		532-0011A	532-001AC	345	A14-1345I	Weld	NOTE - FOUND THAT THE STEERING COLUMN WAS NOT STRAIGHT - REMOVED STEER WHEEL TO STRAIGH
24	PHFD0005A660 L		CST120	2005	29-Nov-05	121953		532-0011A	532-001AC	345	A14-1345I	Weld	LIFTING & LOWERING OF STEERING WHEEL PULLED AIR LINES TO STRG WHEEL COLUMN & OILED. COULD
25	SHFD0003C156 Z		CL120	2004	22-Jul-03	1704		532-0011A	532-001AC	130	A14-1345I	Weld	WHEN STEERING COLUMN WAS BEING INSTALLED FROM CLAIM # 05A659. PULLED PART OUT OF BOX AND
26	VGSD0005B593 S		CL120	2005	30-Mar-05	4886		532-0011A	532-001AC	940	A14-1345I	Weld	STEERING WHEEL NOT CENTERED. TRIED TO REMOVE STEERING WHEEL AND CENTER. FOUND THAT DUR
27	YFPD0005A2081 S		CL120	2005	4-Feb-05	9417		532-0011A	532-001AC	345	A14-1345I	Weld	REPAIR STEERING COLUMN BWILL NOT TELESCOPE. COLUMN BJAEMED A ND INOP REPLACED COLUMN RE
28	NLFDD00A285691 C		CL120	2005	2-Apr-05	15053		532-0011A	532-001AC	345	A14-1345I	Weld	TILT WHEEL WONT TELESCOPE OUT. CHECKED STEERING COLUMN. RI COVER. FOUND COLUMN HAD A T
29	HLFD0004F7511 L		CL120	2005	6-Oct-04	29179		532-0011A	532-001AC	590	A14-1345I	Weld	STEERING COLUMN WILL NOT TELESCOPE. REMOVED COLUMN COVER. WILL NOT TELESCOPE. REPLACED A
30	HFMDD005U477 L		CL120	2005	4-Mar-05	30479		532-0011A	532-001AC	345	A14-1345I	Weld	INSPECT. FOUND STEERING COLUMN WOULD TILT, BUT WONT GO UPWARDS OR DOWNWARDS (TELESCO
31	LTFD0004C4771 C		CL120	2005	1-Oct-04	37460		532-0011A	532-001AC	590	A14-1345I	Weld	TILT/TELE STEERING WHEEL INOP. TELESCOPE DOES NOT FUNCTION. CORRECTION: REMOVED STEERING
32	HKGD0005A903 F		CL120	2005	19-May-05	37559		532-0011A	532-001AC	130	A14-1345I	Weld	COMPLAINT: STEERING WHEEL WILL NOT TELESCOPE. IT WILL ONLY GO UP OR DOWN.
33	PSFD0006C3959 S		CL120	2005	28-Oct-05	46546		532-0011A	532-001AC	130	A14-1345I	Weld	TELESCOPIC COLUMN ON STEERING IS BROKEN. INSPECTED AND CONFIRMED THAT THE TELESCOPIC BR
34	VLFDD00A056151 L		CL120	2005	29-Oct-04	52734		532-0011A	532-00155	345	A14-1345I	Weld	STEERING COLUMN DOES NOT TELESCOPE REMOVED OLD STEERING COLUMN, CLEANED A
35	FSED00A03231 T		CL112	2005	8-Apr-05	53346		532-0011A	532-001AC	590	A14-1345I	Weld	REPAIR FOR STEERING COLUMN NOT TELESCOPING. CKD AIR SUPPLY TO COLUMN. OK. FOUND COLUMN B
36	DTFD0005A4571 L		CL120	2005	19-Aug-05	54564		532-0011A	532-001AC	345	A14-1345I	Weld	CUST COMPL OF TELESCOPIC STEER COLUMN WOULD NOT WORK. T/S TO FIND STEERING COLUMN BOUN
37	GUED0005B519 L		CL120	2005	1-Jul-05	54902		532-0011A	532-001AC	345	A14-1345I	Weld	CK & ADV. TELESCOPE WHEEL IS JAMMED REMOVED STEERING COLUMN FROM TRUCK THE SPLINES ON T
38	BVGD0005C371 T		CL120	2005	31-Jul-05	73443		532-0011A	532-001AC	590	A14-1345I	Weld	STEERING WHEEL WILL NOT TELESCOPE. REMOVED STEERING PANELS TRIED TO MOVE/ TRIED TO LUBRIC
39	TGFD0005A896 F		CL120	2005	25-Mar-05	92545		532-0011A	532-001AC	130	A14-1345I	Weld	STEERING COLUMN TELESCOPIC COLUMN GOES DOWN BY ITSELF BROKE INTERNALLY. R/R COLUMN
40	Y1AR00A109641 T		CL120	2005	31-Oct-04	93693		532-0011A	532-001AC	590	A14-1345I	Weld	STEERING COLUMN WILL NOT TELESCOPE TROUBLE SHOOT AND FOUND INTERNALLY BROK

FLX / Douglas Autotech Steering Column Warranty (11/22/0)

Claim Number	Customer	VIN	Model	Model Year	Problem Occurred	Miles	Repairing Dealer	Labor Operation	Damage Code (A,B and C)	PPFN	Alleged Defect	Tech Comments
a	b	c	d	e	f	g	h	i	j	k	l	m,n,o
41	BDFD0005L2141		CL120	2005	29-Apr-05	96319		532-0011A	532-001AC 130	A14-1345i	Telescope	STEERING WHEEL WONT TELESCOPE STEERING WHEEL WOULD NOT TELESCOPE, FAILED COLUMN REMO
42	Y1AR00A171961		CL120	2005	2-Aug-05	104708		532-0011A	532-001AC 590	A14-1345i	Telescope	DRIVER REPORTED THAT THERE WAS A PROBLEM WITH THE TILT/TELESCOPING STEERING COLUMN ASSY
43	BWFD0006B795		CL120	2005	7-Jun-06	193491		532-0011A	532-001AC 590	A14-1345i	Telescope	COMPL OF STEERING WHEEL PULLED THE HORN GOES ON. RMVD STEERING WHEEL & COVERS. FND SNA
44	HCGD000A00036		CST120	2005	27-Jul-06	200263		532-0011A	532-001AC 590	A14-1345i	Telescope	COMPLAINT: STEERING COLUMN WILL NOT STAY IN ADJUSTMENT(TELESCOPING) CAUSE: TELESCOPE SE
45	BNFD0006F087		CST120	2005	24-May-06	247851		532-0011A	532-001AC 130	A14-1345i	Telescope	TELESCOPIC STEERING COLUMNS IS INOP. PULLED LOWER COLUMN COVER AND OFUND THE COLUMN ASS
46	JHFD0006A9101		CST120	2005	11-Apr-06	251449		532-0011A	532-001AC 740	A14-1345i	Telescope	STEERING WHEEL GOES UP & DOWN WITH OUT USING AIR RELEASE ON FLOOR STEERING COLUMN TELES
47	CFBD0008D064		CL120	2004	13-Oct-03	7		532-0011A	532-001AC 345	A14-1345i	Telescope	TELESCOPING STEERING INOP. CHECKED, FOUND TILT COLUMN NOT INSTALLED. PULLED STEERING WHE
48	FFD00003CJ09f		CL120	2004	22-Oct-03	15		532-0011A	532-001AC 130	A14-1345i	Telescope	RESUB OF CHARGE BACK H89259 WITH CORRECTED PRIMARY FAILED PART NUMBER. FND @ PDI* STEERIN
49	FFD00004A03T		CL120	2004	12-Jan-04	15		532-0011A	532-001AC 130	A14-1345i	Telescope	FND @ PDI* AIR LEAK AT STEERING COLUMN ACTUATOR FITTING QUICK CONNECT FOR TILT/TELESCOPE.
50	NSFD0003C2510		CL120	2004	28-Aug-03	1951		532-0011A	532-001AC 590	A14-1345i	Telescope	CHECKED STEERING COLUMN WONT TELESCOPE TRIED LUBE TRIED TO ADJUST REMOVED COLUMN CHEC
51	PLFD0004A3891		CL120	2004	23-Feb-04	30775		532-0011A	532-001AC 590	A14-1345i	Telescope	STEERING COLUMN TILTS BUT DOESNT TELESCOPE. REMOVE COVER & INSPECT AIR CYLINDER WAS RE
52	CGFD0005F783		CL120	2004	28-Apr-05	34833		532-0011A	532-001AC 590	A14-1345i	Telescope	APPROVED BY GLEN THORNTON PER E-MAIL, 5-16-05 - APPROVED BECAUSE OF LOW MILES. REPAIR FOR T
53	TGFD0004A795		CL120	2004	29-Mar-04	72281		532-0011A	532-001AC 590	A14-1345i	Telescope	TELESCOPE ON STEERING NO WORKING REMOVED STEERING COLUMN AND REPLACED WITH NEW. CONI
54	T8AR00A00645T		CST120	2004	5-Mar-04	89494		532-0011A	532-001AC 130	A14-1345i	Telescope	TELESCOPIC STEERING COLUMN WAS INOP. COLUMN WOULD NOT TELESCOPE. REPLACED COLUMN.
55	NLFD000A198691		CL120	2004	18-Jul-04	118037		532-0011A	532-001AC 130	A14-1345i	Telescope	THE STEERING COLUMN WILL NOT TELESCOPE- INTERNAL FAILURE. REPLACE COLUMN ASSYX.
56	E3BR000579740T		CST120	2004	7-Apr-05	193579		532-0011A	532-001AC 345	A14-1345i	Telescope	T/S STEERING AND COULD NOT GET COLUMN TO TELESCOPE, TRIED TO PRY UP ON COLUMN WONT MOV
57	PWFD000A06961		CL120	2004	24-Feb-05	187822		532-0011A	532-001AC 345	A14-1345i	Telescope	TELESCOPE AKS 83031 SP. STEER COLUMN RELEASES AT RANDOM. TELESCOPE ASSY FAILING. REPLACED STEER COL
58	Z3AR000800947T		CST120	2004	23-May-06	270844		532-0011A	532-001AC 345	A14-1345i	Telescope	STEER COLUMN STUCK OUT. WONT GO BACK IN FOUND THAT SHAFT WAS RELEASING WOULD NOT MOVE.
59	PLFD0004C311T		CL120	2004	8-Sept-04	98972		532-0011A	532-001AC 345	A14-1345i	Sticking	CHECK FOR POPPING IN WHILE TURNING. FOUND STEERING SHAFT STICKING AND NOT SLIDING FREELY.
60	T3AR00A27482T		CL120	2004	30-Apr-05	201094		532-0011A	532-00155 345	A14-1345i	Sticking	DIAGNOSE AND REPAIR NEED 2 HANDS TO TILT COLUMN ORDERED N
61	VWFD0004B0001		CL120	2005	14-Sept-04	562		532-0011A	532-001AC 345	A14-1345i	Side-to-Side	CHECKED STEERING COLUMN FROZEN INSIDE
62	TGFD0004F2081		CL120	2005	18-Nov-04	11793		532-0011A	532-001AC 345	A14-1345i	Side-to-Side	CUSTOMER SAYS THE STEERING COLUMN HAS EXCESSIVE SLACK. WILL MOVE SIDE TO SIDE. TILT MECHA
63	HKGD0005A967		CL120	2005	25-May-05	53062		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN.FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
64	B2BR00B307001		CST120	2005	24-Dec-04	64271		532-0011A	532-001AC 590	A14-1345i	Side-to-Side	CUSTOMER SAYS THE STEERING COLUMN HAS EXCESSIVE SLACK. WILL MOVE SIDE TO SIDE. TILT MECHA
65	HHMD0005C259		CL120	2005	18-Oct-05	92205		532-0011A	532-001AC 740	A14-1345i	Side-to-Side	CHECK STEERING WHEEL FOR SHAKING, FOUND SHAFT INSIDE TILT COLUMN HAS EXCESSIVE PLAY AT BO
66	JHFD0005B5031		CST120	2005	29-Jun-05	128588		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
67	T3AR00A320871		CST120	2005	17-Nov-05	169499		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	FOUND WIRING FOR CITY HORN IS BROKEN DOWN INSIDE OF STEERING COL
68	T3AR00A34854T		CST120	2005	28-Feb-06	310486		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	TROUBLE SHOOT FOR STEERING WHEEL NOT LOCKING IN UP AND DOWN POSITION.FOUND STEERING CO
69	BXFD0003CC08		CL120	2004	11-Nov-03	15900		532-0011A	532-00155 130	A14-1345i	Side-to-Side	REMOVED HORN COVER FOUND THAT WIRING WAS BROKE OFF
70	T3AR00A15999T		CL120	2004	1-Feb-04	29550		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
71	B2BR00B094831		CST120	2004	28-Jul-04	45540		532-0011A	532-001AC 740	A14-1345i	Side-to-Side	FOUND WIRING FOR CITY HORN IS BROKEN DOWN INSIDE OF STEERING COL
72	PWFD00A07530		CL112	2004	28-May-05	67756		532-0011A	532-001AC 345	A14-1345i	Side-to-Side	TROUBLE SHOOT FOR STEERING WHEEL NOT LOCKING IN UP AND DOWN POSITION.FOUND STEERING CO
73	M6BR00A02387		CL120	2004	21-Nov-04	114391		532-0011A	532-001AC 590	A14-1345i	Side-to-Side	REPAIR FOR CITY HORN NOT WORKING. REMOVED HORN COVER FOUND THAT WIRING WAS BROKE OFF
74	T3AR00A17475T		CL120	2004	19-Mar-04	120283		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
75	STFD0005B151T		CL120	2004	29-Jun-05	172476		532-0011A	532-001AC 590	A14-1345i	Side-to-Side	TILT WHEEL WILL NOT LOCK INTO PLACE. MOVES AROUND ALL THE TIME. T/S FOR TILT WHEEL NOT LOCK
76	T3AR00A271151		CL120	2004	31-Mar-05	173448		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
77	T3AR00A27699T		CL120	2004	9-May-05	205958		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
78	T3AR00A28888T		CL120	2004	23-Jun-05	239641		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
79	F9BR00A04762T		CL120	2004	9-Jun-05	317052		532-0011A	532-001AC 590	A14-1345i	Side-to-Side	OUTSIDE REPAIR!!!!TRUCK IN SHOP AT CHRISTOPHER TRUCKS IN GREENVILLE, SC FOR STEERING COLUMN
80	T3AR00A31957T		CL120	2004	3-Nov-05	345983		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN.FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
81	T3AR00A30379T		CL120	2004	3-Sept-05	379060		532-0011A	532-001AC 130	A14-1345i	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC

FLX / Douglas Autotech Steering Column Warranty (1/22/06)

Claim Number	Customer	VIN	Model	Model Year	Problem Occurred	Miles	Repairing Dealer	Labor Operation	Damage Code (A,B and C)	PFPN	Alleged Defect	Tech Comments
a	b	c	d	e	f	g	h	i	j	k	l	m,n,o
82	T3AR00A346961		CL120	2004	28-Feb-06	402875		532-0011A	532-001AC 130	A14-1345I	Side-to-Side	CHECKED TELESCOPIC STEERING COLUMN. FOUND COLUMN ASSY BROKEN INTERNALLY ON TELESCOPIC
83	VGS00005A768		ST120	2005	31-Jan-05	21978		532-0011A	532-001AC 345	A14-1345I	Seize	CUSTOMER STATES REPAIR TELESCOPIC STEERING ALL THE WAY OUT & WILL NOT TELESCOPE BACK DO
84	DRRD0004C094		CL120	2005	29-Sep-04	40175		532-0011A	532-001AC 345	A14-1345I	Seize	STEERING COLUMN WILL NOT TELESCOPE/COLUMN SEIZED INTERNA VERIFY COLUMN SEIZED AND CANN
85	CFBD0006B064		ST120	2005	1-Apr-06	148430		532-0011A	532-001AC 590	A14-1345I	Seize	CK STEERING WILL TILT OR TELESCOPE.CHECKED AND INSPECTED TO FIND STEERING COLUMN ASSY. SE
86	T8AR00A28874		ST120	2004	1-Oct-03	27790		532-0011A	532-001AC 130	A14-1345I	Seize	STEERING WHEEL WILL TILT, NOT TELESCOPIC. SHAFT SEIZED AT SPLINES. REMOVED ALL COLUMN COVE
87	VLED00004B468		CL120	2004	8-Feb-04	30215		532-0011A	532-001AC 345	A14-1345I	Seize	TELESCOPIC STEERING INOP SPLINES SEIZED UP TOOK STEER COLUMN APART ENOUGH TO SEE WHAT W
88	BXFD0003CE21		CL120	2004	7-Nov-03	51567		532-0011A	532-001AC 345	A14-1345I	Seize	STEERING COLUMN WONT TELESCOPE, FOUND COLUMN SEIZED INTERNAL, R&R COLUMN AND TESTED O
89	A4AR0014H989		CL120	2005	20-Apr-04	48		532-0011A	532-001AC 345	A14-1345I	Misc	COMMENT: BOTTOM BEARING POPPED OUT.
90	JTMD0005S536		CL120	2005	19-Apr-05	22640		532-0011A	532-001AC 345	A14-1345I	Misc	R&R TRIM PANELS, STEERING WHEEL, TURN SIGNAL SWITCH TO REPLACE STEERING COLUMN REASSEMB
91	VFPD0005A394		CL120	2005	4-Mar-05	78557		532-0011A	532-001AC 590	A14-1345I	Misc	STEERING COLUMN WONT RETRACT OR EXTEND 476-GOT PART THAT WAS ORDERED. TOOK DASH APART
92	XTFD0006B336		ST120	2005	22-Sep-06	182164		532-0011A	532-001AC 950	A14-1345I	Misc	STEERING WHEEL MOVES WHILE DRIVING FOUND STEERING SHAFT TO MOVE UP AND DOWN. STEERING S
93	J9BR002265931		CL120	2005	27-May-06	211072		532-0011A	532-001AC 130	A14-1345I	Misc	AGREED TO POLICY PORSHION OF COST OF NEW STEERING COLUMN
94	XTFD0006B169		ST120	2005	1-Sep-06	252268		532-0011A	532-001AC 950	A14-1345I	Misc	JUST SAID COLUMN CAN BE PULLED IN AND OUT OF ONE POSITION,FOU ND TO BE CORRECT,REMOVED PA
95	CNGD0004A345		CL120	2004	26-Aug-04	51805		532-0011A	532-001AC 950	A14-1345I	Misc	STEERIGN COLUMN CRACKED. REMOVED BOTH PLASTIC PANELS, STEERING WHEEL, & T/SIGNAL SWITCH CH
96	T8AR00A44697		ST120	2004	30-Apr-04	100208		532-0011A	532-001AC 130	A14-1345I	Misc	REPLACED STEERING COLUMN IT GOES UP AND DOWN WITH OUT RELEASING CYLINDER.
97	CGFD0005A024		ST112	2004	7-Feb-05	106812		532-0011A	532-001AC 130	A14-1345I	Misc	COMPL: DRIVER STATES THAT STEERING WHEEL IS NOT IN PROPER LOCATION, NOT HORIZONTAL. CAUSE
98	XTFD0005A1001		ST120	2004	5-Jul-05	241472		532-0011A	532-001AC 130	A14-1345I	Misc	NEEDS WHEEL ASSEMBLY PULLED STEERING WHEEL AND COVERS DISCONNECTED ENTIRE COLUMN, REF
99	NFFD0006D698		CL120	2004	15-Sep-06	316019		532-0011A	532-001AC 590	A14-1345I	Misc	PART TO SHIP TO CUSTOMER PER RANDY SMITH; POLICY PART & FREIGHT CHARGES PART# A14-13459-00
#	B2BR00B61404		ST120	2005	26-Jun-05	8155		532-0011A	532-001AC 590	A14-1345I	Misc	CHILL/728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	B2BR00B2178		ST120	2005	16-Oct-04	20340		532-0011A	532-001AC 740	A14-1345I	Loose	OC OK /728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	B2BR00B42910		ST120	2005	29-Mar-05	23694		532-0011A	532-001AC 740	A14-1345I	Loose	LAVTN /728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	B2BR00B25488		ST120	2005	3-Nov-04	24841		532-0011A	532-001AC 740	A14-1345I	Loose	SL MO 728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	LWUD0005B582		CL120	2005	3-Jun-05	44502		532-0011A	532-001AC 130	A14-1345I	Loose	CHECK AND ADVISE ON LOOSE STEERING WHEEL. FOUND A BROKEN NUT ON THE COLUMN ASSEMBLY. RE
#	FFFD00A03496		CL120	2005	14-Dec-05	49632		532-0011A	532-001AC 130	A14-1345I	Loose	C/S STEERING IS LOOSE;ROADTEST-EXCESSIVE WANDER-GO BACK TO SHOP AND INSPECT-FOUND LEAK
#	B2BR00B54380		ST120	2005	29-May-05	51871		532-0011A	532-001AC 130	A14-1345I	Loose	LAVTN /728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	HBFD0006A372		CL120	2005	25-Jan-06	58203		532-0011A	532-001AC 130	A14-1345I	Loose	DIAG AND REPAIR FOR STEERING COLLOME LOOSE (PARTS HAVE BEEN BROKEN *866* REMOVED STEERING
#	RKFD0005A439		CL120	2005	2-May-05	62321		532-0011A	532-001AC 590	A14-1345I	Loose	CHECK THE STEERING TELE INOP AT TIMES,PULLED INTO THE SHOP AND FOUND THE STEERING TILT WHE
#	NPFD0006A790		CL120	2005	31-May-06	67927		532-0011A	532-001AC 345	A14-1345I	Loose	STEERING COLUMN FEELS LOOSE TO DRIVER, CHECKED AND FOUND EXCESSIVE PLAY IN STEERING COLI
#	FLED0006A131		CL120	2005	6-Jan-06	68884		532-0011A	532-001AC 740	A14-1345I	Loose	STEERING COLUMN WAS LOOSE. TRIED TO TIGHTEN AND WOULDNT TIGH TEN. NEW COLUMN WAS ORDER
#	WHFD00A0378		CL120	2005	8-Mar-05	70591		532-0011A	532-00155 950	A14-1345I	Loose	STEERING COLUMN LOOSE, DEFECTIVE STEERING COLUMN, REPLACED WITH NEW
#	R2AR00A20913		ST120	2005	6-Feb-06	85001		532-0011A	532-001AC 950	A14-1345I	Loose	CHECK AND FOUND STEERING COLUMN VERY LOOSE AND SHAKING ALL OVER FOUND PROBLEM TO BE IN T
#	B2BR00C07017		ST120	2005	25-Jan-06	103649		532-0011A	532-001AC 950	A14-1345I	Loose	STEER COLUMN COMING APART-FOUND STEERING COLUMN LOOSE-REMOVE AND REPLACE STEERING CO
#	B2BR00C33286		ST120	2005	6-Apr-06	112025		532-0011A	532-00155 130	A14-1345I	Loose	EB 11 /728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	B2BR00B94936		ST120	2005	18-Aug-06	129221		532-0011A	532-001AC 740	A14-1345I	Loose	CHILL/728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	B2BR0005A517		ST120	2005	27-Jan-06	129398		532-0011A	532-001AC 590	A14-1345I	Loose	DALTX /728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	B2BR00B96246		ST120	2005	3-Mar-05	141252		532-0011A	532-001AC 950	A14-1345I	Loose	REPAIR FOR STEERING COLUMN THAT HAS EXCESSIVE PLAY;868 CHECKED FOR THE STEERING COLUMN I
#	BWFD0006B17		CL120	2005	10-Feb-06	144768		532-0011A	532-001AC 740	A14-1345I	Loose	LOWAR /728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	B2BR00C2588		ST120	2005	5-Apr-06	151517		532-0011A	532-001AC 950	A14-1345I	Loose	T/S CHECK FOR STEERING COLUMN IS LOOSE - POSS. WTY - 1 HR CH STEERING COLUMN. 06B171 512 CHE
#	B2BR00C2876		ST120	2005	23-Jul-06	152876		532-0011A	532-001AC 740	A14-1345I	Loose	CHILL/728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#	PSFD0006C04		ST120	2005	29-Jul-06	220924		532-0011A	532-001AC 740	A14-1345I	Loose	HOUTX /728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
#			ST120	2005	12-Apr-06	227382		532-0011A	532-001AC 130	A14-1345I	Loose	STEERING COLUMN LOOSE, TELESCOPING MECHANISM WILL NOT HOLD, REPLACE COLUMN WITH NEW

FLX / Douglas Autotech Steering Column Warranty (11/22/06)

Claim Number	Customer	VIN	Model	Model Year	Problem Occurred	Miles	Repairing Dealer	Labor Operation	Damage Code (A,B and C)	PFPN	Alleged Defect	Tech Comments
a	b	c	d	e	f	g	h	i	j	k	l	m,n,o
B2BR00C345241			ST120	2005	29-Jul-06	237138		532-0011A	532-001AC 740	A14-1345I	Loose	EB 11728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
B2BR00C223951			ST120	2005	23-Jun-06	253824		532-0011A	532-001AC 740	A14-1345I	Loose	ATLGA 7728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
R2AR00A235571			ST120	2005	8-Aug-06	270951		532-0011A	532-001AC 950	A14-1345I	Loose	CK. FOR STEERING COLUMN NOT TILTING-COLUMN IS LOOSE-REMOVE AND REPLACE STEERING COLUMN
B2BR00C369681			ST120	2005	8-Sep-06	286899		532-0011A	532-001AC 740	A14-1345I	Loose	LOWAR 728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
MJFD0004K0501			CL120	2004	21-Jan-04	8		532-0011A	532-001AC 590	A14-1345I	Loose	CITY HORN IS INOP. FOUND WIRE RUNNING DOWN THE CENTER OF THE COLUMN HAD BROKEN LOOSE. REN
B2BR00B058381			ST120	2004	22-Jun-04	57678		532-0011A	532-001AC 740	A14-1345I	Loose	LOWAR728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
Z3AR00A0424301			ST120	2004	29-Apr-04	78322		532-0011A	532-001AC 345	A14-1345I	Loose	AS 82945 EK STEERING WHEEL LOOSE. THREADS ON STEERING COLUMN SHAFT STRIPPED. REPLACED S
J9BR00146722B			CL120	2004	23-Aug-04	96034		532-0011A	532-001AC 590	A14-1345I	Loose	STEERING LOOSE, COLUMN LOOSE, REPLACED WITH NEW, BILL HINSON SAID TO REPLACE, IF ANY QUEST
SHFD0004B030			ST112	2004	28-Dec-03	107298		532-0011A	532-001AC 500	A14-1345I	Loose	CK FOR STEERING BEING LOOSE. CK WHEEL BEARINGS, KING PINS, A ND LINKAGES, ALL CK OK. FOUND E
DMFD0005L207			ST120	2004	3-Oct-05	236496		532-0011A	532-001AC 345	A14-1345I	Loose	CP: REQUESTING #528-42, AS GOODWILL TO CUSTOMER. STEERING VERY LOOSE. R/R STEERING COLUMN
B2BR00C147961			ST120	2004	10-May-06	238949		532-0011A	532-001AC 740	A14-1345I	Loose	CHILL728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
HDM000A07641			CL120	2004	28-Sep-05	282190		532-0011A	532-001AC 590	A14-1345I	Loose	STEERING COLUMN LOOSE. FOUND STEERING COLUMN HAS TOO MUCH PLAY IN IT. REMOVED COLUMN C
24DM00A025781			CL120	2004	4-Oct-05	265825		532-0011A	532-001AC 740	A14-1345I	Loose	STEERING COLUMN LOOSE. VERIFIED COMPLAINT. REMOVED TRIM PANELS FROM COLUMN FOR ACCESS.
RSAR00B453801			CL120	2004	17-Jan-06	280865		532-0011A	532-001AC 950	A14-1345I	Loose	STEERING WHEEL IS LOOSE STEERING COLUMN HAS EXCESSIVE PLAY R/R STEERING COLUMN
B2BR00C345171			ST120	2004	30-Aug-06	294586		532-0011A	532-001AC 740	A14-1345I	Loose	CONN/C 728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
RSAR00B528971			CL120	2004	14-May-06	296404		532-0011A	532-001AC 950	A14-1345I	Loose	STEERING WHEEL IS LOOSE STEERING COLUMN HAS EXCESSIVE PLAY R/R STEERING COLUMN
T8AR00A0934331			ST120	2004	8-Oct-05	307263		532-0011A	532-001AC 130	A14-1345I	Loose	REPLACED STEERING COLUMN FOUND LOWER PIVOT IN LOWER TILT POSITION LOOSE, STEERING COLUMN
T8AR00A098881			ST120	2004	8-Oct-05	307263		532-0011A	532-001AC 130	A14-1345I	Loose	STEERING WHEEL WOULD NOT TILT - - LOOSE AT TILT MECHANISM. REMOVED STEERING COLUMN COVER
B2BR00C182821			ST120	2004	7-Jun-06	309026		532-0011A	532-001AC 740	A14-1345I	Loose	LOWAR 0728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
B2BR00C258771			ST120	2004	26-Jul-06	322331		532-0011A	532-001AC 740	A14-1345I	Loose	ATLGA 7728-01/38292/T/S STEERING WHEEL LOOSE/CK AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
RSAR00B543381			CL120	2004	9-Jun-06	381701		532-0011A	532-00155 950	A14-1345I	Loose	STEERING COLUMN LOOSE AND RASIES WHILE DRIVING T/S AND FOUND STEERING COLUMN ADJUSTER FAILED/INT
Z3AR00B054701			ST120	2004	25-Jul-06	369858		532-0011A	532-001AC 130	A14-1345I	Loose	AKS 28889 CO STEERING COLUMN LOOSE. LOCK BROKEN. PREMATURE METAL FATIUGE. REPLACED COLL
CFGD0006D346			CL120	2004	6-May-06	411535		532-0011A	532-001AC 590	A14-1345I	Loose	CK STEERING COLUMN FOR BEING LOOSE - CKD & FOUND STEERING COLUMN WILL NOT LOCK - R/R COVER
JWS00005A302			CL120	2005	16-Feb-05	5		532-0011A	532-001AC 130	A14-1345I	Lock	STEERING COLUM (AIR ADJUST) NOT LOCKING IN PLACE. CKD FOUND STEERING COLUMN WILL NOT LOCK
A4AR0005M666			CL120	2005	5-Jan-05	25736		532-0011A	532-001AC 130	A14-1345I	Lock	STEERING COLUMN ASSEMBLY BROKEN STEERING COLUMN WILL NOT STAY LOCKED IN P
RSAR00B295941			CL120	2005	12-May-05	33709		532-0011A	532-001AC 130	A14-1345I	Lock	STEERING COLUMN TILT LOCK WILL NOT WORK T/S AND FOUND TILT LOCK BROKEN OFF OF COLUMN
UYSD0005A0411			ST120	2005	29-Dec-04	36673		532-0011A	532-001AC 590	A14-1345I	Lock	STEERING COLUMN WON'T TELESCOPE. REM. FLOOR PANELS, CK OPER. OF FOOT SWITCH, OK. REM. COL
FTED0005B970			ST120	2005	16-Jun-05	60358		532-0011A	532-001AC 590	A14-1345I	Lock	T/S FOR TELESCOPIC WHEEL NOT LOCKING IN PLACE CONFIRMED COMPLAINT.FOUND NO BROKEN COMP
SDFD00A08432			CL120	2005	11-Nov-05	65879		532-0011A	532-001AC 590	A14-1345I	Lock	CHECKED AND FOUND TILT AND TELESCOPING STEERING COLUMN WOULD NOT LOCK INTO PLACE. REMO
E3BR00579913T			CL112	2005	7-Apr-05	68012		532-0011A	532-001AC 345	A14-1345I	Lock	STEERING LOCKING UP WHEN TURNING FOUND U JOINT ON SHAFT BINDING UP. REPLACE SHAFT.
LUWD0005C256			ST120	2005	16-Aug-05	81368		532-0011A	532-001AC 590	A14-1345I	Lock	REPAIR FOR STEERING WHEEL TELESCOPING BY ITSELF. STEERING COLUMN WILL NOT LOCK. CHECKED.
HJLD0005F949			ST120	2005	9-Nov-05	87558		532-0011A	532-001AC 590	A14-1345I	Lock	COMPLAINT- TELESCOPIC STEERING COLUMN PROBLEM, WONT LOCK INTO POSITION. CAUSE- FOUND
VWFD0005A641			CL120	2005	15-Jul-05	97712		532-0011A	532-001AC 345	A14-1345I	Lock	STEERING COULDN LOCKED UP, DIAGNOSE AND ADVISE IF NOT WARRANT STEERING COLUMN IS LOCKED U
Z3AR00A97190			ST120	2005	4-Apr-06	160624		532-0011A	532-001AC 130	A14-1345I	Lock	AKS 83321 KC STEERING COLUMN TELESCOPES BUT WONT LOCK IN POSITION. PREMATURE METAL FATI
M9BR00A04531			ST120	2005	21-Nov-05	165111		532-0011A	532-001AC 590	A14-1345I	Lock	CHECK STEERING COLUMN - FOUND THAT THE STEERING COLUMN WILL NOT TILT - LOCK RELEASE WILL
WFFD0005C464			ST120	2005	17-Jun-05	172262		532-0011A	532-001AC 590	A14-1345I	Lock	CK FOR STEERING COLUMN NOT LOCKING IN PLACE. INSP & FOUND LOCKING MECHANISM NOT HOLDING.
HJLD0006A852			ST120	2005	19-Feb-06	182860		532-0011A	532-001AC 130	A14-1345I	Lock	COMPLAINT: STEER TELESCOPING SYSTEM COMES UP WHILE DRIVING AND WONT LOCK. INTERNAL FAIL
FLFD00A00219			ST120	2005	30-Jun-05	185496		532-0011A	532-001AC 345	A14-1345I	Lock	REPAIR STEERING COLUMN TILTS BUT TELECOPE LOCKED UP. REPLACED STEERING COLUMN.
NTFD00A09286			CL120	2005	14-Mar-06	198999		532-0011A	532-001AC 590	A14-1345I	Lock	TELESCOPIC STEERING COLUMN DOES NOT LOCK INTO POSITION. INSP&CHK FOUND ST. COLUM INOP. INTE
HJLD0006F938			CL120	2005	30-Aug-06	212452		532-0011A	532-001AC 950	A14-1345I	Lock	REPAIR FOR STEERING WHEEL TEL & TILT THAT WILL NOT LOCK DEFECTIVE BUSHINGS 884 REMOVED ST
HJFD0006C013			ST120	2005	17-Apr-06	218963		532-0011A	532-001AC 950	A14-1345I	Lock	REPAIR FOR STEERING WHEEL TEL & TILT THAT WILL NOT LOCK DEFECTIVE BUSHINGS 884 REMOVED ST

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Claim Number	Customer	VIN	Model	Model Year	Problem Occurred	Miles	Repairing Dealer	Labor Operation	Damage Code (A,B and C)	PPFN	Alleged Defect	Tech Comments
a	b	c	d	e	f	g	h	i	j	k	l	m,n,o
## VPF000E40129			ST120	2005	18-Jul-06	231569		532-0011A	532-001AC 590	A14-1345I	Lock	STEERING COLUMN WILL NOT STAY LOCKED 4226.....REMOVED WHEEL, AND COLUMN.....INSTALLED NEW C
## REAR00B56371			CL120	2005	5-Jul-06	237765		532-0011A	532-001AC 590	A14-1345I	Lock	STEERING COLUMN WILL NOT STAY IN PLACE T/S AND FOUND STEERING COLUMN HAS FAILED (WILL NOT
## DTDF0006A3761			ST120	2005	12-Jul-06	238649		532-0011A	532-001AC 130	A14-1345I	Lock	COMPLAINT = STEERING WHEEL TELESCOPE MOVING UP&DOWN, CAUSE = STEERING COLUMN BROKEN, C
## P1BR00A026391			CL120	2005	12-Jun-06	242340		532-0011A	532-001AC 590	A14-1345I	Lock	CHECK TRUCK STEERING WHEEL MOVES UP & DOWN BY ITSELF. R&R STEERING COLUMN DUE TO NOT LO
## PLFD0006A7111			ST120	2005	30-Mar-06	249170		532-0011A	532-001AC 590	A14-1345I	Lock	REPAIR FOR THE CUST. STATES THE STEERING COLUMN LOCKS IN PLACE BUT STILL MOVES AROUND. VE
## AAAR0045E1021			ST120	2005	3-Dec-05	284394		532-0011A	532-001AC 345	A14-1345I	Lock	STEERING COLUMN ASSEMBLY BINDS,STICKS,SEIZED STEERING COLUMN WILL NOT STAY LOCKE
## P1BR00A026421			CL120	2005	13-Jun-06	286030		532-0011A	532-001AC 590	A14-1345I	Lock	CHECK TRUCK STEERING WHEEL MOVES UP & DOWN BY ITSELF. R&R STEERING COLUMN DUE TO NOT LO
## Z3AR00B099771			ST120	2005	2-Oct-06	353994		532-0011A	532-001AC 130	A14-1345I	Lock	CKS 29887 CO STEERING COLUMN WONT LOCK. LOCK MECHANISM BROKEN. PREMATURE FATIGUE. REPL
## Z3AR00B083281			ST120	2005	6-Sep-06	410043		532-0011A	532-001AC 130	A14-1345I	Lock	CKS 29450 CO STEERING COLUMN WONT LOCK. LOCK MECHANISM BROKE. PREMATURE FATIGUE. REPL
## SHFD0004B2331			CL120	2004	4-Feb-06	129228		532-0011A	532-001AC 130	A14-1345I	Lock	STEERING COLUMN WILL NOT LOCK IN POSITION. TILT LOCK IS BROK EN INTERNALLY. R/R TILT STEERING
## WFFF0000A4632			CL120	2004	13-Feb-04	38690		532-0011A	532-001AC 590	A14-1345I	Lock	STEERING COLUMN WONT STAY IN PLACE. LOCK LEVER NOT HOLDING TENSION ON PLATES, ALLOWING C
## JHFD0004B3651			ST120	2004	16-Jun-04	64562		532-0011A	532-001AC 345	A14-1345I	Lock	STEERING WHEEL LOCK ASSY IS BROKEN WILL NOT LOCK STEERING WHEEL COLUMN WILL NOT LOCK O
## TRFD0005A3471			CL120	2004	16-Mar-05	81040		532-0011A	532-001AC 345	A14-1345I	Lock	CK TELESCOP IN STEERING - CKD & FOUND IT WOULD NOT TILT OR UNLOCK - REPLCD TILT COLUMN & CK
## NGFD0004C1531			CL120	2004	12-Jul-04	121288		532-0011A	532-001AC 590	A14-1345I	Lock	(C-3) REPAIR FOR STEERING COLUMN DOES NOT LOCK IN PLACE FAILED TILT COLUMN VERIFY & LOCATE FA
## PVS00005N6131			ST120	2004	19-Aug-05	160487		532-0011A	532-001AC 130	A14-1345I	Lock	COMPLAINT STEERING COLUMN WILL NOT STAY LOCKED IN PLACE. CHECKED COLUMN AND FOUND THAT
## Y1AR00A107321			CL120	2004	16-Nov-04	194265		532-0011A	532-001AC 590	A14-1345I	Lock	DRIVER REPORTED THAT THE STEERING WHEEL LOCKS UPON TURNING AND THE TELESCOPE UP AND DO
## VPF000E40130			ST120	2004	20-Jul-06	270427		532-0011A	532-001AC 590	A14-1345I	Lock	REPAIR FOR STEERING COLUMN WILL NOT LOCK. 4049PICK UP NEW STEERING COLUMN FROM PARTS AN
## NFD000A391081			ST120	2004	13-Dec-05	274979		532-0011A	532-001AC 590	A14-1345I	Lock	STEERING WHEEL WONT LOCK WILL GO UP AND DOWN,REPLACED STEERING COLUMN,OK
## R5AR00B384131			CL120	2004	24-Aug-05	309447		532-0011A	532-001AC 590	A14-1345I	Lock	STEERING COLUMN MOVES IN AND OUT AND WILL NOT LOCK STEERING COLUMN ASSY NEEDS TO BE R
## NGFD0006A6171			ST120	2004	18-Feb-06	313204		532-0011A	532-001AC 345	A14-1345I	Lock	C-2) REPAIR TELESCOPING STEERING WHEEL FOR LOCKING IN PLACE. WHEEL WORKS ITS WAY UP WHEN
## PSFD0006E5681			CL112	2005	28-Aug-06	125733		532-0011A	532-001AC 130	A14-1345I	Leak	STEERING COLUMN LEAKING AT FITTING, MOLDED UNIT, REMOVE AND REPLACE COLUMN, DOUG HUNTE
## VEFD0005A9151			CL112	2004	22-Jul-05	44435		532-0011A	532-001AC 590	A14-1345I	Leak	COMPLAINT: STEERING PROBLEMS. CAUSE: STEERING COLUMN IS BROKEN. CORRECTION: R/R STEERING
## CBFD0004D9061			CL120	2004	13-Oct-03	7		532-0011A	532-001AC 345	A14-1345I	InOp	TILT STEERING INOP. CKD FOUND TILT INOP, FOUND STEERING COLUMN INOP, DEFECTIVE, REPLACED ST
## BNF00003Y7401			ST120	2004	14-Oct-03	15048		532-0011A	532-001AC 590	A14-1345I	InOp	REPAIR TILT STEERING INOP CHK FND STEERING COLUMN BAD WILL NOT RELEASE. REMOVE STEERING G V
## TBAR00A763921			ST112	2004	23-Apr-05	202800		532-0011A	532-001AC 130	A14-1345I	InOp	REPLACED STEERING COLUMN FOUND STEERING COLUMN INOP.
## BYGD0004B2461			CL120	2005	15-Sep-04	333		532-0011A	532-001AC 590	A14-1345I	Horn	WHEN TRUCK WAS CHARGED UP, FROM DEAD BATTERED, HORN WENT OF F, WOULD NOT SHUT OFF, PE
## DGF00004A7651			CL120	2005	19-Aug-04	2418		532-0011A	532-001AC 590	A14-1345I	Horn	CK/RRR INOP TOWN HORN-FOUND INOP AT TIME OF PDI. REMOVED HORN COVER, FOUND WIRES BROKEN
## MDWD0004A4481			ST120	2005	8-Aug-04	15000		532-0011A	532-001AC 590	A14-1345I	Horn	COMPLAINT:CITY HORN STUCK ON.CAUSE: CITY HORN WIRING SHORTED IN STEERING COLUMN. CORREC
## HLF00004F2111			ST120	2005	14-Sep-04	21714		532-0011A	532-001AC 590	A14-1345I	Horn	CK FOR CITY HORN GOES OFF WHEN TILT STEERING COLUMN. VERF COMPLAINT AND FOUND THE STEE
## BWFD0005A7801			ST120	2005	29-Mar-05	41458		532-0011A	532-001AC 590	A14-1345I	Horn	DRIVER STATES THAT THE CITY HORN GOES ON RANDOMLY/ANY TIME/SO 513 PULL APART THE STEERING W
## XBF000A042651			CL120	2005	31-Dec-04	46724		532-0011A	532-001AC 590	A14-1345I	Horn	CHECK FOR CITY HORN BLOWING UNLESS YOU UNPLUG IT. CHECKED & STEERING COLUMN IS BAD. REMO
## BWFD000562131			CL120	2005	12-Feb-05	99851		532-0011A	532-001AC 590	A14-1345I	Horn	CITY HORN INOP - SHORT IN UPPER STEERING COLUMN - REMOVED & REPLACED UPPER STEERING COLU
## TUF00005FH311			ST120	2005	5-Apr-05	100019		532-0011A	532-001AC 950	A14-1345I	Horn	REMOVED COVERS AND FOUND 1/4IN PLAY UP AND DOWN AND 1/2IN LEFT AND RIGHT. REMOVED STEERIN
## T6AR00A119291			CL112	2005	7-Apr-06	152885		532-0011A	532-001AC 130	A14-1345I	Horn	HORN BLOWS WHEN TURNING WHEEL TO THE RIGHT. R&R STEERING COLUMN, TEST UNIT ON ROAD, OK.
## VLED0006C5291			ST120	2005	26-May-06	174183		532-0011A	532-001AC 130	A14-1345I	Horn	R/R STEERING COLUMN ...BROKEN COLUMN... HORN BEEPS WHEN TURNING WHEEL, DISCONNECTED BAT
## HBF00003C0141			CL120	2004	1-Jul-03	1114		532-0011A	532-001AC 590	A14-1345I	Horn	867-ELECTRIC HORN NOT WORKING. REMOVED HORN BUTTON FROM STEERING WHEEL AND FOUND BOT
## SCFD0003W9571			CL120	2004	12-Aug-03	19944		532-0011A	532-001AC 590	A14-1345I	Horn	REMOVED HORN COVER TO TRY TO REMOVE STEERING WHEEL, FOUND THREADS DAMAGED AND THREA
## VGS00004H6081			CL120	2004	24-Sep-04	39973		532-0011A	532-001AC 590	A14-1345I	Horn	REPAIR CITY HORN BLOWS AT ALL TIMES. CHECKED AND FOUND SNAP RING IS MISSING FROM STEERING
## A4AR0005M9691			CL120	2004	3-Feb-05	75135		532-0011A	532-001AC 130	A14-1345I	Horn	STEERING COLUMN ASSEMBLY BROKEN HORN BLOWS WHILE TURNING STEERING WHEEL
## VGS0000510561			CL120	2004	25-Jan-05	85969		532-0011A	532-001AC 130	A14-1345I	Horn	CITY HORN WILL NOT BLOW,CHECKED AND FOUND OPEN CIRCUIT IN WIRE IN STEERING COLUMN. REPLAC
## N1AR0009749751			ST120	2004	9-Feb-05	142176		532-0011A	532-001AC 590	A14-1345I	Horn	HORN STAYS ON ALL THE TIME. HORN SHORT IN STEERING C

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Claim Number	Customer	VIN	Model	Model Year	Problem Occurred	Miles	Repairing Dealer	Labor Operation	Damage Code (A,B and C)	PPFN	Alleged Defect	Tech Comments
a	b	c	d	e	f	g	h	i	j	k	l	m,n,o
##	UISD0004D848T		CST120	2004	3-Jul-04	260181		532-0011A	532-001AC 345	A14-1345I	Horn	CUST SAYS STEERING WHEEL IS LOSE AND HORN HONKS ALL THE TIME. COLUMN APPEARS TO HAVE PL
##	GFFD0005GB10		CL120	2005	24-Mar-05	49687		532-0011A	532-001AC 130	A14-1345I	Excess Play	EXCESSIVE PLAY IN STEERING TILT MECHANISM, FOUND TILT STRUCTURE IS BAD, REPLACED STEERING
##	DMFD0005H885		CST120	2005	23-Aug-05	109553		532-0011A	532-001AC 960	A14-1345I	Excess Play	HAS A LOT OF PLAY IN TILT STEERING COLUMN PLAY IN STEERING COLUMN R / R TILT STEERING COLUMN
##	RSAR0005E45991		CL120	2005	19-Jun-06	150776		532-0011A	532-001AC 590	A14-1345I	Excess Play	STEERING COLUMN HAS EXCESSIVE PLAY T/S AND FOUND STEERING COLUMN WILL NOT LOCK R/R STEER
##	PSFD0006E4881		CST120	2005	22-Aug-06	302485		532-0011A	532-001AC 590	A14-1345I	Excess Play	STEERING COLUMN EXCESSIVE PLAY TICKET BY DOT INSPECTION CHECK COLUMN, REMOVE AND REPL
##	RSAR0005A52561		CL120	2004	11-Nov-03	15602		532-0011A	532-001AC 950	A14-1345I	Excess Play	PERFORMANCE SUPPORT-- STEERING COLUMN HAS EXCESSIVE PLAY AND IS UNSAFE TO DRIVE TRK IS D
##	BLFD0004A3461		CL112	2004	5-Apr-04	28959		532-0011A	532-001AC 130	A14-1345I	Excess Play	CHECK FOR STEERING WHEEL IS SLOPPY, CHECK STEERING WHEEL NUT, IS TIGHT, REMOVE COLUMN CO
##	SXFD0004A0451		CST120	2004	19-Feb-04	58388		532-0011A	532-001AC 740	A14-1345I	Excess Play	*CPWA* STEERING COLUMN HAS EXCESSIVE PLAY. STEERING COLUMN DEFECTIVE/WORN. R&R STEERING
##	RSAR0005A954451		CL120	2004	17-Jun-04	149123		532-0011A	532-00155 950	A14-1345I	Excess Play	STEERING SHAFT ASSY HAS EXCESSIVE PLAY STEERING SHAFT ASSY NEEDS TO BE REPLACED R/R S
##	BVGD0004D327		CL120	2004	19-Oct-04	192337		532-0011A	532-001AC 590	A14-1345I	Excess Play	STEERING COLUMN HAD TOO MUCH UP AND DOWN PLAY. R/R COLUMN. 4~
##	RSAR0001B37051		CL120	2004	30-Nov-04	247328		532-0011A	532-001AC 590	A14-1345I	Excess Play	STEERING COLUMN HAS EXCESSIVE PLAY STEERING COLUMN ASSY NEEDS TO BE REPLACED R/R ST
##	RSAR0005B56011		CL120	2004	24-Jul-06	420104		532-0011A	532-001AC 740	A14-1345I	Excess Play	TILT STEERING COLUMN HAS EXCESSIVE PLAY TILT STEERING COLUMN NEEDS TO RPCLD R/R TILT STE
##	WAFD0006T139		CST120	2004	16-Oct-06	545496		532-0011A	532-001AC 740	A14-1345I	Excess Play	TRADE TERMS- STEERING COLUMN HAS EXC PLAY. FND STEERING COLUMNING HAS EXCESSIVE PLAY R,R S
##	AAR0024N2401		CL120	2005	25-Aug-04	25041		532-0011A	532-001AC 130	A14-1345I	Broken	STEERING,COLUMN ASSEMBLY BROKEN
##	AAR0005H4381		CL120	2004	9-Nov-04	115019		532-0011A	532-001AC 130	A14-1345I	Broken	STEERING,COLUMN ASSEMBLY BROKEN
##	AAR0025A2341		CL120	2005	3-Jun-05	10480		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BROKEN
##	FYFD000A04611		CL120	2005	20-Jun-05	17164		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BROKEN,STICKS,SEIZED
##	AAR0025A2331		CL120	2005	14-May-05	19926		532-0011A	532-001AC 345	A14-1345I	Blind	CUSTOMER COMPLAINED OF STEERING BINDING/STIFF TESTED P/S SYSTEM, FLOW/PRESSURE- GOOD, C
##	AAR0025A2351		CL120	2005	21-Apr-05	28888		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	AAR0025S2827		CL120	2005	21-Jul-05	58860		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	AAR0025A2361		CL120	2005	13-May-05	61635		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	TGFD0005A640		CL120	2005	27-Feb-05	82038		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING COLUMN WILL NOT TELESCOPE
##	AAR0045E1041		CST120	2005	12-Oct-05	91379		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	AAR0025A2321		CST120	2005	20-Apr-05	135996		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	AAR00360173		CL120	2005	25-Jul-06	162524		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	AAR0036B7371		CST120	2005	6-Jul-06	178754		532-0011A	532-001AC 130	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BROKEN
##	AAR0026L5821		CL120	2005	3-May-06	200123		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	TBAR000A941211		CST120	2005	13-Oct-05	250000		532-0011A	532-001AC 130	A14-1345I	Blind	REPLACED STEERING COLUMN FOUND STEERING COLUMN BINDING NOT ADJUSTING.
##	PASD0003B9891		CL120	2004	4-Nov-03	11896		532-0011A	532-001AC 345	A14-1345I	Blind	*OTHER CHARGE IS FOR FREIGHT ON PARTS NOT IN STOCK & TRUCK HAD TO GO. CK & RPR FOR P/S NOIS
##	AAR0014H8911		CL120	2004	19-Mar-04	23400		532-0011A	532-001AC 345	A14-1345I	Blind	COMMENT: TILT BINDS UP AND WILL NOT TELESCOPE
##	ZAFD0004A4751		CL120	2004	9-May-04	97650		532-0011A	532-001AC 345	A14-1345I	Blind	CK TELESCOPIC STEERING COLUMN DOES NOT WORK-BIN DING. STEERING COLUMN BINDING-UP & DOWN
##	TBAR000A517201		CST120	2004	24-Jul-04	104023		532-0011A	532-001AC 130	A14-1345I	Blind	REPLACED STEERING COLUMN FOUND STEERING COLUMN BINDING NOT ADJUSTING T-TIME FOR DIAGNO
##	ZCFD0004AN09		CL120	2004	12-Apr-04	116362		532-0011A	532-001AC 345	A14-1345I	Blind	TELESCOPIC STEERING INOP. REMOVED BINDING INOP. COLUMN AND REPLACED.
##	TBAR000A744241		CST112	2004	23-Apr-05	202800		532-0011A	532-001AC 130	A14-1345I	Blind	REPLACED STEERING COLUMN FOUND STEERING COLUMN BINDING NOT ADJUSTING.
##	AAR0003AG788		CST120	2004	26-Nov-04	229112		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	TBAR000A772671		CST120	2004	10-May-05	249485		532-0011A	532-001AC 130	A14-1345I	Blind	REPLACED STEERING COLUMN FOUND STEERING COLUMN BINDING NOT ADJUSTING T-TIME FOR DIAGNO
##	AAR00026F8161		CST120	2004	15-May-06	307192		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	AAR0005M9960		CST120	2004	31-Jan-05	341970		532-0011A	532-001AC 345	A14-1345I	Blind	STEERING,COLUMN ASSEMBLY BINDS,STICKS,SEIZED
##	PWFD000A05451		CL112	2004	19-Jul-04	17500		532-0011A	532-001AC 590	A14-1345I	Adjust	TROUBLE SHOOT FOR TILT STEERING WHEEL WILL NOT MOVE UP OR DOWN. TRIED TO ADJUST BOLTS IN C
##	XSF0000A46301		CL120	2004	19-May-04	50992		532-0011A	532-001AC 130	A14-1345I	Adjust	STEERING ADJUSTER BROKEN, FOUND COLUMN ASSEMBLY IS BAD, CARRIER OUT OF LINE AND CAMT REF



Test Report Number: 4125

Date: 11/16/06

To:	RUEDISUELI, MATT
Subject:	6005001 Driver Entry Freightliner Request

Part Number
6005001-C

PIS Ref. Part Number

Quantity:
1

Gages Used For Testing

<i>Gage ID</i>	<i>Description</i>	<i>Last Calibration Date</i>
LA005	Linear Actuator LVDT	4/3/06
LL008	2,200 lbs Load Cell	4/7/06

Results Summary

Test Name: Driver Entry Durability

Criteria: No cracks or breakage after 50,000 cycles at a load of 979N and frequency of 1 Hz. Tilt and telescopic retention forces to be held after test. 6004011 (right hand drive)

<u>Sample Name</u>	<u>S/N</u>	<u>Results</u>	<u>Pass/Fail</u>
Sample 1	12		Pass

Please route this original and return to the Test Lab. Copies by request.

DIR. OF ENG	PE MGR	ENGINEER	OPERATOR Fox, Jason
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ENGINEERING LAB TEST REQUEST

Request #

4125

Submitted Date: 11/14/06

Requested By:

Parts Available: 11/14/06

RUEDISUELI, MATT

Part Removal: Store Parts for 12 months

TEST PURPOSE

freightliner requests

TEST ITEMS

<u>Part Number</u>	<u>Test Name</u>	<u>Type</u>	<u>Custom</u>
6005001-C	Driver Entry Durability	Durability	N

TEST SCHEDULE

Sample 1

6005001-C

1 - Driver Entry Durability



DURABILITY TEST LOG DATA SHEET

Request #:	4125
Sample Name:	Sample 1
Serial #:	12
Part #:	6005001-C

Test Name: Driver Entry Durability

Criteria: No cracks or breakage after 50,000 cycles at a load of 979N and frequency of 1 Hz. Tilt and telescopic retention forces to be held after test. 6004011 (right hand drive)

<i>Date</i>	<i>Time</i>	<i>Cycle Count</i>	<i>Status</i>	<i>Note</i>	<i>Operator</i>
11/15/06	7:39 AM	0	OK		Fox, Jason
11/15/06	1:03 PM	17,942	OK		Fox, Jason
11/15/06	3:23 PM	26,343	OK		Fox, Jason
11/16/06	7:34 AM	50,000	OK		Fox, Jason



DURABILITY TEST LOG DATA SHEET

Request #:	4126
Sample Name:	Sample 1
Serial #:	11
Part #:	6005001-C

Test Name: Vibration Fatigue

Criteria: No cracks or breakage or looseness after 10,000,000 cycles of vibration with the following conditions: $\pm 4.4 \text{ G @ } 14\text{Hz}$ applied at base of vibration fixture.

Date	Time	Cycle Count	Status	Note	Operator
11/14/06	3:27 PM	0	OK		Sieger, Jamie
11/15/06	7:24 AM	788,170	OK		Fox, Jason
11/15/06	3:24 PM	986,828	Stopped	On hold due to hydraulic over heating, will continue after Driver Entry test is	Fox, Jason
11/16/06	7:38 AM	986,829	OK	Test Restarted	Fox, Jason
11/17/06	7:55 AM	986,830	Stopped	Test Stopped to service cooling water supply	Fox, Jason
11/20/06	7:55 AM	986,831	OK	Test Restarted	Fox, Jason
11/20/06	2:42 PM	2,113,070	OK		Sieger, Jamie
11/21/06	7:36 AM	2,187,200	OK		Fox, Jason
11/21/06	10:53 AM	2,352,800	OK		Sieger, Jamie
11/22/06	7:51 AM	3,411,800	OK		Sieger, Jamie
11/22/06	1:04 PM	3,616,500	Stopped	test stopped higher priority test	Sieger, Jamie



ENGINEERING LAB TEST REQUEST

Request #

4127

Submitted Date: 11/14/06

Requested By:

Parts Available: 11/14/06

RUEDISUELI, MATT

Part Removal: Store Parts for 1 months

TEST PURPOSE

freightliner request

TEST ITEMS

<u>Part Number</u>	<u>Test Name</u>	<u>Type</u>	<u>Custom</u>
6005001-C	Telescope Durability (locked)	Durability	N

TEST SCHEDULE

Sample 1

6005001-C

1 - Telescope Durability (locked)



DURABILITY TEST LOG DATA SHEET

Request #:	4127
Sample Name:	Sample 1
Serial #:	13
Part #:	6005001-C

Test Name: Telescope Durability (locked)

Criteria: No cracks or breakage after 10,000 cycles. Column to be functional. Load = ± 890 N Frequency = 10 Hz

Date	Time	Cycle Count	Status	Note	Operator
11/14/06	11:59 AM	0	OK		Sha, Subin
11/14/06	1:06 PM	10,000	OK		Fox, Jason

**Test Report Number: 4128****Date: 11/15/06**

To:	RUEDISUELI, MATT
Subject:	6005001 Telescope Pull Out Strength

Part Number
6005001-C

PIS Ref. Part Number

Quantity:
1

Gages Used For Testing

<u>Gage ID</u>	<u>Description</u>	<u>Last Calibration Date</u>
LA004	TENSILE COMPRESSION LVDT	4/7/06
LL003	10,000 lbs Load Cell	

Results Summary

Test Name: Telescope Pull Out Strength

Criteria: With telescope unlocked ultimate strength to be 2,000 N minimum.

<u>Sample Name</u>	<u>S/N</u>	<u>Results</u>	<u>Pass/Fail</u>
Sample 1	14	Peak Load: 21,275.79 N	Pass

Note: Fixture clamps failed, NO WELD FAILURE.

Please route this original and return to the Test Lab. Copies by request.

DIR. OF ENG	PE MGR	ENGINEER	OPERATOR Fox, Jason
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ENGINEERING LAB TEST REQUEST

Request #

4128

Submitted Date: 11/14/06

Requested By:

Parts Available: 11/14/06

RUEDISUELI, MATT

Part Removal: Store Parts for 12 months

TEST PURPOSE

freightliner request (tel strength)

TEST ITEMS

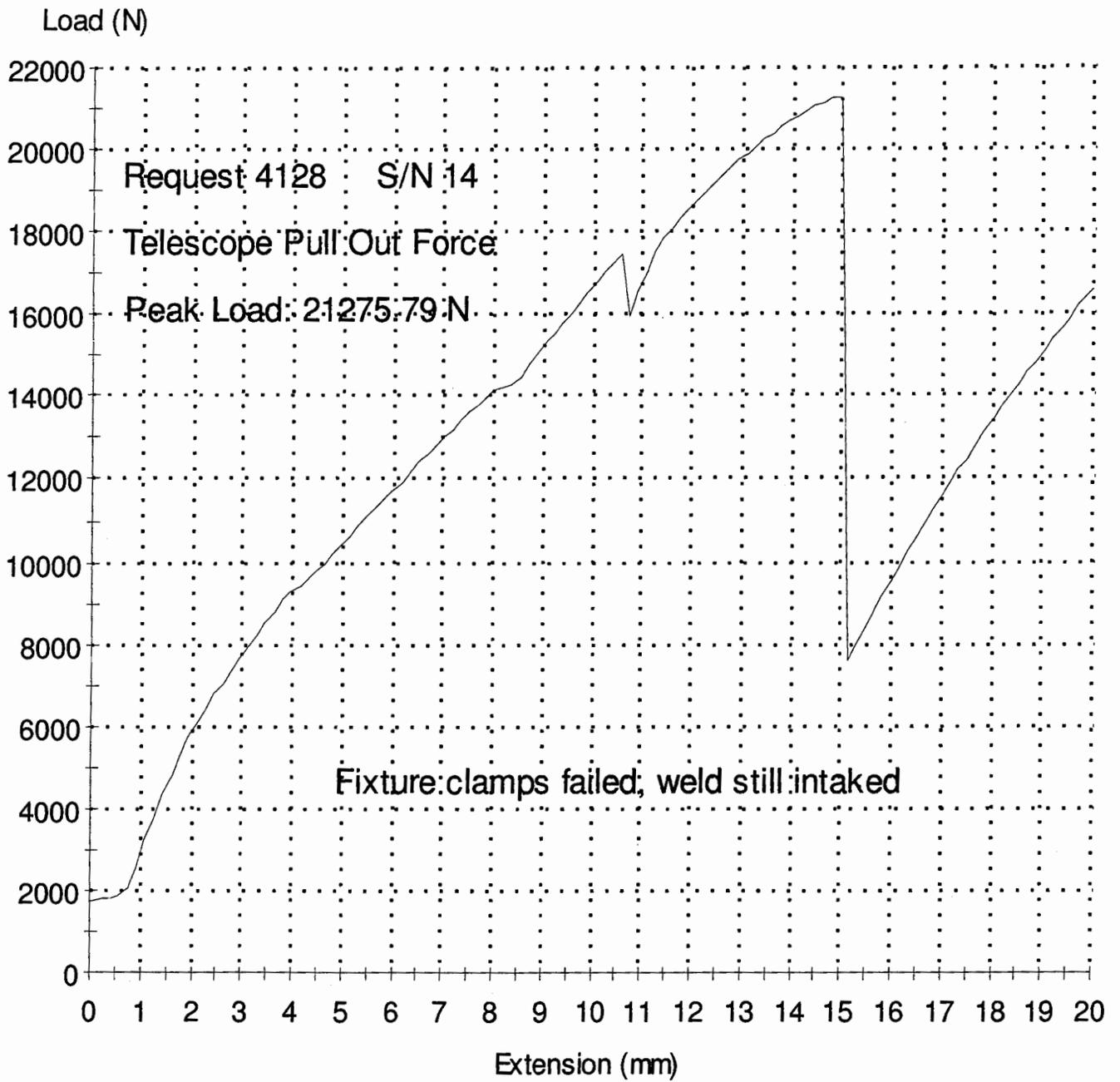
<u>Part Number</u>	<u>Test Name</u>	<u>Type</u>	<u>Custom</u>
6005001-C	Telescope Pull Out Strength	Measurement	N

TEST SCHEDULE

Sample 1

6005001-C

1 - Telescope Pull Out Strength



**Test Report Number: 4129****Date: 11/15/06**

To:	RUEDISUELI, MATT
Subject:	6005001 Crush Test Freightliner Request

Part Number
6005001-C

PIS Ref. Part Number

Quantity:
1

Gages Used For Testing

<u>Gage ID</u>	<u>Description</u>	<u>Last Calibration Date</u>
LL003	10,000 lbs Load Cell	4/7/06
LA004	TENSILE COMPRESSION LVDT	

Results Summary**Test Name:** crush test

Criteria: Apply the load in such a manner to simulate what type of load would be applied in the field. Reference test report 3993

<u>Sample Name</u>	<u>S/N</u>	<u>Results</u>	<u>Pass/Fail</u>
Sample 1	15	Upper Driver's Side Weld Failed @ 28,783 N	NA

Note: Peak Load: 31,138 N (machine limit stop)

See attached pictures of weld failure.

Please route this original and return to the Test Lab. Copies by request.

DIR. OF ENG	PE MGR	ENGINEER	OPERATOR Fox, Jason
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ENGINEERING LAB TEST REQUEST

Request #

4129

Submitted Date: 11/14/06

Requested By:

Parts Available: 11/14/06

RUEDISUELI, MATT

Part Removal: Store Parts for 12 months

TEST PURPOSE

freightliner request (crush test)

TEST ITEMS

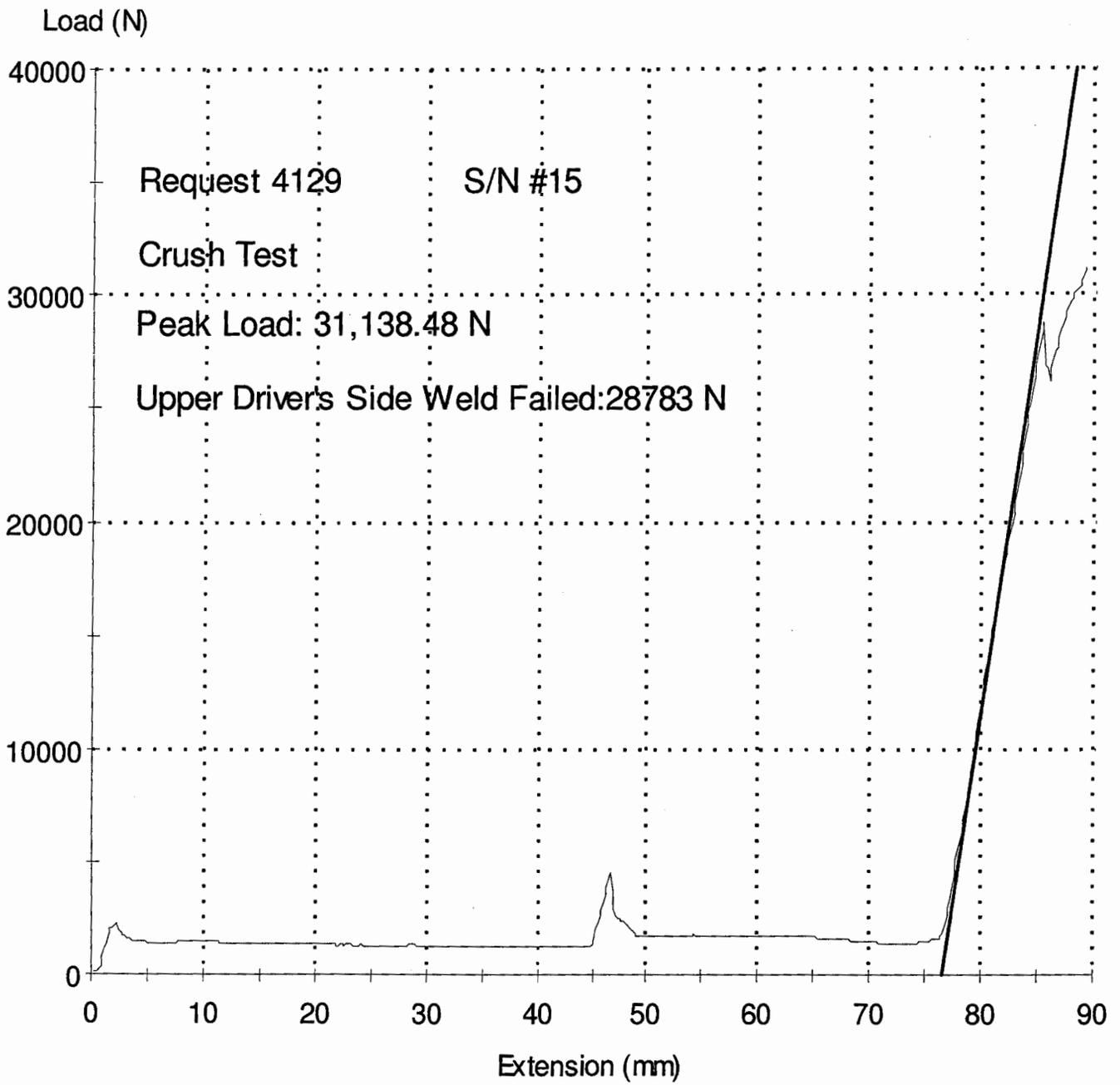
<u>Part Number</u>	<u>Test Name</u>	<u>Type</u>	<u>Custom</u>
6005001-C	crush test	Measurement	Y

TEST SCHEDULE

Sample 1

6005001-C

1 - crush test



Request 4129

11/15/2006

Crush Test Pictures

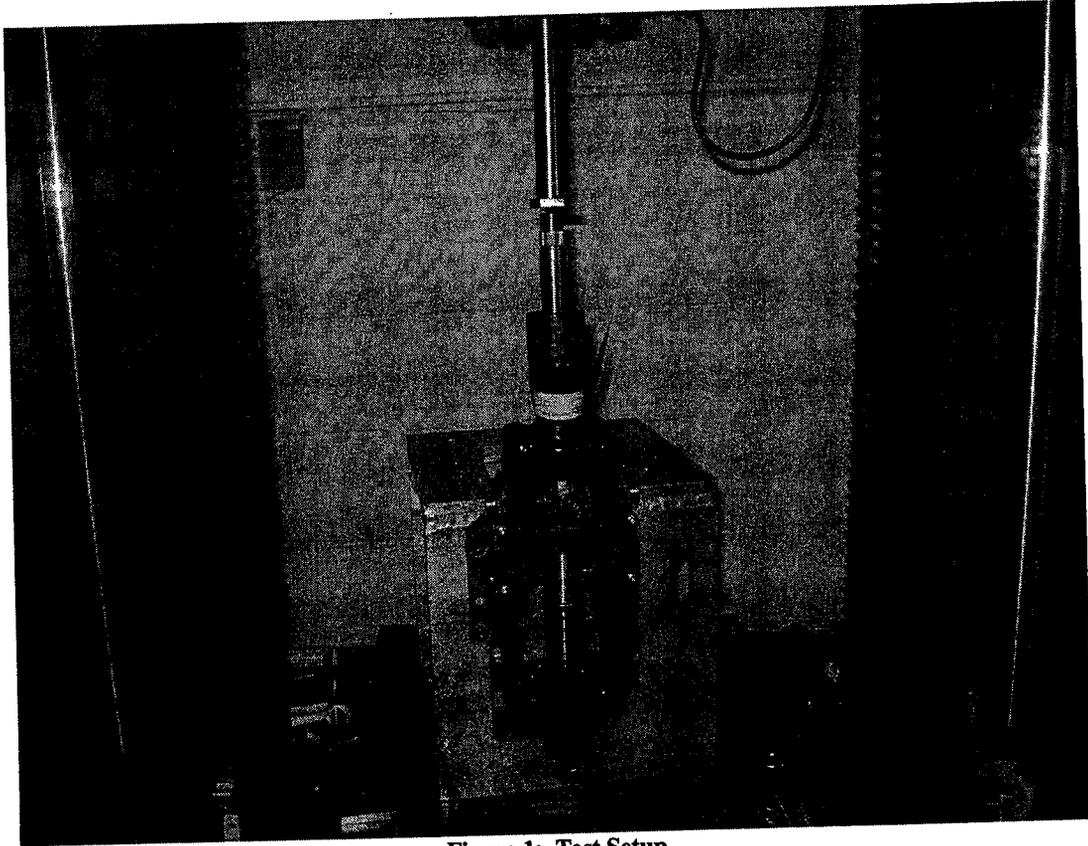


Figure 1: Test Setup

Request 4129

11/15/2006

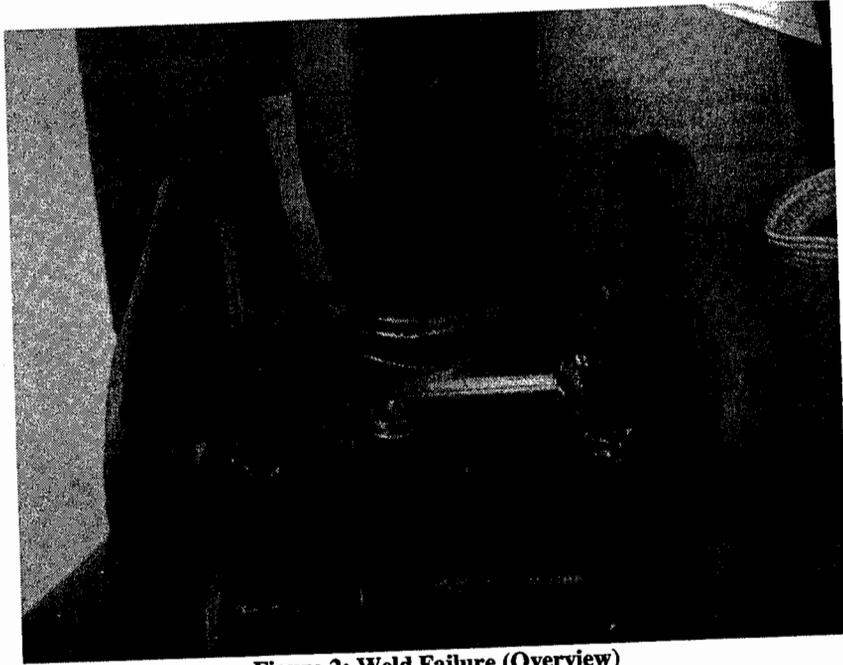


Figure 2: Weld Failure (Overview)

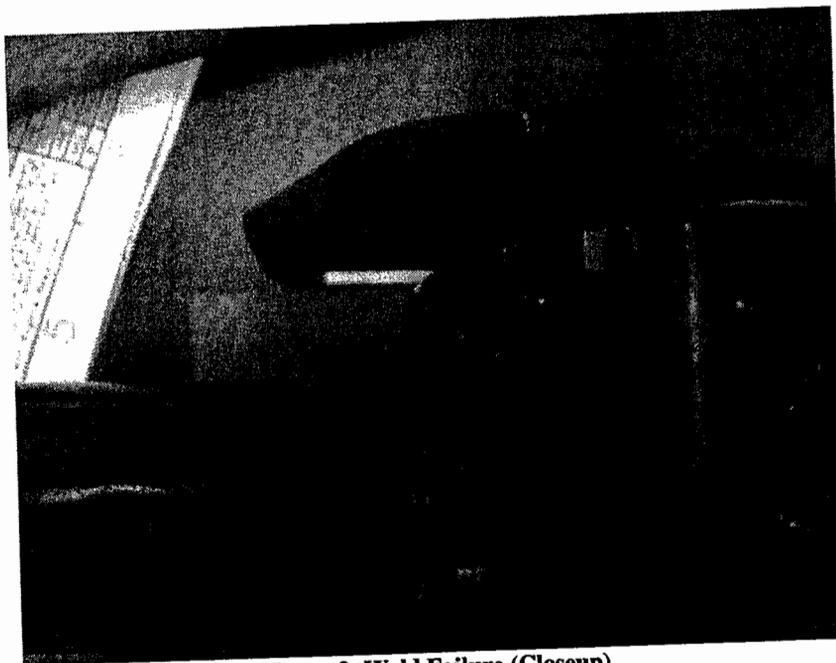


Figure 3: Weld Failure (Closeup)



Test Report Number: 4133

Date: 11/27/06

To:	RUEDISUELI, MATT
Subject:	6005001 with turned down weld. Vibration Fatigue.

Part Number
6005001-C

PIS Ref. Part Number

Quantity:
1

Gages Used For Testing

<u>Gage ID</u>	<u>Description</u>	<u>Last Calibration Date</u>
LA003	VIBRATION TABLE LVDT	4/3/06
LV026	Accelerometer	4/5/06

Results Summary

Test Name: Vibration Fatigue

Criteria: No cracks or breakage or looseness after 10,000,000 cycles of vibration with the following conditions: \pm 4.4 G @ 14Hz applied at base of vibration fixture.

Add. Info: Run at \pm 5.8 G @ 14 Hz for 1,000,000 cycles.

<u>Sample Name</u>	<u>S/N</u>	<u>Results</u>	<u>Pass/Fail</u>
Sample 1	22		NA

Please route this original and return to the Test Lab. Copies by request.

DIR. OF ENG	PE MGR	ENGINEER	OPERATOR Sieger, Jamie
--------------------	---------------	-----------------	----------------------------------



ENGINEERING LAB TEST REQUEST

Request #

4133

Submitted Date: 11/20/06

Requested By:

Parts Available: 11/27/06

RUEDISUELI, MATT

Part Removal: Store Parts for 12 months

TEST PURPOSE

Perform vibration testing, with modified specifications, on column with turned down weld between upper shaft and u-joint assembly.

TEST ITEMS

<u>Part Number</u>	<u>Test Name</u>	<u>Type</u>	<u>Custom</u>
6005001-C	Vibration Fatigue	Durability	N
— Run at +/-5.8 G @ 14 Hz for 1,000,000 cycles.			

TEST SCHEDULE

Sample 1

6005001-C

1 - Vibration Fatigue



DURABILITY TEST LOG DATA SHEET

Request #:	4133
Sample Name:	Sample 1
Serial #:	22
Part #:	6005001-C

Test Name: Vibration Fatigue

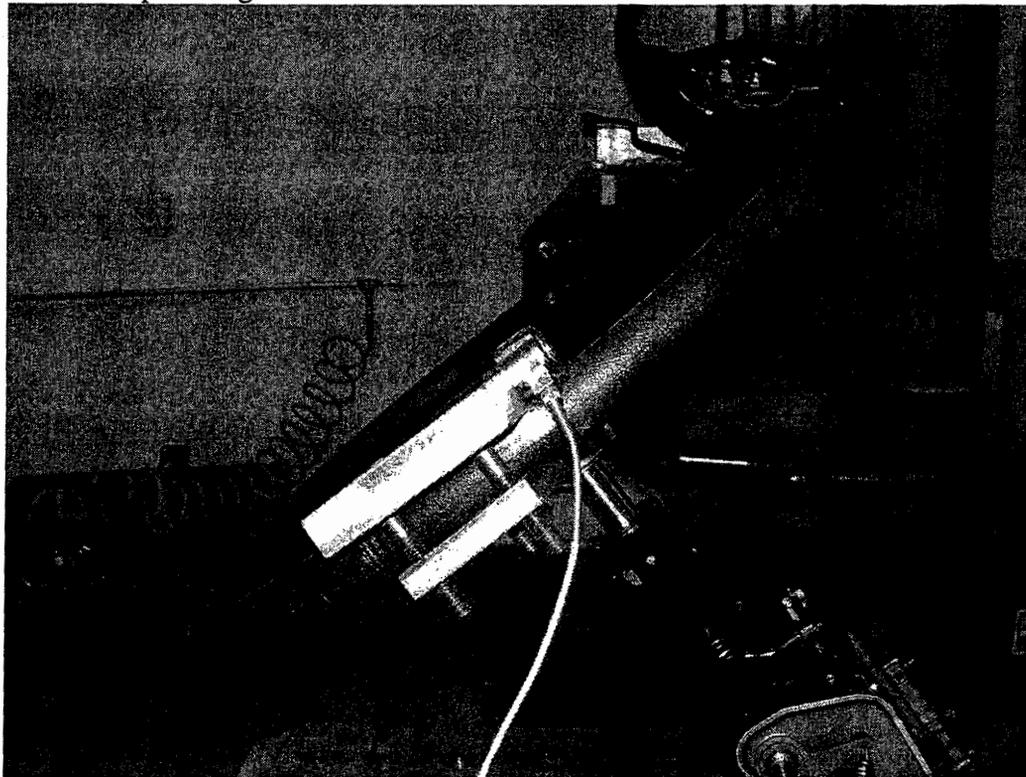
Criteria: No cracks or breakage or looseness after 10,000,000 cycles of vibration with the following conditions: $\pm 4.4 G @ 14Hz$ applied at base of vibration fixture.

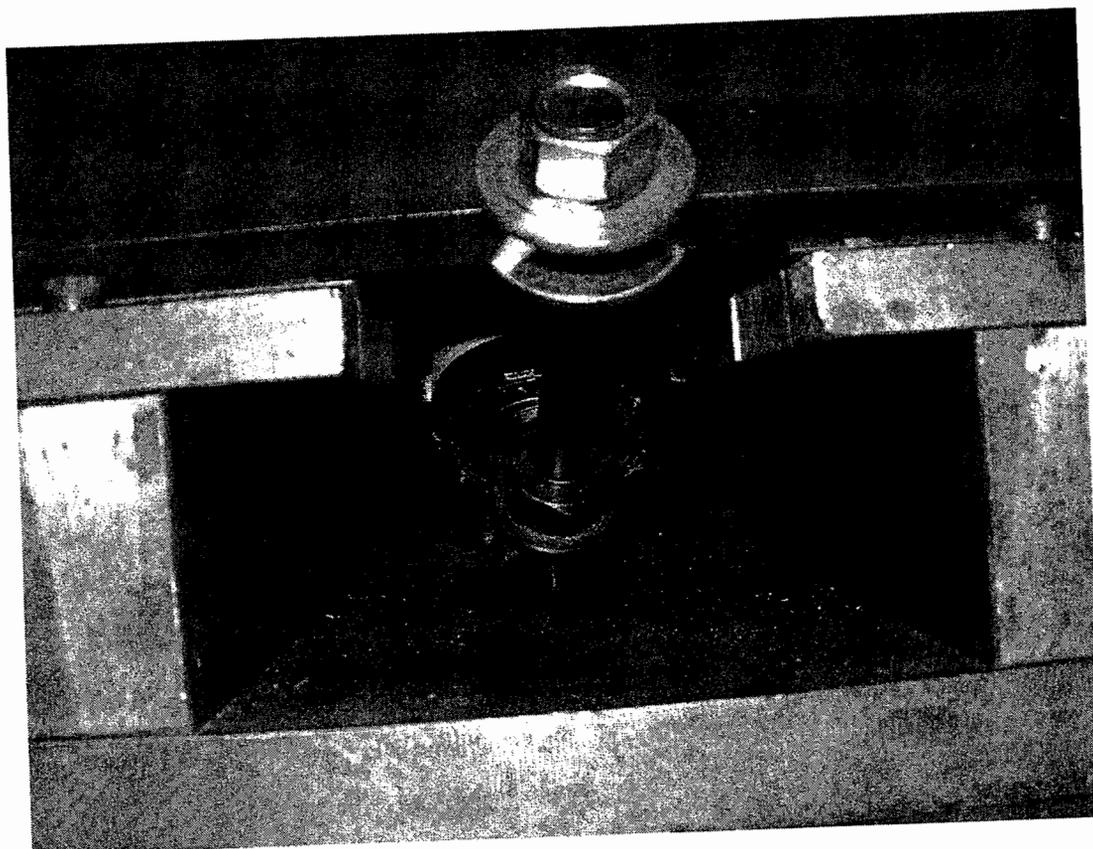
Add. Info: Run at $\pm 5.8 G @ 14 Hz$ for 1,000,000 cycles.

			<i>Note</i>		<i>Operator</i>
<i>Date</i>	<i>Time</i>	<i>Cycle Count</i>	<i>Status</i>		
11/27/06	8:27 AM	0	OK		Fox, Jason
11/27/06	8:31 AM	21,840	Failed	Upper Shaft Weld Broke	Sieger, Jamie



Initial Setup w/ 2 kg unbalance mass on wheel





Lower Shaft fixed

ITEM NO	A14-13459-002					LOC	DESC	ADJ	STRNG	COL			
UPDATE	SUPERSEDING COMP					NLOC	STK	CLS	N	STK	CAT	O	
ORDERING ITEM						STK	ACT	A	STK	STAT	A	STK	
LOC	09/06	08/06	07/06	06/06	05/06	04/06	03/06	02/06	01/06	12/05	11/05	10/05	IND
02A	15	22	35	6	10	21	12	12	20	5	14	13	N
07A	3	13	17	11	14	14	3	11	8	2	4	11	N
20A	2	10	16	8	9	9	4	14	9	11	4	4	N
24A	1	14	16	7	14	27	10	2	18	7	9	3	N
43A	10	17	14	12	18	22	7	14	26	17	7	3	N

27A	7	12	6	4	7	21	2	9	3	1	4	4	N
52A	2	5	1		6	5	2	8	1	1	5		N

TOTALS

US	31	76	98	44	65	93	36	53	81	42	38	34	
CAN	9	17	7	4	13	26	4	17	4	2	9	4	
ALL	40	93	105	48	78	119	40	70	85	44	47	38	

	--US---	--CAN--	--ALL--
TOTAL	701	110	811
AVE/MO	58	9	68

SUB INQ=PF1 ITEM=PF2 IMGT=PF3 ISTAT= PF4 HIST=PF5 POVW=PF6 IPLAN=PF7
09/19/06 10:19:40 DISPLAY COMPLETE

System
Subsystem
Component: X
Model Year(s)/Vehicle(s): 600 Freightliner
Prepared By: A. Krizan, Mary Chrysler, Bob Seay, Dan Norton, Toby Lepper

POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (DESIGN FMEA)

FMEA Number: 49171B
Prepared By: A. Krizan, Engineering Manager
FMEA Date (Orig.): 8/6/2002

Design Responsibility: PE1
Key Date: 8/30/2002
(Rev.): B 10/10/02

Function	Potential Failure Mode	Potential Effect(s) of Failure	C I S S	Potential Causes(s)/ Mechanism(s) of Failure	O C C U R	Current Design Controls -Detection -Prevention	D e t e c t	R. P. N.	Recommended Action(s)	Responsibility & Target Completion Date	Action Results		
											Actions Taken	S e v e r i t y	
Transmit torque from steering wheel to u-joint	Upper shaft breaks	Loss of connection to yoke (Loss of Steering)	10	Improper material	1	<p>P- Using smallest cross section of shaft that will experience torsional (Ø28.15 and Ø12.7 hole through one wall), axial and driver entry load (Ø23.42 x Ø15), 372MPa ultimate tensile strength calculates a 540Nm torsional strength, 94,000N axial strength, 5400N bending from steering wheel hub to snap ring groove.</p> <p>D- 407Nm minimum ultimate torsional strength</p> <p>D- Torsional Fatigue: No cracks, breakage or looseness after 500,000 cycles @ ±113Nm, Frequency of 3 Hz</p> <p>D- Driver Entry Durability: No cracks, breakage after 50,000 cycles @ 979N, Frequency of 1 Hz</p> <p>D- Telescope pull out strength: Minimum 2000N</p>	1	10	No action required because occurrence and detection are 1				
			10	Diameter too small	1	<p>P- Using smallest cross section of shaft that will experience torsional (Ø28.15 and Ø12.7 hole through one wall), axial and driver entry load (Ø23.42 x Ø15), 372MPa ultimate tensile strength calculates a 540Nm torsional strength, 94,000N axial strength, 5400N bending from steering wheel hub to snap ring groove.</p> <p>D- 407Nm minimum ultimate torsional strength</p> <p>D- Torsional Fatigue: No cracks, breakage or looseness after 500,000 cycles @ ±113Nm, Frequency of 3 Hz</p> <p>D- Driver Entry Durability: No cracks, breakage after 50,000 cycles @ 979N, Frequency of 1 Hz</p> <p>D- Telescope pull out strength: Minimum 2000N</p>	1	10	No action required because occurrence and detection are 1				
			YC	Spline strips	1	<p>P- Standard Spline DS- 1006B</p> <p>P- Customer defined specification</p>	1	10	No action required because occurrence and detection are 1				
			YC	Thread strips	1	<p>P- Standard 7/8-20 UNEF-2A Thread</p> <p>P- Customer defined specification</p>	1	10	No action required because occurrence and detection are 1				
			YC	Taper does not hold (steering wheel hub does not seat)	1	<p>P- Standard Taper DS-1014M</p> <p>P- Customer defined specification</p>	1	10	No action required because occurrence and detection are 1				

**POTENTIAL
FAILURE MODE AND EFFECTS ANALYSIS
(DESIGN FMEA)**

DFMEA Number: 606
 Design Responsibility: PE 1
 Key Date: Production June 1995
 FMEA Date (orig): 3/95 (Rev): C (released 6005xxxx series)

Component: Tilt/Telescope Column
 Model Year(s) Vehicle(s): 1996/ALL
 Core Team: A. Biggs, B. Bowerman, A. Krizan, J. Wielgos

Item Function	Potential Failure Mode	Potential Effect(s) of Failure	S e v e r i t y	C i a s e	P o t e n t i a l C a u s e s/ M e c h a n i s m s / o f F a i l u r e	O c c u r r e n c e	C u r r e n t D e s i g n C o n t r o l s	D e t e r m i n e d	R. P. N.	R e c o m m e n d e d A c t i o n (s)	R e s p o n s i b i l i t y & T a r g e t C o m p l e t i o n D a t e	Action Results																																																																			
												Actions Taken	S e v e r i t y																																																																		
TORQUE TRANSMISSION (0-1000 in. lbs.)	Steering wheel turns, but not vehicle.	Unable to control vehicle. Driver will not drive vehicle.	10	YC	Upper shaft (49171A) broken	1	1. Stress Analysis 2. Strength Test Verification 3. Fatigue/Durability Test Verification 4. Define Material specification on drawing	2	20																																																																						
															Upper shaft (49171A) spline stripped and taper does not function	2	1. Based on previous Freightliner column design 2. Establish fit/dimensioning together with customer (Freightliner) engineering and their steering wheel vendor	2	40																																																												
																								"U" joint broken (48080 00Z03-DA)	2	1. "U" joint is Fuji Kiko current design 2. Strength Test Verification 3. Fatigue/Durability Test Verification	2	40																																																			
																																Splined tube (49169C) broken	2	1. Stress Analysis 2. Strength Test Verification 3. Fatigue/Durability Test Verification 4. Define Material specification on drawing	2	40																																											
																																								Splined tube (49169C) (16 spline) stripped	2	1. Strength Test Verification 2. Fatigue/Durability Test Verification 3. Define Material specification on drawing	2	40																																			
																																																Lower shaft (49175A) broken	1	1. Stress Analysis 2. Strength Test Verification 3. Fatigue/Durability Test Verification 4. Define Material specification on drawing	2	20																											
																																																								Lower shaft (49175A) (36 spline) stripped	2	1. Based on previous Freightliner column design 2. Strength Test Verification 3. Fatigue/Durability Test Verification	2	40																			
																																																																Lower shaft (49175A) (16 spline) stripped	2	1. Strength Test Verification 2. Fatigue/Durability Test Verification 3. Define Material specification on drawing	2	40											
																																																																								Fit between steering wheel and upper shaft (49171A) spline and taper too loose	2	1. Based on previous Freightliner column design 2. Establish fit/dimensioning together with customer (Freightliner) engineering and their steering wheel vendor	2	40			

Autotek
WORKER ASSISTANT FACILITY

QUALITY ASSURANCE (317)-383-2185

Special Instructions

WELD UPPER & LOWER SHAFTS TO U-JOINT

REF	DATE	BY	APP	CHK	MR

PROCESS NAME / DESCRIPTION

CONTROL NUMBER	PROCESS NUMBER	FORM CHECKER
1044	136C	

CONTROL PLAN NUMBER/REV. LEO

CONTROL PLAN NUMBER/REV.	DESCRIPTION	CONTROL METHOD
SC	0.5 mm MIN. PER DS1010	IIS
CR	SEE WELD SETTING CHARTS	IIS
OR	NO CRACKS, SPATTER, BAD UNDERCUTS, OVERLAPS OR BLOWHOLES	IIS
	HOLE ORIENTATED TO YOKO AS SHOWN	IIS
	SEE WELDER INSTRUCTION	IIS
	MUST BE IN PLACE AT ALL TIMES	IIS
	MARK WELDS WITH SHIFT COLOR SHOWING ACCEPTANCE	IIS

LOWER SHAFT ASSEMBLY FROM PROCESS 10A3

50352 U-JOINT

UPPER SHAFT - SEE CHART

49671 PLUG
USED FOR 6005007 & SA ONLY

REQUIRE 49671 PLUG

CONTROL PLAN NUMBER	UPPER SHAFT	CONTROL PLAN NUMBER	REVISION LEVEL
6005017-SA	4911E	6005017-SA-10A4	0
6005017		6005017-10A4	
6005017-SA		6005017-SA-10A4	
6005011		6005011-10A4	
6005007-SA		6005007-SA-10A4	
6005007		6005007-10A4	
6005001-RET		6005001-RET-10A4	
6005001-SA		6005001-SA-10A4	
6005001		6005001-10A4	

SC - CRITICAL CHARACTERISTIC CO-CONTROL CHARACTERISTIC
3FC - FORM 10A002Z IS: FORM 10A0011 OR 10A0079
OR WARNERS: CHECK FOR MISSING OR MISSING PARTS OF ASSEMBLIES
RELATION PLANT TO THE PLANT OF APPLICATION -
SEGREGATE MATERIAL & REFER TO WORK INSTRUCTION: 04NFD004

ALL EMPLOYEES HAVE THE RESPONSIBILITY AND AUTHORITY TO STOP PRODUCTION
DUE TO A SAFETY OR NONCONFORMING PRODUCT ISSUE ONLY SUPERVISORS
OR PRODUCTION MANAGEMENT HAVE THE AUTHORITY TO RESTART PRODUCTION.

Ian Dawson

From: Jones, Harold [JonesH@douglasautotech.com]
Sent: Friday, September 08, 2006 9:25 AM
To: Ian Dawson
Cc: Kast, Julie
Subject: FW: 8-D Corrective Action - Steering column failure U97814.
Importance: High
Attachments: 8-D summary for Freightliner Missing Weld 8D.xls; Quality Alert#95.XLS; Freightliner 8-D Fishbone Diagram.ppt; Freightliner missing weld 8-D IS-IS NOT.xls

Good Morning Ian,

The attachments below contain the corrective action and other pertinent information. This email was sent to Jim Junor on 3/15/2006. Currently, I am not certain as to the number of emails sent to Mr. Junor prior and subsequent to March 15th. I will query the Mfg. Eng. Manager and Welding Engineer about any additional information and documents pertaining to this matter.

After review of the documents, if you have any questions or concerns, please contact me. I will do my utmost to obtain the answers.

Regards,

Harold Jones

Quality Engineer – Warranty

Douglas Autotech Corp.

O: 517-369-2315 ext. 273

C: 517-320-0514

jonesh@douglasautotech.com

From: McDonough, Mason
Sent: Wednesday, March 15, 2006 11:57 AM
To: 'JimJunor@Freightliner.com'
Cc: Williams, Timothy; Glaser, Kenneth; Millikin, Mark; Bell, Mark; Kenny, Jim; Gaukel, Pat; Walsh, Stephen; Ruedisueli, Matt; Heller, Brett
Subject: 8-D Corrective Action - Steering column failure U97814.
Importance: High

Good Morning Jim,

Our 8-D Corrective Action team has been working on the issue highlighted in steering column failure U97814. This unit was missing welds from a second station within one of our main weld operations. Based on a review of the unit and a number of problem solving tools the team has identified the root cause of this problem as a misplaced part during a weld adjustment in the first station. This appears to be an isolated incident and not a frequent occurrence. The team has focused on identifying and implementing corrective actions which fail-safe this welder and alert operators when the second station is left empty during a weld cycle. At this time we have implemented the hardware and initial programming changes to stop the welder when the station is empty. The team is now working on changes which would also prevent the machine from resuming operation until the station is filled or a unit is detected in the non-conforming material bin. Attached is an updated copy of the following documents for your review:

A. 8-D Corrective Action Report (documents interim and permanent corrective actions and status)

B. Copy of Quality Alert #95 (part of interim corrective action)

Attachment 8.01 Question 14

C. Fishbone Diagram (used to capture and prioritize possible causes)

D. Copy of the Is / Is Not diagram and Possible Cause test matrix sheet. (Used to identify the possible cause(s).)

I would welcome your input on this information. We will send an updated copy of the 8-D report when the additional corrective actions and preventive actions have been completed. Please feel free to contact me if you have any questions or concerns.

Thank you,

Mason McDonough

Quality Manager

Douglas Autotech Corp.

300 Albers Road

Bronson, MI 49028

(517) 369-2315 Ext. 232

<<8-D summary for Freightliner Missing Weld 8D.xls>> <<Quality Alert#95.XLS>> <<Freightliner 8-D Fishbone Diagram.ppt>>
<<Freightliner missing weld 8-D IS-IS NOT.xls>>



Corrective Action Record

300 Albers Rd., Bronson, MI 49028

Phone (517) 369-2315 / Fax (517) 369-7217

Type of Corrective Action:	<input type="checkbox"/> Internal	<input type="checkbox"/> Supplier	<input type="checkbox"/> 3rd Party	<input checked="" type="checkbox"/> Customer
Found During:	<input type="checkbox"/> Internal Audit	<input checked="" type="checkbox"/> Production	<input type="checkbox"/> Inspection	<input type="checkbox"/> Other
Corrective Action Function:	<input checked="" type="checkbox"/> Corrective	<input type="checkbox"/> Preventive	<input type="checkbox"/> Re-occurring	<input type="checkbox"/> Other

Internal Information:

Issued to:		Issue Date:	3/13/2006
Initiator:	Brett Heller	Internal Part No.:	6005 001
DMR/Ref. No.		M.O. Number:	

Customer Information

Supplier Information

Customer:	Freightliner	Supplier:	
Customer Part No.:	A14-13459 Steering Column	Supplier Contact:	
Customer Reference No.:	Steering column failure U97814		
Customer Contact:	Jim Junor (503) 745-8383		

1) Nonconformity, Defect or Undesirable Condition:

1 unit of DAC# 6005001 was found in the field missing 2 welds from the 2nd station of the Genesis welder and some welds from the 1st station demonstrate partial penetration.

2) Team Members:

Champion: M. McDonough Team members: B. Heller, D. Wilkenson, D. Bush, H. Jones, C. Phipps, D. Hallstrom, T. Zebka

3) Interim/Containment Actions:

Returned unit was built on 11/24/04. Contacted customer to determine if any other columns were involved. No confirmed cases. Requested return of unit to help direct the corrective action team.

Quality Alert issued to Genesis welding operation to highlight missing weld issue and making sure only completed units are placed in the containers.

4) Define Root Cause:

A review of the returned unit showed the following: Welds from the 1st station of the Genesis welder were present but the end of some welds did not have good penetration. Welds from the 2nd station of the Genesis welder were not present and there was no evidence they had been started. Using IS / IS NOT methodology the team has identified 2 possible root causes.

- 1). At the Genesis weld operation, a unit leaving the 1st station could be misplaced during an adjustment to fixtures or weld equipment. There is no signal to alert the operator if the 2nd station is left empty during a cycle.
- 2). Operator fatigue may have led to an operator overlooking or missing a part with missing welds during the visual inspection.

5) Permanent Actions Taken

The team has focused on implementing a signal or failsafe to stop the machine and alert the operator if the second weld station is left empty during a weld cycle. A review of the Genesis welder showed the hardware for this type of failsafe is currently on the machine. A programming change is needed to make it operational. The programming change will be formatted as follows:

- a.) Software detects station #2 is empty during a weld cycle.
- b.) Robot is stopped.
- c.) Weld curtain is opened.
- d.) A signal light is turned on and a message is posted on the screen explaining the reason for the stop.
- e.) This alerts the operator of an assembly which may have been misplaced outside of the weld station.
- f.) The operator must acknowledge the message by hitting the "Start" button to restart the machine.

Additional Actions: Train operators on the importance of proper part handling.
Postings to communicate the seriousness of missing welds.
Review additional failsafe to assure scrap units have been placed in the NonConforming material bin.

Target implementation: 3/25/06 for initial programming changes. Timing for scrap unit failsafe to be determined.

Status: Programming change completed on 3/14/06. Confirmed curtain opens and the "System suspend" light is activated. Message "Holding" appears on the teach pendant. Training and posting to be completed by 3/17/06.

6) Corrective Action Verification:

Programming changes confirmed effective on initial implementation.
To implement work instruction to verify failsafes are operating properly at the beginning of each shift.

7) Prevention:

To initiate a review of other critical weld operations to assure proper failsafes are in place to prevent missing welds or missed operations.

8) Congratulate Team

Attachment 8.02 Question 14

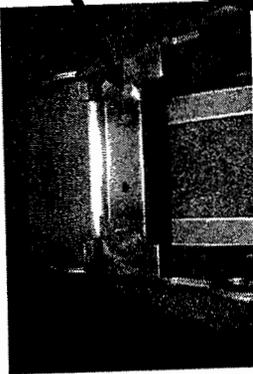
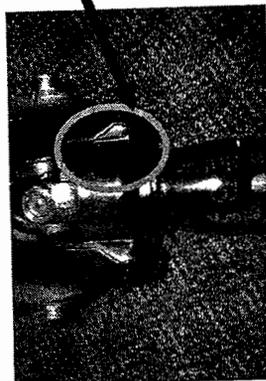
Closure Approval Signature

Date:

Quality Alert # 95

PART #	49235G	PROCESS:	Welding (Gen Welder)
PART NAME:	Lower Housing	WORK CTR:	Genises Welder
DEPT:	13	QUALITY APPROVAL:	

DESCRIPTION OF ALERT



Good Weld



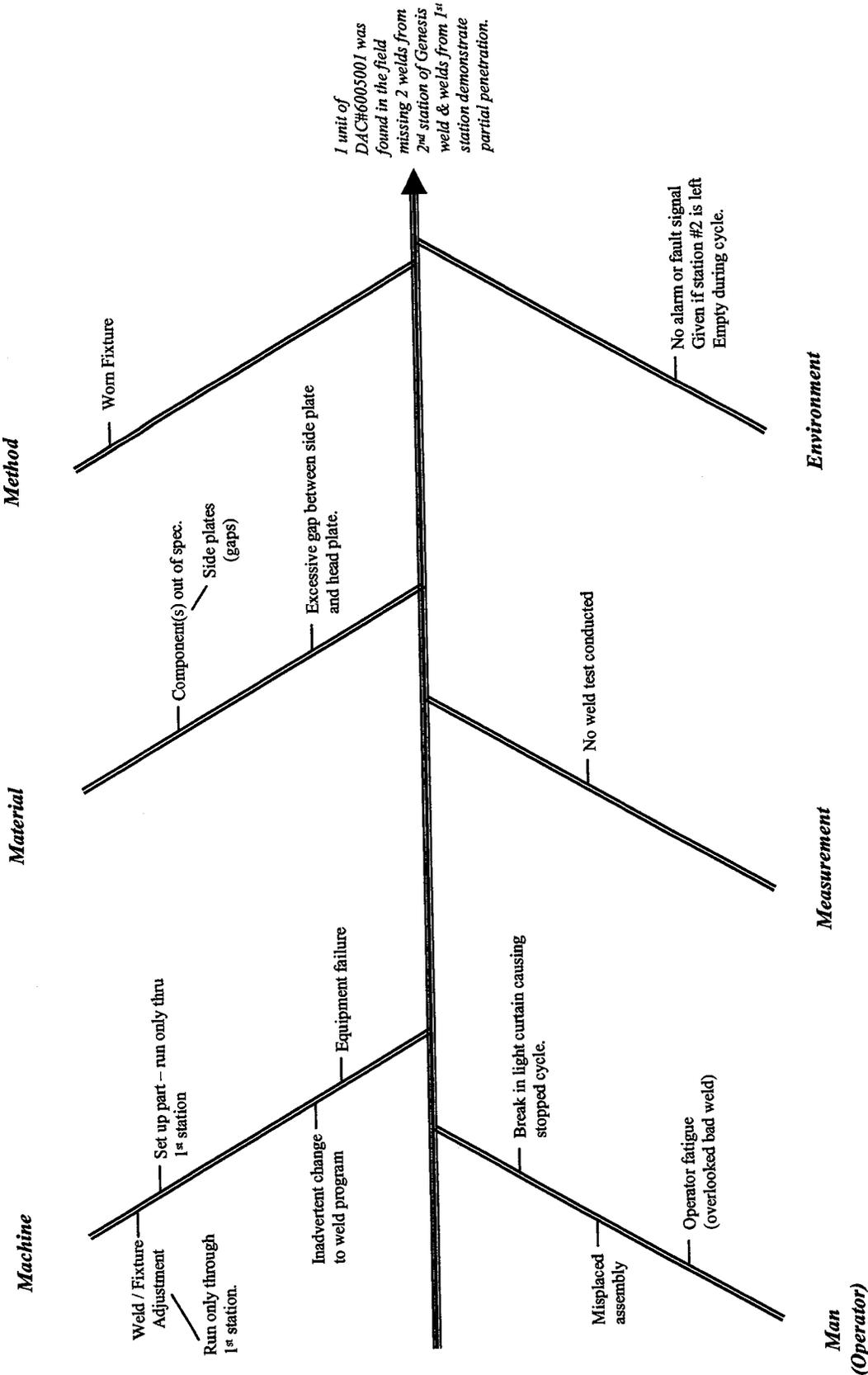
Operator Must verify all welds are present and only place completed parts in finished parts container

INITIATOR:	Brett Heller	Issue Date:	02-08-06
			5/8/2006

Ranking Legend for Possible Cause(s)

- High Potential Cause
- Medium Potential Cause
- Low Potential Cause

Freightliner 8-D – Missing Welds



IS-IS NOT - test matrix

If the possible cause theory is the cause of the problem statement then does it fully explain the **IS** and never the **IS NOT** ?

Problem Solving Worksheet Step 1 of 4

Problem Solving Worksheet Step 4 of 4

① Problem Statement:		1 unit of DACR 6065001 was found in the field missing 2 welds from the 2nd station of the Genesis welder and some welds from the 1st station demonstrate partial penetration.									
WH AT	② Problem Description	IS	Logically could be but IS NOT	Get Information	a)	b)	c)	d)	e)	f)	g)
	What Object	Freightliner column - #A14-13465-002 DACR6065001 Rev. 1	Other similar columns		Operator misplaced partial assembly during normal processing	Operator fatigue (overlooked bad / missing welds)	Assembly misplaced during weld or failure adjustment to station #1	No alarm to alert operator if station #2 is left empty during a weld cycle.	Possible equipment failure.	Assembly misplaced during a setup.	Excessive gap between skate plate and head plate.
	What Defect	Missing welds (2)	Mislocated or misaligned welds		-	+	+	+	+	+	-
	Where on object	Partial poor weld penetration (2) Top welds - 2nd station missing top welds - 1st station poor penetration	Staters from 1st station are OK.		-	+	+	+	+	+	-
	Where first observed	Toledo, OH Vehicle mileage - 113,000 miles in service approx. 11 months.	No other locations at this time.		+	+	+	+	-	-	-
	Where seen since	None	None		+	+	+	+	-	-	-
	When first observed	1/28/08 - 11/24/04 build date	Nothing prior to this date.		+	+	+	+	-	-	-
	What pattern since	Only 1 reported incident	Not sporadic or increasing		-	+	+	+	-	-	-
	How many affected	1	>1		-	+	+	+	-	-	-
	What size	Only 1 reported incident	Not sporadic or increasing		-	+	+	+	-	-	-
	Defects per object	2 missing welds 2 poor welds (penetration)	All other welds on the part are OK.		+	+	+	+	+	+	-
	Trend	No trends	No trends		+	+	+	+	+	+	-

Key Question: What signals or failseries are in the weld operation to alert an operator if the second station is left empty?

Root Cause Focus: Team to focus on defining and implementing a method which automatically alerts the operator if the weld cycle is started and the second station is left empty.

Ian Dawson

From: Ian Dawson
Sent: Thursday, September 21, 2006 10:38 AM
To: Jones, Harold
Subject: RE: 8-D Corrective Action - Steering column failure U97814.

Harold,
Per my phone message, please give a call at your earliest convenience to discuss our warranty search results.

Thank you,

Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

From: Jones, Harold [<mailto:JonesH@douglasautotech.com>]
Sent: Friday, September 08, 2006 9:25 AM
To: Ian Dawson
Cc: Kast, Julie
Subject: FW: 8-D Corrective Action - Steering column failure U97814.
Importance: High

Good Morning Ian,

The attachments below contain the corrective action and other pertinent information. This email was sent to Jim Junor on 3/15/2006. Currently, I am not certain as to the number of emails sent to Mr. Junor prior and subsequent to March 15th. I will query the Mfg. Eng. Manager and Welding Engineer about any additional information and documents pertaining to this matter.

After review of the documents, if you have any questions or concerns, please contact me. I will do my utmost to obtain the answers.

Regards,

Harold Jones

Quality Engineer – Warranty

Douglas Autotech Corp.

O: 517-369-2315 ext. 273

C: 517-320-0514

jonesh@douglasautotech.com

11/15/2006

Ian Dawson

From: Kast, Julie [kastj@douglasautotech.com]
Sent: Friday, October 06, 2006 11:23 AM
To: Ian Dawson
Cc: Benson, Marcus
Subject: Warranty issue update
Attachments: Freightliner Story Board11.xls

Ian,

I have attached an update on the warranty weld issue. Marcus Benson will be contacting you to schedule a meeting to review the attached sheet.

Respectfully

Julie Kast <<Freightliner Story Board11.xls>>

Freightliner Weld Breaks

1. Issue or Concern

Douglas Autotech has had 11 parts since 11/1/04 that have had a none critical weld break

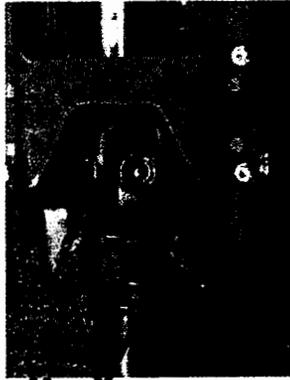
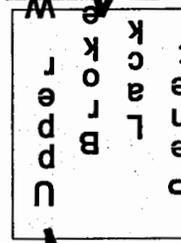
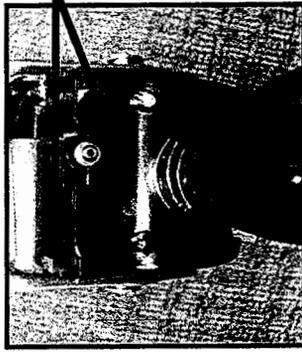
2. Back Ground

DFMEA PROCESS Function/ REQUIREMENTS	POTENTIAL FAILURE MODE	POTENTIAL EFFECTS OF FAILURE	Potential Cause/Mechanism of Failure	SEVERITY	SEVERITY DESCRIPTION	R. P. N.
Thru-telephone infinite Adjustment	Column does not stop in most all tilt position when released	Wire harness/HCV Air Pressure hoses may be fractured. Driver will collapse. Driver will drive vehicle	Upper Housing (49235C) breaks	5	Vehicle item operable but Comfort Convenience item(s) inoperable at a reduced level of performance	40
PFMEA	POTENTIAL FAILURE MODE	POTENTIAL EFFECTS OF FAILURE	Potential Cause/Mechanism of Failure	SEVERITY	SEVERITY DESCRIPTION	R. P. N.
49235C - Weld	Lack of Penetration	High rotational torque	Improper set-up of weld operation	5	Vehicle item operable but Comfort Convenience item(s) inoperable at a reduced level of performance	20

3. Clarifying the Facts

- No Safety Issue
- Driver Indication of Failure
- Continuous Improvement: Installed Prox switch for location control/presence. Reduction in variation to weld location in gap - weld penetration improvement project (DAC)
- Continuous Improvement: Assembly not fitting hold location gage. Shimmied weld fixture and reworked parts - weld penetration improvement project (DAC)
- Continuous Improvement: Implemented new check procedure. Reduction of variation to weld location and gap - weld penetration improvement project (DAC)
- Modified upper and lower specification for part width and gauging requirements. Issued process sheet Rev. A - weld penetration improvement project (DAC)

4. Explanation of Broken Weld



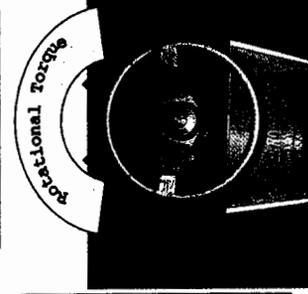
5. Test Results



No Loss of Steering



Driver Indication For Missing Welds



6. Summary

- If weld were to fail, steering may descend (tilt) a maximum of 1".
- A slight increase in steering force will be a recognisable indication to the driver.
- Background and testing shows that this is not a safety issue.
- Least 8 months maintained 0 PPM for weld issues. This is a result of the continuous improvement mentioned in #3 Clarify the Facts.

7. Conclusion

- This issue does not pose an unreasonable risk to motor vehicle safety.
- This issue also provides warning to the driver

Ian Dawson

From: Ian Dawson
Sent: Tuesday, October 17, 2006 1:39 PM
To: 'mbenson@douglasautotech.com'
Cc: Timothy Blubaugh; Steve Payne
Subject: Portland Visit
Attachments: SFC-SFNCENTURYCLA-0505-01-00095.pdf; SFC-SFNCENTURYCLA-0505-01-00096.pdf; SFC-SFNCENTURYCLA-0505-01-00097.pdf; SFC-SFYCENTURYCLA-0505-01-00121.pdf; Century Steering colume 1.jpg; Century Steering Colume 2.jpg

Tracking:	Recipient	Read
	'mbenson@douglasautotech.com'	
	Timothy Blubaugh	
	Steve Payne	Read: 10/17/2006 1:43 PM

Marcus,
 As we discussed earlier today, we invite Douglas Autotech Corporation to come to Portland and present the steering column weld failure issues so we can better prepare a response to NHTSA.
 Please suggest a preferred day for your visit that will give you adequate time to prepare. Early November is a good target.

There are two issues to discuss:

1. The failure of welds in the column support structure and possible binding steering.
2. The separation of the steering shaft due to weld failure.

NHTSA's most recent letter to us is attached and outlines their concerns. Also included are pictures of failed welds that allow the shaft to separate from the yoke.

Questions to be answered are the reasons for the defective welds, the period over when they might have happened and the steps taken by DAC to correct any production issues. NHTSA will want this information, in addition to quantities involved and a statement on the risk to motor vehicle safety for both concerns.

Please advise if we can supply you with any additional information and don't hesitate to call if you have any questions or concerns.

Regards,
 Ian

Ian Dawson
 Government Technical Affairs
 Freightliner LLC
 503-745-6375
 Fax 503-745-5544
iandawson@Freightliner.com

From: Bruce.York@dot.gov [mailto:Bruce.York@dot.gov]
Sent: Tuesday, October 17, 2006 6:59 AM
To: Ian Dawson; Richard.Boyd@dot.gov
Cc: Timothy Blubaugh
Subject: RE: FTL Steer Column Welds- Update 10/13/06

Ian,

The attached Field Reports that we received in EWR sound like they are a little more serious than DAC is describing. In one case they say the steering column shaft snapped and other cases they talk about u-joints binding if the steering wheel is not held in just the right way. I believe these field reports would constitute safety issues. I hope that these will help in your meeting with DAC.

11/15/2006

Thank You,
Bruce York

Department Of Transportation
National Highway Traffic Safety Admin.
Office of Defects Investigation
400 7th Street, SW
Washington, D.C. 20590
Room 5326-S

From: IanDawson@Freightliner.com [mailto:IanDawson@Freightliner.com]
Sent: Friday, October 13, 2006 5:01 PM
To: Boyd, Richard <NHTSA>
Cc: York, Bruce <NHTSA>; TimothyBlubaugh@Freightliner.com
Subject: FTL Steer Column Welds- Update 10/13/06

Dick,
Douglas Autotech, our column supplier, provided a summary report with the following conclusions:

1. If a weld were to fail, the steering column may descend a maximum of 1 inch.
2. If a weld were to fail, a slight increase in steering effort will be felt, and recognizable to the driver.
3. The weld failure rate is extremely low.
4. Background and testing show this issue does not pose an unreasonable risk to motor vehicle safety.

While our warranty claims support their conclusions, we still need more information before deciding on a course of action.

Douglas Autotech will be invited to visit us and present their case.

We will keep you informed on progress for the meeting and for the testing.

Regards,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Ian Dawson
Sent: Tuesday, October 31, 2006 10:32 AM
To: 'kennyJ@douglasautotech.com'
Cc: 'millikanm@douglasautotech.com'; Dean Veeder; Timothy Blubaugh; Steve Payne
Subject: Returned Field Column
Attachments: DAC00002.JPG; DAC00003.JPG; DAC00004.JPG; DAC00005.JPG; DAC00006.JPG; DAC00007.JPG; DAC00001.JPG

Jim

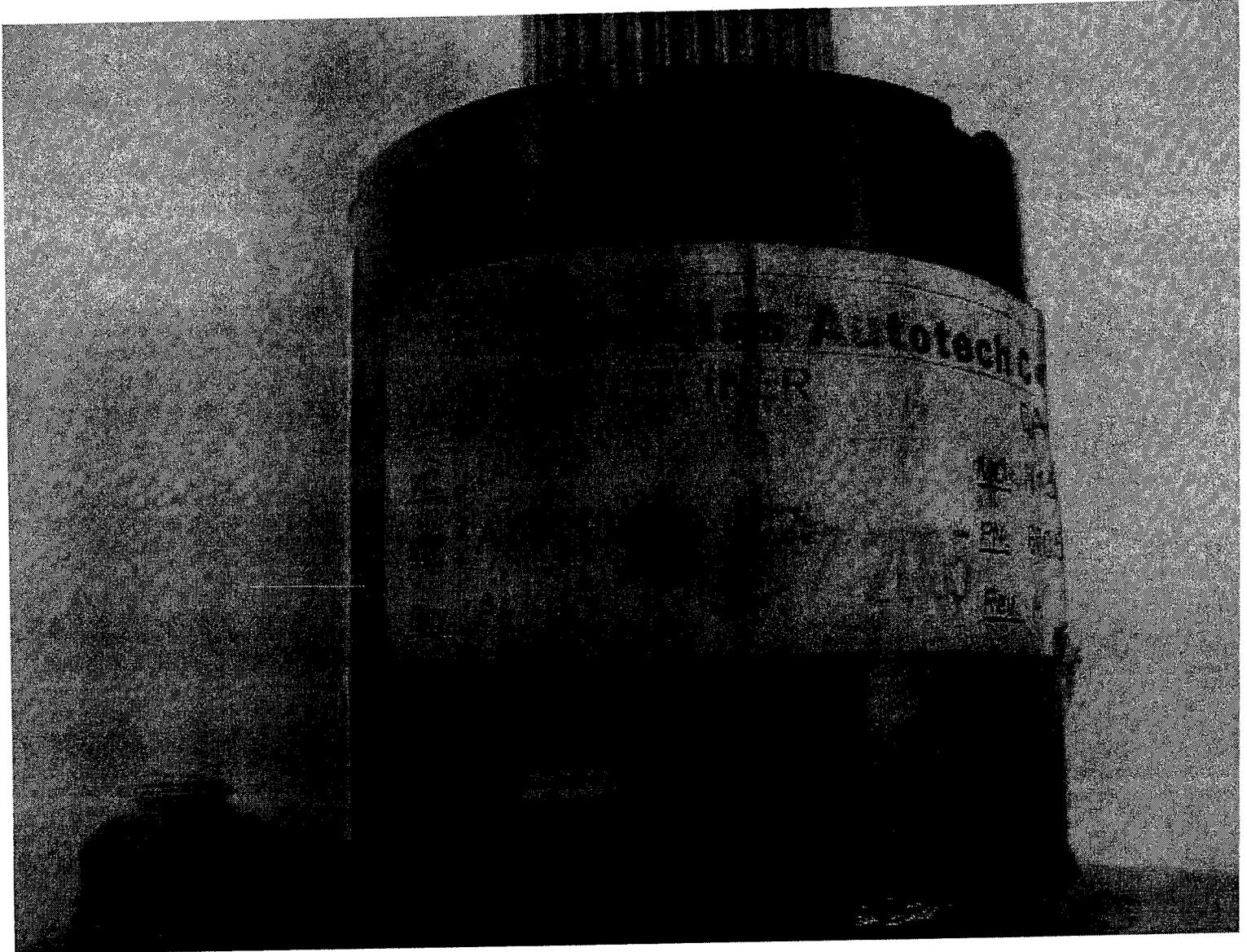
Attached are photographs of a column recently returned to us from the field with two missing welds and two cracked welds.

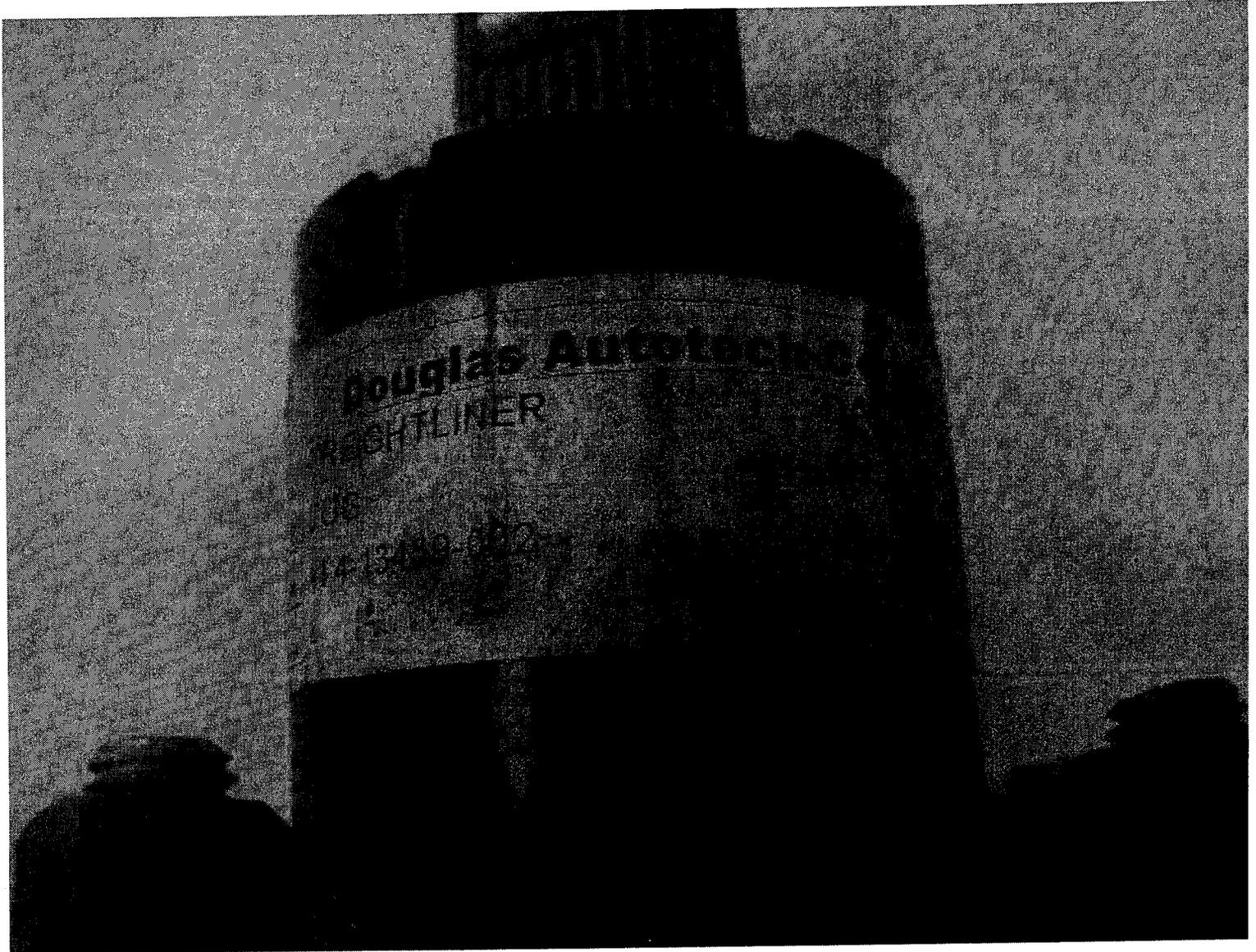
The column data label should be very helpful to DAC in verifying the production period when faulty welds were an issue.

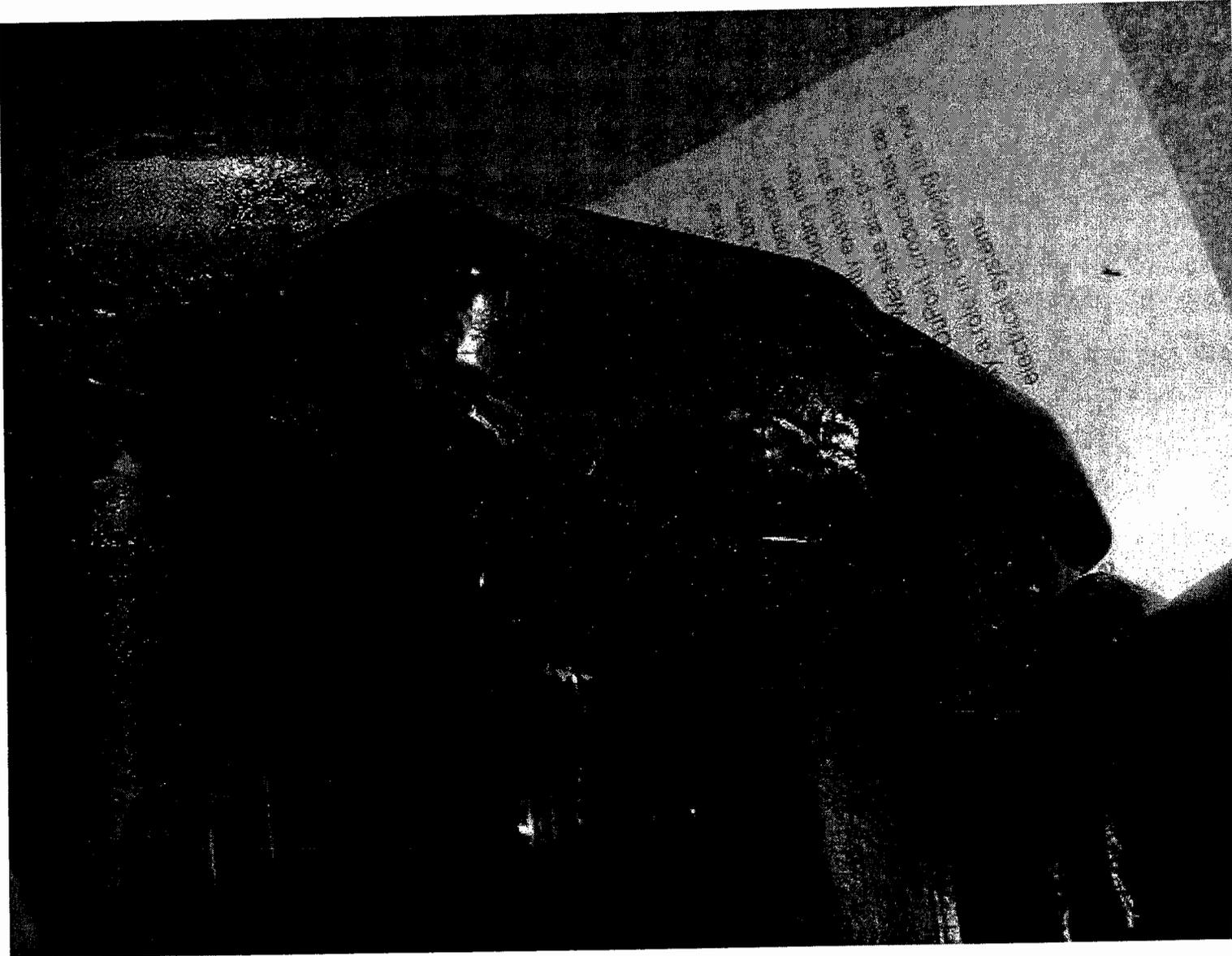
We are now in receipt of a NHTSA "Preliminary Evaluation", which we will forward to you once the questions requiring information from DAC have been identified.

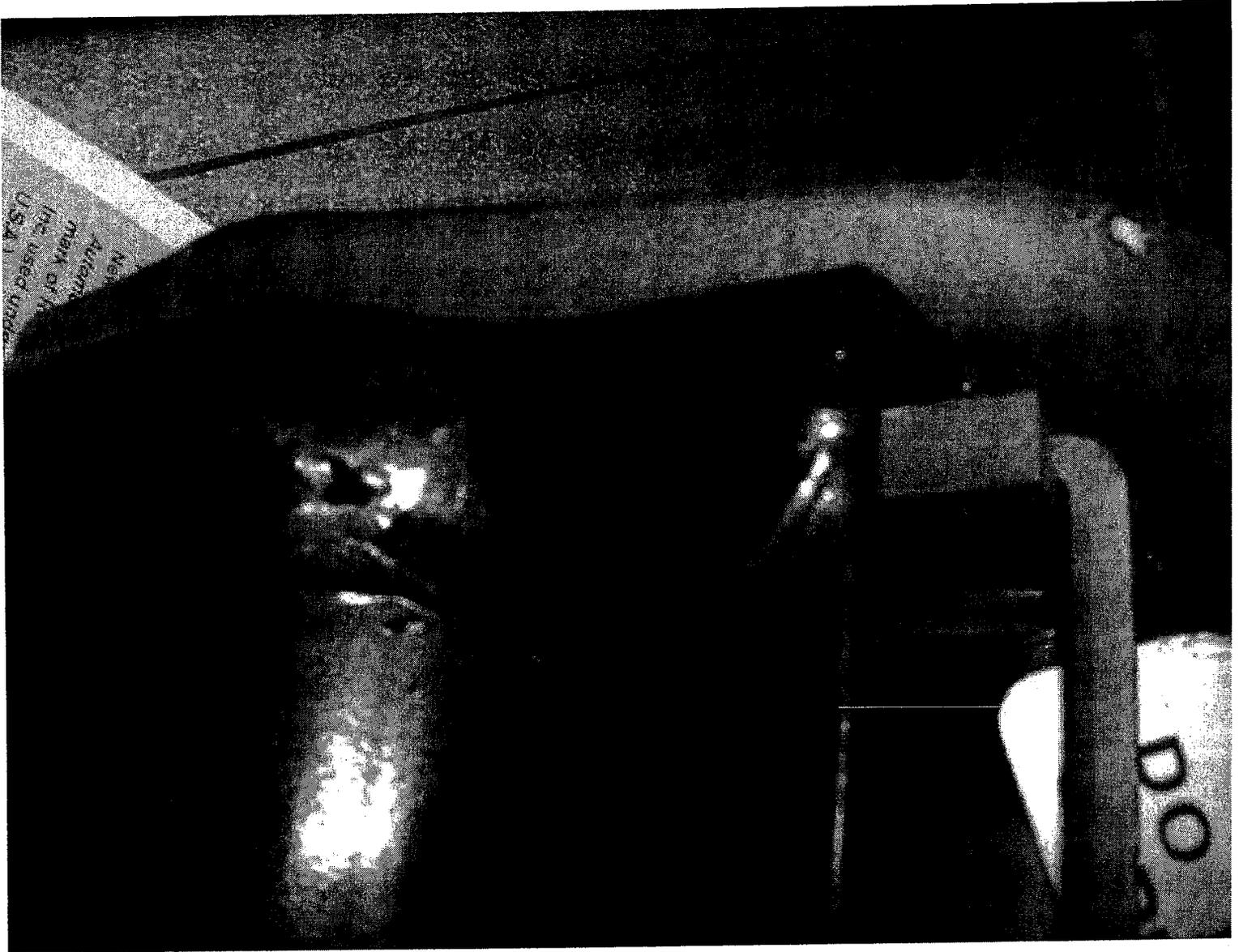
Regards,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com















Ian Dawson

From: Millikin, Mark [MillikinM@douglasautotech.com]
Sent: Tuesday, October 31, 2006 10:53 AM
To: Ian Dawson
Cc: Dean Veeder
Subject: Douglas Autotech

Ian

We have received your email, and Jim Kenny will be calling you this afternoon. Please correct my email address (you had my name mis-spelled) so that I don't miss any messages from you. (MMILLIKIN@DouglasAutotech.com)

Thanks
Mark

Mark R. Millikin
Supervisor of Account Management
Douglas Autotech
300 Albers Rd.
Bronson, Mi. 49028
517-369-2315 x325
Cell 248-766-6565

Ian Dawson

From: Ian Dawson
Sent: Monday, October 23, 2006 12:51 PM
To: mbenson@douglasautotech.com
Subject: RE: Portland Visit

Marcus,
How are your plans shaping up for a Portland visit in two weeks?

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

From: Ian Dawson
Sent: Tuesday, October 17, 2006 1:39 PM
To: 'mbenson@douglasautotech.com'
Cc: Timothy Blubaugh; Steve Payne
Subject: Portland Visit

Marcus,
As we discussed earlier today, we invite Douglas Autotech Corporation to come to Portland and present the steering column weld failure issues so we can better prepare a response to NHTSA.
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There are two issues to discuss:

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2. The separation of the steering shaft due to weld failure.

NHTSA's most recent letter to us is attached and outlines their concerns. Also included are pictures of failed welds that allow the shaft to separate from the yoke.

Questions to be answered are the reasons for the defective welds, the period over when they might have happened and the steps taken by DAC to correct any production issues. NHTSA will want this information, in addition to quantities involved and a statement on the risk to motor vehicle safety for both concerns.

Please advise if we can supply you with any additional information and don't hesitate to call if you have any questions or concerns.

Regards,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

11/21/2006

Ian Dawson

From: Ian Dawson
Sent: Monday, November 06, 2006 6:56 AM
To: kennyJ@douglasautotech.com
Cc: Millikin, Mark; Timothy Blubaugh
Subject: FTL Agenda for Steer Column Review

Jim,
Here is the tentative agenda. I will likely open after introductions with a review of the issue and a presentation of our warranty data.

Regards,
Ian

Please join us for a presentation by Douglas Autotech Corporation on production issues associated with the weldments on 2005 and 2006 Century and Columbia steering columns. 8-10 am, Tuesday, Nov 7, Engineering Executive Conf Room

Tentative Agenda for each of two issues:

- a. Failure of welds on column support, resulting in a loose steering wheel (~15 events)
- b. Failure of upper shaft weld to yoke, resulting in a loss of steering (one event)

DAC explanation of production issues and corrective action
DAC determination of beginning and end dates
DAC determination of the risk to motor vehicle safety
DAC recommendation

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Ruedisueli, Matt [RuedisueliM@douglasautotech.com]
Sent: Monday, November 13, 2006 7:26 AM
To: Ian Dawson
Subject: RE: NHTSA Response

Answers are coming along. I will try and have them done for Thursday. The parts for durability testing on the four welds is going to the lab today. Unfortunately it took 2 days to get the column back via overnight air.

I will keep in touch. As always, contact me at anytime with questions.

Regards,
Matt

From: IanDawson@Freightliner.com [mailto:IanDawson@Freightliner.com]
Sent: Monday, November 13, 2006 10:07 AM
To: Ruedisueli, Matt
Subject: NHTSA Response

Matt,
Thank you for the voice mail follow-up last week.

How are the answers coming for the NHTSA PE?
Is there any chance you could have the bulk of the answers by Thursday or Friday of this week?
Although the questionnaire isn't due back until the end of next week, there's Thanksgiving break to consider and the inevitable last minute questions and Word-Smithing. Timing will be tight.

Regards,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Ruedisueli, Matt [RuedisueliM@douglasautotech.com]
Sent: Tuesday, November 14, 2006 2:34 PM
To: Ian Dawson
Subject: RE: NHTSA Response

Hope all is going well with you. I am coming along on the response. In our meeting, we talked about the detailed responses from maintenance done on the trucks being sent to us. I wanted to know if you could send us these detailed reports for the 7 confirmed issues with weld, and I think there was several times that number that you had suspected for movement or wobble. This would be of help. Please let me know if you have any questions. Thank you.

Regards,
Matt

From: IanDawson@Freightliner.com [mailto:IanDawson@Freightliner.com]
Sent: Monday, November 13, 2006 10:07 AM
To: Ruedisueli, Matt
Subject: NHTSA Response

Matt,
Thank you for the voice mail follow-up last week.

How are the answers coming for the NHTSA PE?
Is there any chance you could have the bulk of the answers by Thursday or Friday of this week?
Although the questionnaire isn't due back until the end of next week, there's Thanksgiving break to consider and the inevitable last minute questions and Word-Smithing. Timing will be tight.

Regards,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Ruedisueli, Matt [RuedisueliM@douglasautotech.com]
Sent: Monday, November 20, 2006 7:01 AM
To: Ian Dawson
Cc: Kenny, Jim; Glaser, Kenneth
Subject: Part Number Question

The first two part numbers were obsolete before the period in questions. The balance of the part numbers is still current.

A14-13459-000 is our 6004001 (last ship date 10/21/99)

A14-13459-001 is our 6004007 (last ship date 10/1/99)

A14-13459-002 is our 6005001-SA

A14-13459-003 is our 6005007-SA

A14-13459-004 is our 6005017/60050017-SA

Please contact me with any questions. Thanks.

Matthew E. Ruedisueli
Manufacturing Engineering Manager
Douglas Autotech Corporation
300 Albers Road
Bronson, MI 49028
517-369-2315 ext. 307
517-369-7217 FAX

11/21/2006

Dave Stanley

From: Gary Rouke
Sent: Thursday, July 20, 2006 6:47 AM
To: Dave Stanley; Rick Palmer
Subject: FW: picture for FSPR 10523

FYI from Eddie.

-----Original Message-----

From: Eddie Blake
Sent: Thursday, July 20, 2006 9:46 AM
To: Gary Rouke
Subject: Re: picture for FSPR 10523

The steering column was made by williams There should be 4 weld but the one in question only had 2 The column failed and dropped while the driver was backing into a loading dock So far I have checked about 12 columns in this fleet and have not found a problem Ken Pynn is aware of this problem Please pass this information on

----- Original Message -----

From: Gary Rouke
To: Dave Stanley; Eddie Blake
Cc: Rick Palmer
Sent: Thu Jul 20 06:05:53 2006
Subject: RE: picture for FSPR 10523

Just some more info Dave, this was Eddie Blake's fleet out of Maine I believe. Like I mentioned I cannot get into Remedy at the moment so I cannot see what happened there. The only field report I would have done is that one, although this may have been mentioned in a weekly report that Rick Palmer does. I do recall that Eddie was going to have the rest of the fleets vehicles checked, at least the ones built in the same time frame. I am not aware of those results. Hopefully you received the pictures in my last e mail. Let me know if you didn't.

Eddie, this is the one with the upper steering column that broke free at the welds.

From: Dave Stanley
Sent: Wednesday, July 19, 2006 5:51 PM
To: Gary Rouke
Subject: picture for FSPR 10523
Importance: High

Hi Gary,

NHTSA is looking at you field #10523 and asking for additional information. They comments on this report indicate the existence of three pictures; U97814A, U97814B, & U97814C. However, there are no pictures attached to this field report.

Do you have copies of these pictures?
Did you ever attach them to the field report?
Can I get copies of them?

There is also a note indicating that ticket # 10523 is a duplicate of # 10509. I checked 10509 and there aren't any pictures attached to that one either.

Thanks.

Dave Stanley
Government Technical Affairs
Freightliner LLC
(503) 745-7926 phone
davestanley@freighliner.com

Ian Dawson

From: Jason Mao
Sent: Thursday, July 20, 2006 4:31 PM
To: Ian Dawson
Cc: Jason Mao
Subject: FW: 8-D Corrective Action - Steering column failure U97814.

FYI - Jason

From: Brett Moshofsky
Sent: Wednesday, March 22, 2006 6:19 PM
To: Jason Mao; Jim Junor
Cc: Aaron Nelson; Loren Keplinger; Steve Payne; Tony Morgan; David Jensen
Subject: RE: 8-D Corrective Action - Steering column failure U97814.

I would say rarely is there a 100% check, but I would have to review their process control plan to see what they are really doing. It looks like they are trying to poke yoke the process so they don't need to add the 100% inspection. I'll ask them what they were and will be doing.

Brett Moshofsky
503-745-8518

From: Jason Mao
Sent: Wednesday, March 22, 2006 1:17 PM
To: Brett Moshofsky; Jim Junor
Cc: Aaron Nelson; Loren Keplinger; Steve Payne; Tony Morgan; David Jensen
Subject: RE: 8-D Corrective Action - Steering column failure U97814.

Brett/Jim,
Could you shed some light on the following question?
Thanks,
Jason

From: David Jensen
Sent: Wednesday, March 22, 2006 10:19 AM
To: Jason Mao
Cc: Aaron Nelson
Subject: RE: 8-D Corrective Action - Steering column failure U97814.

I don't see an end-of-line quality check (ideally performed by a third person) mentioned in any of the documents. Is it implied somewhere, missing, normal industry practice to omit?

David Jensen
Component Test - Mechanisms
FREIGHTLINER LLC
(503) 745-7559

-----Original Message-----

From: Jason Mao
Sent: Wednesday, March 15, 2006 9:23 AM
To: David Jensen; Aaron Nelson
Cc: Rick Harris
Subject: FW: 8-D Corrective Action - Steering column failure U97814.
Importance: High

11/21/2006

FYI - Jason

From: Jim Junor
Sent: Wednesday, March 15, 2006 9:02 AM
To: Brett Moshofsky; Loren Keplinger; Steve Payne; Tony Morgan; Jason Mao
Subject: FW: 8-D Corrective Action - Steering column failure U97814.
Importance: High

Jim

From: McDonough, Mason [mailto:McDonoughM@douglasautotech.com]
Sent: Wednesday, March 15, 2006 8:57 AM
To: Jim Junor
Cc: Williams, Timothy; Glaser, Kenneth; Millikin, Mark; Bell, Mark; Kenny, Jim; Gaukel, Pat; Walsh, Stephen; Ruedisueli, Matt; Heller, Brett
Subject: 8-D Corrective Action - Steering column failure U97814.
Importance: High

Good Morning Jim,

Our 8-D Corrective Action team has been working on the issue highlighted in steering column failure U97814. This unit was missing welds from a second station within one of our main weld operations. Based on a review of the unit and a number of problem solving tools the team has identified the root cause of this problem as a misplaced part during a weld adjustment in the first station. This appears to be an isolated incident and not a frequent occurrence. The team has focused on identifying and implementing corrective actions which failsafe this welder and alert operators when the second station is left empty during a weld cycle. At this time we have implemented the hardware and initial programming changes to stop the welder when the station is empty. The team is now working on changes which would also prevent the machine from resuming operation until the station is filled or a unit is detected in the non-conforming material bin. Attached is an updated copy of the following documents for your review:

- A. 8-D Corrective Action Report (documents interim and permanent corrective actions and status)
- B. Copy of Quality Alert #95 (part of interim corrective action)
- C. Fishbone Diagram (used to capture and prioritize possible causes)
- D. Copy of the Is / Is Not diagram and Possible Cause test matrix sheet. (Used to identify the possible cause(s).)

I would welcome your input on this information. We will send an updated copy of the 8-D report when the additional corrective actions and preventive actions have been completed. Please feel free to contact me if you have any questions or concerns.

Thank you,

Mason McDonough
Quality Manager
Douglas Autotech Corp.
300 Albers Road
Bronson, MI 49028

(517) 369-2315 Ext. 232

<<8-D summary for Freightliner Missing Weld 8D.xls>> <<Quality Alert#95.XLS>> <<Freightliner 8-D Fishbone Diagram.ppt>> <<Freightliner missing weld 8-D IS-IS NOT.xls>>

Ian Dawson

From: Jim Junor
Sent: Thursday, August 03, 2006 9:27 AM
To: Ian Dawson
Subject: RE: Steer Column Warranty
Attachments: DAPopulation.xls

Note that subtotals are included in the columns so that if you simply sum the entire column the total will be double the actual population.

From: Ian Dawson
Sent: Wednesday, August 02, 2006 2:28 PM
To: Jim Junor
Subject: RE: Steer Column Warranty

Just Argosy, Century/Columbia and FS-65.

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

From: Jim Junor
Sent: Wednesday, August 02, 2006 2:26 PM
To: Ian Dawson
Subject: RE: Steer Column Warranty

Model wasn't one of the options, that'll take a little longer.

From: Ian Dawson
Sent: Wednesday, August 02, 2006 2:19 PM
To: Jim Junor
Subject: RE: Steer Column Warranty

I like to put the claims in perspective, so the total number for each model using that part would be lovely.

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

From: Jim Junor
Sent: Wednesday, August 02, 2006 1:00 PM

11/15/2006

Freightliner LLC
 503-745-6375
 Fax 503-745-5544
ianawson@Freightliner.com

From: Jim Junor
Sent: Wednesday, August 02, 2006 1:00 PM
To: Ian Dawson
Subject: RE: Steer Column Warranty

I don't have an up to date number but I can put it together fairly quickly. Do you want a lump sum? By build month, quarter or year? By plant?

From: Ian Dawson
Sent: Wednesday, August 02, 2006 12:44 PM
To: Jim Junor
Subject: Steer Column Warranty

Jim,
 Do you have the sample size for the models in the steer column spread sheet, excluding ALF?

Thanks,
 Ian

From: Jim Junor
Sent: Thursday, July 27, 2006 11:36 AM
To: Ian Dawson
Subject: RE: Warranty

But of course.

From: Ian Dawson
Sent: Thursday, July 27, 2006 10:45 AM
To: Jim Junor
Subject: Warranty

Jim,
 Here's a sample of a typical warranty search in an Excel spreadsheet. Can you give me one just like it for steer columns?

Thanks,
 Ian

Tyco Warranty Sep 04 through Sep 05

Base Model	Claim Number	Claim Paid Date	Claim Type	Damage Code (A and B)	Domicile Country	Manufacturing Plant	Miles	Off Line Date	Paid Claim Cost
CST120	B2BR00B32864T	21-Jan-05	NEW VEHICLE WARRANTY	285-001A03	US	CLE	28200	22-Sep-04	411.33
CST120	Z3AR00A58457T	21-Jan-05	NEW VEHICLE WARRANTY	285-001440	US	CLE	606	28-Sep-04	416.06

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CST120	MKFD0005A281T	1-Apr-05	NEW VEHICLE WARRANTY	285-001A03	US	CLE	26154	15-Oct-04	1150.44
CST120	T8AR0005P837T	20-May-05	POLICY	732-000021	US	CLE	30900	20-Oct-04	495

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Timothy Blubaugh
Sent: Thursday, August 31, 2006 5:43 PM
To: Ian Dawson
Subject: FW: New PE
Attachments: PE06-033open.doc

Ian,

As we discussed, please prepare a response to NHTSA. If needed, the response should explain our plan for field action. If not, the response should explain the facts that support taking no action.

Tim

Tim Blubaugh
Government Technical Affairs

From: Richard.Boyd@dot.gov [mailto:Richard.Boyd@dot.gov]
Sent: Thursday, August 31, 2006 5:26 AM
To: Timothy Blubaugh
Cc: Bruce.York@dot.gov
Subject: New PE

Tim – I have attached a copy of a new PE that we have opened based on EWR data. Bruce York is the engineer and he talked with Ian this past Tuesday. Ian asked for some time to get a handle on the situation and we've agreed to that. Therefore we'll hold off a couple of weeks and then touch base via phone to see what's developing prior to sending an IR.

Best Regards,

Dick Boyd

Ian Dawson

From: Jim Junor
Sent: Monday, September 11, 2006 10:35 AM
To: Ian Dawson
Subject: RE: DA Steer Column Info

Part numbers:

All claims that list A14-13459-xxx in the parts used list.
All claims with the following as the PFI,

- A14-13459-xxx
- A14-12997-xxx
- A14-12723-xxx
- A14-12889-xxx
- A14-12993-xxx
- A14-13021-xxx
- A14-13461-xxx
- 14-13182-xxx
- 14-13184-xxx

I also included 112 individual claims specifically by claim number because Warranty recoded the claims to one of their 'VND' type PFI's.

The A14-13459 series was first introduced in 1999, therefore as part of the analysis I pulled claim info for the above part numbers and claims back through 1999.

No vehicle models were excluded until you said you'd like to see only Argosy, Columbia/Century/Coronado, & FS65. As a result, ALI vehicles were dropped from the population listing; however the four or five claims for ALF vehicles are still included in the claim listing.

Unless you've already done so, I'll have to look into what identifying marks might be on the column.

Jim

From: Ian Dawson
Sent: Friday, September 08, 2006 12:13 PM
To: Jim Junor
Subject: DA Steer Column Info
Importance: High

Jim,
I need some basic info on the DA column weld issue:

- Part numbers (A14-13459? Any others?)
- Build period for suspect population (11/24/04 through 1/26/06?)
- Where used? (Only on FLX? How about Argosy?)
- Identifying marks on column, like a date code?

I am in como with DA, so I can call them if you don't have the info.

Thanks,
Ian

11/15/2006

Ian Dawson

From: Jim Junor [JimJunor@Freightliner.com]
Sent: Tuesday, October 03, 2006 1:56 PM
To: Ian Dawson
Subject: 10509; U97814 Steering column mounting failed. mfg 12/04.
Attachments: U97814c.JPG; U97814a.JPG; New A14-13459-002.JPG; U97814b.JPG

the message is now filled in

FSPR Detail

Serial Numbers			
Serial Number	U97814		
Fleet Range			
Lead SN		End Serial Number	No Vehicles
Product	Freightliner Century Class	Priority	0
Issue	Steering column mounting failed. mfg 12/04.		
Failed Part Name		Upper Steering Column	Category
Submitting DSM		Gary Rouke	Severity
Resp Dept			
SAR Number	1050900	Build Location	Cleveland, NC
Build Date	12/01/2004	Mileage	113000 0
Damage Code	532-001908130	BOM	
Primary Failed Item	A14-13459-002	Damage Code	532-001908130
EWR		MIP	

Problem

Description
The upper steering column mounting failed. Two welds attaching the mounting broke. The replacment column ha
Short Term Fix
Resolution

Ian Dawson

From: David Jensen
Sent: Tuesday, September 05, 2006 4:13 PM
To: Ian Dawson
Subject: FW: 8-D Corrective Action - Steering column failure U97814.

Information and contacts. Hope if helps.

David Jensen
Component Test - Mechanisms
FREIGHTLINER LLC
(503) 745-7559

From: Brett Moshofsky
Sent: Wednesday, March 22, 2006 6:19 PM
To: Jason Mao; Jim Junor
Cc: Aaron Nelson; Loren Keplinger; Steve Payne; Tony Morgan; David Jensen
Subject: RE: 8-D Corrective Action - Steering column failure U97814.

I would say rarely is there a 100% check, but I would have to review their process control plan to see what they are really doing. It looks like they are trying to poke yoke the process so they don't need to add the 100% inspection. I'll ask them what they were and will be doing.

Brett Moshofsky
503-745-8518

From: Jason Mao
Sent: Wednesday, March 22, 2006 1:17 PM
To: Brett Moshofsky; Jim Junor
Cc: Aaron Nelson; Loren Keplinger; Steve Payne; Tony Morgan; David Jensen
Subject: RE: 8-D Corrective Action - Steering column failure U97814.

Brett/Jim,
Could you shed some light on the following question?
Thanks,
Jason

From: David Jensen
Sent: Wednesday, March 22, 2006 10:19 AM
To: Jason Mao
Cc: Aaron Nelson
Subject: RE: 8-D Corrective Action - Steering column failure U97814.

I don't see an end-of-line quality check (ideally performed by a third person) mentioned in any of the documents. Is it implied somewhere, missing, normal industry practice to omit?

David Jensen
Component Test - Mechanisms
FREIGHTLINER LLC
(503) 745-7559

-----Original Message-----

From: Jason Mao
Sent: Wednesday, March 15, 2006 9:23 AM

11/21/2006

To: David Jensen; Aaron Nelson
Cc: Rick Harris
Subject: FW: 8-D Corrective Action - Steering column failure U97814.
Importance: High

Attachment 9.10 Question 15

FYI - Jason

From: Jim Junor
Sent: Wednesday, March 15, 2006 9:02 AM
To: Brett Moshofsky; Loren Keplinger; Steve Payne; Tony Morgan; Jason Mao
Subject: FW: 8-D Corrective Action - Steering column failure U97814.
Importance: High

Jim

From: McDonough, Mason [mailto:McDonoughM@douglasautotech.com]
Sent: Wednesday, March 15, 2006 8:57 AM
To: Jim Junor
Cc: Williams, Timothy; Glaser, Kenneth; Millikin, Mark; Bell, Mark; Kenny, Jim; Gaukel, Pat; Walsh, Stephen; Ruedisueli, Matt; Heller, Brett
Subject: 8-D Corrective Action - Steering column failure U97814.
Importance: High

Good Morning Jim,

Our 8-D Corrective Action team has been working on the issue highlighted in steering column failure U97814. This unit was missing welds from a second station within one of our main weld operations. Based on a review of the unit and a number of problem solving tools the team has identified the root cause of this problem as a misplaced part during a weld adjustment in the first station. This appears to be an isolated incident and not a frequent occurrence. The team has focused on identifying and implementing corrective actions which failsafe this welder and alert operators when the second station is left empty during a weld cycle. At this time we have implemented the hardware and initial programming changes to stop the welder when the station is empty. The team is now working on changes which would also prevent the machine from resuming operation until the station is filled or a unit is detected in the non-conforming material bin. Attached is an updated copy of the following documents for your review:

- A. 8-D Corrective Action Report (documents interim and permanent corrective actions and status)
- B. Copy of Quality Alert #95 (part of interim corrective action)
- C. Fishbone Diagram (used to capture and prioritize possible causes)
- D. Copy of the Is / Is Not diagram and Possible Cause test matrix sheet. (Used to identify the possible cause(s).)

I would welcome your input on this information. We will send an updated copy of the 8-D report when the additional corrective actions and preventive actions have been completed. Please feel free to contact me if you have any questions or concerns.

Thank you,

Mason McDonough
Quality Manager
Douglas Autotech Corp.
300 Albers Road
Bronson, MI 49028

(517) 369-2315 Ext. 232

11/21/2006

Ian Dawson

From: Tony Morgan
Sent: Tuesday, October 10, 2006 12:15 PM
To: Ian Dawson
Subject: Douglas Steering Column Bar Code Info

Attachments: FW: Freightliner Pics; Freightliner Comparison 900 to 600 series 8-2-06.xls



FW: Freightliner
Pics



Freightliner
Comparison 900 to..

Ian,

Here is the info that I got from Douglas regarding bar codes and identifying the date of manufacture.

The Douglas column used in the P2/FLX/COR is what they refer to as the "600-series" column. The label is located right at the end of the column.

The "900-series" goes in the military truck. It comes with a plastic cover from Douglas. The label is on the inside of the cover.

Each label has an "M-number". Douglas says that with that number, they can narrow down the date of manufacture to within 24 hr of the actual date. But the date code is not intuitive. You would have to send them the M-numbers that you were interested in and have them decipher them (I guess we have not been given the secret de-coder ring).

I hope this helps.

Tony Morgan

From: Tony Morgan
Sent: Monday, October 09, 2006 12:18 PM
To: Ian Dawson
Subject: Steering Column Mfr Info

Ian,

I contacted Douglas at the end of last week about steering column identification. Today they said they will send me a picture of a column showing the location of the barcode that gives mfg info like build date, etc.

Tony Morgan

Ian Dawson

From: Osborne, Steve [OsborneS@douglasautotech.com]
Sent: Tuesday, October 10, 2006 11:57 AM
To: Tony Morgan
Cc: Kubasiak, Duane; Gaukel, Pat
Subject: FW: Freightliner Pics
Attachments: Freightliner Pics - SteveO.xls

Tony,

Attached are the pictures of the Bar Code labels we put on the columns

The 600 series have the label on the bearing area of the shaft

The 900 series has the label on the inside of the plastic cover

Hope this helps

From: Jones, Harold
Sent: Tuesday, October 10, 2006 2:41 PM
To: Osborne, Steve
Subject: Freightliner Pics

Steve,

As you requested....Thanks for your patience.

Have a wonderful time... Be safe!

Regards,

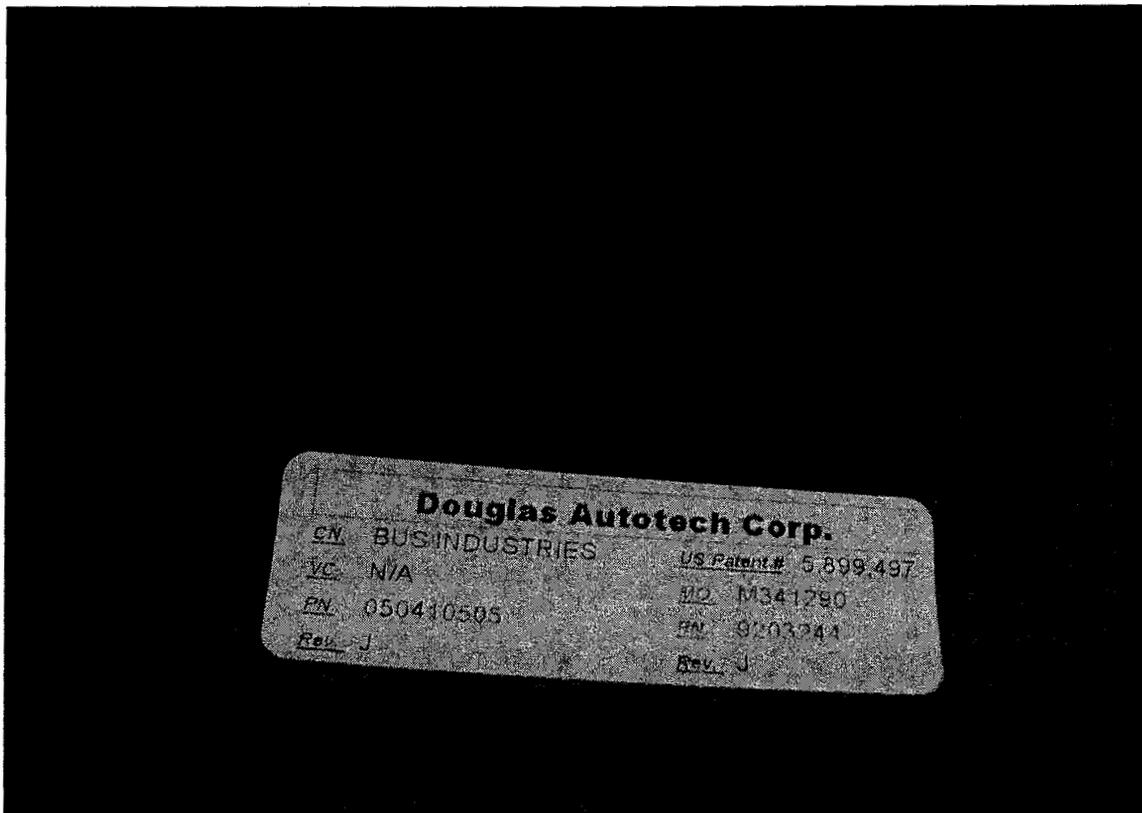
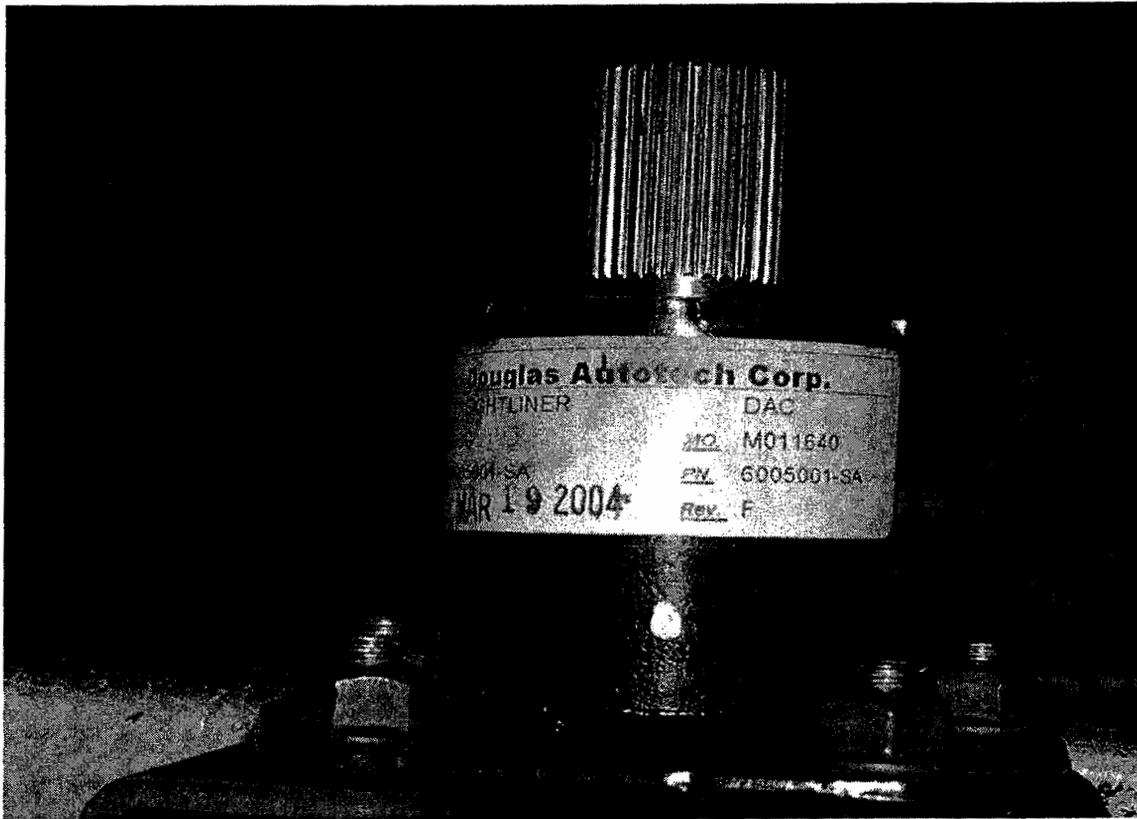
Harold

<<Freightliner Pics - SteveO.xls>>

Description	9203244	6005001
Column Cover	Yes	No
Tilt	Lever type	Air Operated
Telescope	Lever type	Air Operated
Tilt Range	35 Degrees	20.5 degrees
Lock type	Positive	Friction
Horn Brush	Yes	No
Gap Hider/Spring	Yes	No
Mounting brackets	External	Integrated
Over all Length	487mm~	480mm~
Quoted Volume	5000	125000
Specifications - general	Meets Higher spec loads/more durable column	

Requires external source

Requires external source



Ian Dawson

From: Jim Junor
Sent: Wednesday, October 11, 2006 10:42 AM
To: Terry Rutherford
Cc: Ian Dawson
Subject: FW: Steering column failures

Terry, these columns are coming from Ryder to the Return Center to my attention.

Please let me know when they arrive.

Thanks,

Jim

From: Glenn Thornton
Sent: Wednesday, October 11, 2006 10:24 AM
To: Gerson_Perez@ryder.com
Cc: Jim Junor; Glenn Thornton
Subject: Steering column failures

CL Steering column won't lock, a14-13459-002, parts to e returned to Jim Junor at return center
415070 U20956 662.54
436238 V88815 662.54
434507 V66955 662.54

Gerson, please have these columns shipped to the return center attention to Jim.

From: Jim Junor
Sent: Wednesday, October 11, 2006 10:41 AM
To: Ian Dawson
Subject: FW: Steering column failures

FYI, V66955 is the reported 'floppy' column.

From: Glenn Thornton
Sent: Wednesday, October 11, 2006 10:24 AM
To: Gerson_Perez@ryder.com
Cc: Jim Junor; Glenn Thornton
Subject: Steering column failures

CL Steering column won't lock, a14-13459-002, parts to e returned to Jim Junor at return center
415070 U20956 662.54
436238 V88815 662.54
434507 V66955 662.54

Gerson, please have these columns shipped to the return center attention to Jim.

11/15/2006

Ian Dawson

From: Dave Stanley
Sent: Tuesday, October 17, 2006 1:07 PM
To: Ian Dawson
Subject: pics from ticket 7833

Attachments: Century Steering colume 1.jpg; Century Steering Colume 2.jpg

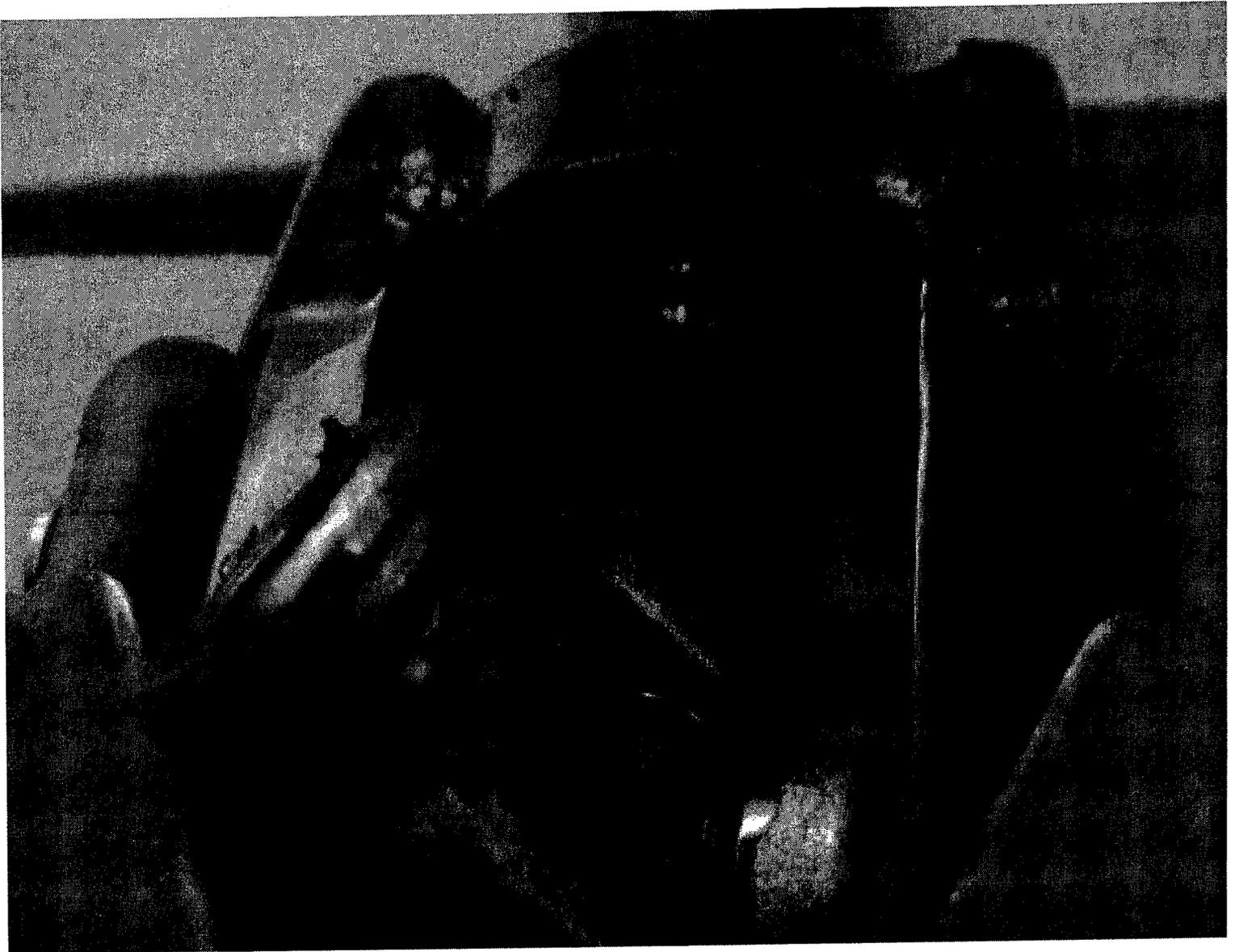


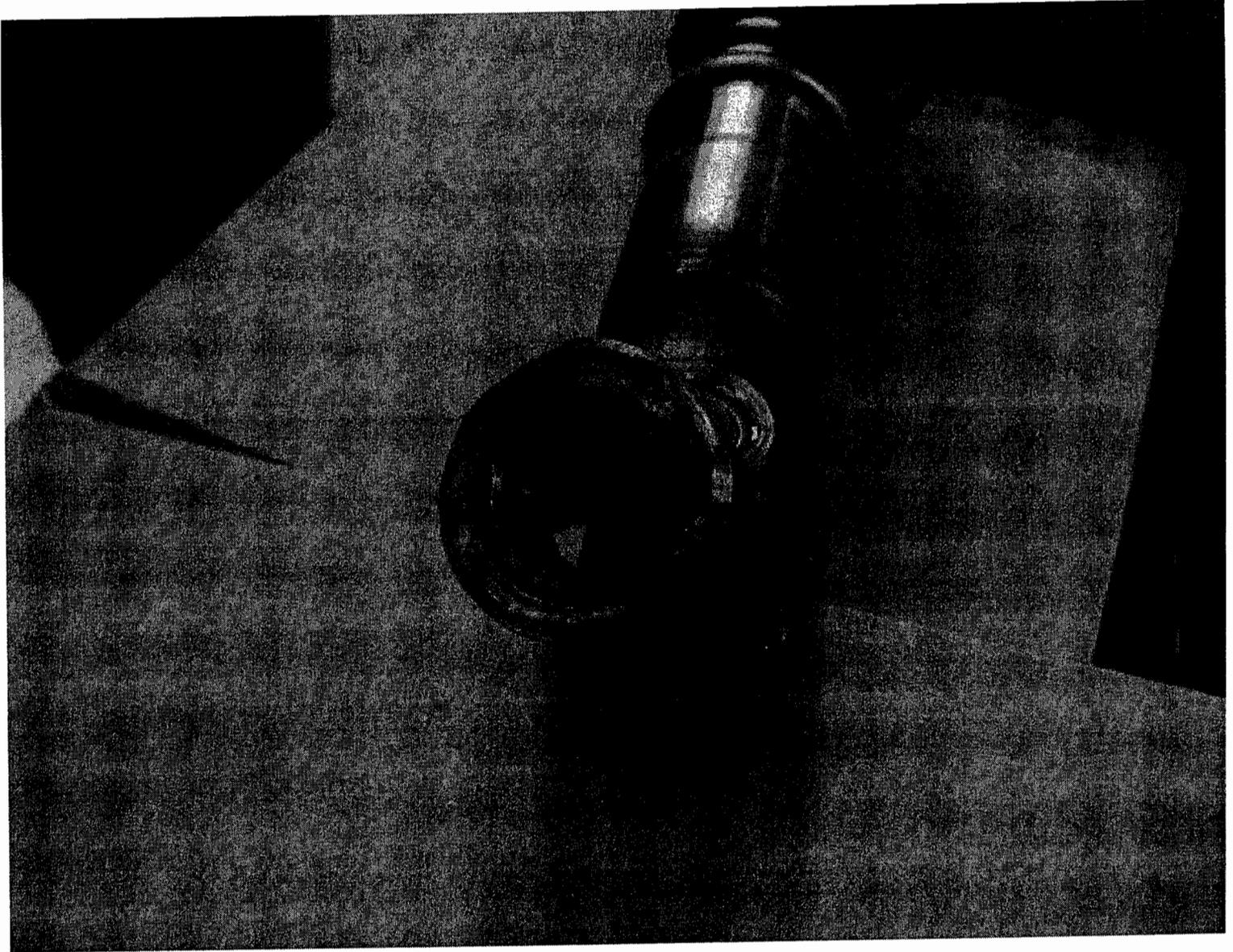
Century Steering
colume 1.jpg ...



Century Steering
Colume 2.jpg ...

Dave Stanley
Government Technical Affairs
Freightliner LLC
(503) 745-7926 phone
davestanley@freigthliner.com





Ian Dawson

From: Timothy Blubaugh
Sent: Thursday, October 19, 2006 9:56 PM
To: Ian Dawson
Subject: RE: FTL Steer Column Update 10-19-06

Ian,

Good work, even it is sounds hopeless that we will avoid the PE.

Tim

Tim Blubaugh
Government Technical Affairs

From: Ian Dawson
Sent: Thursday, October 19, 2006 3:24 PM
To: 'Bruce.York@dot.gov'
Cc: Timothy Blubaugh; Richard.Boyd@dot.gov
Subject: FTL Steer Column Update 10-19-06

Bruce,
I received your message on the likely release of the pending PE for the steer column issue.

We are proceeding with our analysis. The supplier has been invited to present their position the first of November. Their initial conclusion was based only on weld failures on the support structure. They are now looking into shaft failures. A FTL evaluation test of a failed column has been scheduled.

The claim data you sent lists a number of issues related to loss of power assist and other steering issues beside column failures. We have to be careful that we are not drawing conclusions on very different issues.

If you can, please hold off a couple of more days on the PE, until I'm able to call you. I will be out of the office tomorrow, but will contact you on Monday.

Regards,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Jason Mao
Sent: Monday, October 23, 2006 4:10 PM
To: Ian Dawson; Jim Junor; Carlos Cosme
Subject: FW: A test request has been approved. TCR PTC183

FYI - Jason

From: TERRY WATKINS [mailto:terryw@freightliner.com]
Sent: Monday, October 23, 2006 3:59 PM
To: Bobbi Felix; Ryan Kennedy; Tony Morgan; Jason Mao; Rick Harris
Subject: A test request has been approved. TCR PTC183

Test Engineering Portal Message

A test request has been approved.

TCR Info:

TCR	PTC183 - VALIDATE DAC STRG COLUMN CONTROL W/O INTACT WELDS ON COLUMN
Major Project	426
Assigned To	TERRY WATKINS
Comments	

For further information, please visit the Projects page of the Test Engineering Portal
[Link Test Engineering Portal Projects](#)

Ian Dawson

From: Jason Mao
Sent: Friday, October 20, 2006 12:33 PM
To: Carlos Cosme; David Jensen
Cc: Jim Junor; Ian Dawson; Tony Morgan
Subject: RE: Column Meeting

Attachments: You have been submitted a test request to process (Or possibly CC'd on this message). TCR PTC183

TCR has been submitted to Test Engineering. - Jason

From: Carlos Cosme
Sent: Friday, October 20, 2006 12:26 PM
To: David Jensen
Cc: Jim Junor; Ian Dawson; Jason Mao; Tony Morgan
Subject: RE: Column Meeting

Dave,
Can you please make arrangements to get the columns from Jim. Tony is writing a TCR for us to evaluate weld failures on DA columns.

Jim,
Dave is out of the office today, but will be back Monday.

Thanks,

Carlos Cosme
Product Validation
Corp II - Mechanisms

From: Jim Junor
Sent: Friday, October 20, 2006 10:28 AM
To: Ian Dawson; Jason Mao; Tony Morgan; Carlos Cosme
Subject: RE: Column Meeting

I have two column's at my desk, one of which has the two missing/two broken weld problem.

From: Ian Dawson
Sent: Wednesday, October 18, 2006 9:50 AM
To: Jason Mao; Jim Junor
Subject: Column Meeting

Jason,
I will be out of the office tomorrow and Friday.

If you understand the issue, I may not be necessary for the meeting.

Jim,

11/15/2006

Do you know the status of the column shipment?

Attachment 9.22 Question 15

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Ian Dawson
Sent: Friday, October 27, 2006 2:18 PM
To: Timothy Blubaugh
Cc: Terry Watkins; David Jensen; Carlos Cosme
Subject: DAC Wheel Movement

Tracking:

Recipient	Read
Timothy Blubaugh	
Terry Watkins	Read: 10/27/2006 2:56 PM
David Jensen	
Carlos Cosme	Read: 10/27/2006 2:23 PM

Tim,

The truck is awaiting you at CII, inside, parked in the last bay on the left (Orange Columbia). I noticed no bidding in the steering at various positions, including max and min telescope. The covers have been removed so you can observe the movement.

Test will appreciate your viewing it today, so they can free up the stall and return the vehicle. See Dave or Terry if you need assistance or if you want to start it for a steering test.

Ian

From: David Jensen
Sent: Friday, October 27, 2006 2:06 PM
To: Ian Dawson
Subject: DAC Wheel Movement

Wheel moves fore and aft 5.5", lateral 4.5" measured at the rim. DAC could have reported top of shaft movement.

David Jensen
Component Test - Mechanisms
FREIGHTLINER LLC
(503) 745-7559

Ian Dawson

From: Rick Pitel
Sent: Monday, October 30, 2006 12:45 PM
To: Ian Dawson
Cc: Jim Junor; Dale Barker
Subject: RE: NHTSA Str Column Inquiry
Attachments: 6R125.xls

Ian, attached is the list of vehicles, each model year on its own sheet.

Rick

From: Ian Dawson
Sent: Monday, October 30, 2006 9:14 AM
To: Rick Pitel
Cc: Jim Junor
Subject: NHTSA Str Column Inquiry

Rick,

We have a formal inquiry from NHTSA concerning the weld failures issue on the Douglas Autotech Steering Column. Could you please provide the following production data for Century and Columbia?

Subject Vehicle: MY 2004, 2005 Century and Columbia

1. What is the total number of subject vehicles manufactured in the U.S.?
2. For each of those vehicles:
 - a. Vehicle Identification Number;
 - b. Model;
 - c. Model Year;
 - d. Date of manufacture (cab start);
 - e. Date warranty coverage commenced;
 - f. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Please provide the data in an Excel spreadsheet.

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Floyd Frick
Sent: Wednesday, November 08, 2006 12:33 PM
To: Jim Junor
Cc: Ian Dawson; Floyd Frick
Subject: FLX w/Douglas Steer Column Complaints.

JIM - Could you please ???

From: Ian Dawson
Sent: Wednesday, November 08, 2006 11:06 AM
To: Floyd Frick
Subject: FLX w/Douglas Steer Column Complaints.

Floyd,
We have a formal NHTSA inquiry concerning the adjustable Douglas Autotec Steer Column, as fitted on approximately 108,000 MY 2004 and 2005 Century and Columbia.

Please poll all U.S. DSMs for customer complaints that mention broken welds on the structure or shaft that results in an alarming amount of fore-aft play and side-to-side play of the steering wheel (not to be confused with other issues with the tilt lock mechanism and bearings that also result in wheel play).

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Carlos Cosme
Sent: Friday, November 10, 2006 8:37 AM
To: Ian Dawson
Subject: FW: Douglas Autotec Meeting Notes (11/7/06)

Ian, I should have copied you on this also.

From: Carlos Cosme
Sent: Friday, November 10, 2006 8:35 AM
To: Terry Watkins; David Jensen
Subject: FW: Douglas Autotec Meeting Notes (11/7/06)

FYI,
During the meeting, we had a brief discussion regarding the tests Douglas Autotec will be conducting on the "defective welds". I requested they send us a description of their tests for our review. I don't anticipate changing their procedure as it sounded quite thorough for this task. However, I did think it was appropriate that we at least review it.

Carlos

From: Ian Dawson
Sent: Friday, November 10, 2006 8:12 AM
To: Rick Harris; Jim Junor; Tony Morgan; Carlos Cosme; Dave Stanley; Steve Payne
Cc: Timothy Blubaugh; Dean Veeder; Carlos Billingsley; Floyd Frick; Adam Knobloch; Tony Petree; Terry Watkins; Jason Mao; Stephan Gallmeister
Subject: Douglas Autotec Meeting Notes (11/7/06)

Douglas Autotec Corporation visited FTL 11/7/06 to review the ongoing issues with weld failures on the FLX steering column, FTL part A14-13459-002.

Representing DAC: Jimmy Kenny, former Plant Manager and now Sales Director; Matt Ruedisueli, Manager, Manufacturing Engineer and Steve Osborne, Account Manager.

Representing FTL: Tim Blubaugh, Steve Payne, Dave Stanley, Jim Junor, Rick Harris, Tony Morgan, Carlos Cosme and Ian Dawson.

Background

The issue as was raised by NHTSA in early August this year as a result of their routine scanning of OEM submitted field reports. Two steering column issues on MY 2004 and 2005 Century and Columbia caused concern in the reports:

1. Separation of the column shaft and yoke, within the upper column.
2. Failure of the welds retaining the upper column tube to the side stampings.

NHTSA has opened a Preliminary Evaluation resulting in a request for detailed information from FTL and DAC.

Meeting Summary

1. The shaft-to-yoke separation was attributed to operator error in a rework operation of (64) pieces. The original production welds, found to be off location, were ground flat, leaving only a remnant of weld at the part interface. The assemblies were then re-welded in a manual operation. Pictures of the failed field part indicate the assembly was ground, but not re-welded. Such a defective assembly will separate at very low steering forces, as determined by DAC and would be revealed likely before the customer takes vehicle delivery. There is one claim for this issue. DAC no longer reworks shaft assemblies.
2. The upper column structure failures are attributed to (2) missing welds at the top rear of the upper support structure. The forward (2) welds consequently failed from steering wheel inputs. Eight claims for the subject vehicles were listed in warranty and another possible 12 claims that could related. DAC reports operator error in which columns may have skipped one of the three sequential weld stations. DAC has since added electronic interlocks that shut down the welders if a station is missed.

11/15/2006

DAC was asked to provide two key answers: 1.) What are the affected production dates? 2.) Are all defective structure parts attributed to (2) missing welds or is there a second population that has substandard welds in all four locations that should be included? DAC will research and test a column fabricated with (4) defective welds.

FTL will supply all available detailed warranty reports that may help determine the column production dates and confirm missing welds.

DAC has been very co-operative. We are optimistic that a field resolution will be forthcoming.

Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

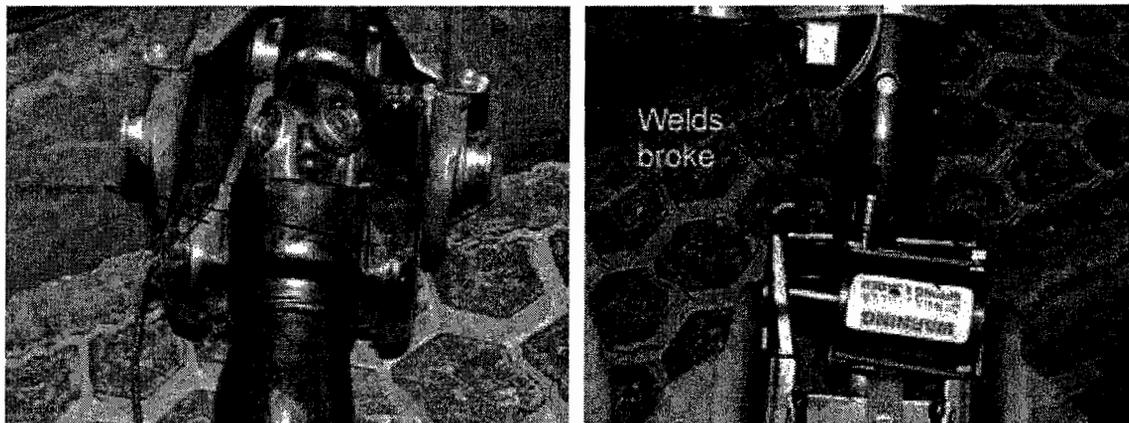
From: Jim Junor
Sent: Friday, November 10, 2006 2:26 PM
To: DSM-FTL/STL
Cc: Ian Dawson; Floyd Frick
Subject: NHTSA Investigation – Douglas Autotech A14-13459-000 – 003
Importance: High

Important: You are **REQUIRED** to respond as instructed below. Responses will be tracked.

NHTSA has opened a preliminary investigation regarding certain failures of the Douglas Autotech adjustable steering column, PN A14-13459-000 – 003, used on Freightliner Argosy, Columbia, Century and Coronado models and Freightliner Custom Chassis model FS65.

The specific failure being investigated is the separation of the upper tube assembly from the side channels due to two missing welds causing failure of the two remaining welds, which may also have inadequate penetration.

This failure results in a considerable amount of fore-aft and side to side play of the steering wheel.



The Freightliner Compliance department has requested a survey of all field service staff to determine if there are other known, but formally unreported customer complaints and/or failures.

- If you are aware of any failures or complaints that you know or suspect have not been previously reported please reply with as much information as you have, but with the vehicle serial number and approximate date as a minimum.

Or, if you have nothing to report,

- Select the 'Nothing to Report' button at the top of the page.

Thank you,

Jim Junor

(503) 745-8383

Ian Dawson

From: Jason Mao
Sent: Monday, November 13, 2006 1:56 PM
To: Ian Dawson
Subject: RE: DAC Installation Dwgs

Ian,
Here are two links for LHD:

http://viewcad/Scripts/ftlDraw.dll?cgiDRAWID=D14-13233_F_001.CGM&cgiDRAWDIR=http://dfsweb/newcgm/27/&cgiNoSearch

http://viewcad/Scripts/ftlDraw.dll?cgiDRAWID=D14-13233_F_002.CGM&cgiDRAWDIR=http://dfsweb/newcgm/27/&cgiNoSearch

Regards,
Jason

From: Ian Dawson
Sent: Monday, November 13, 2006 1:26 PM
To: Jason Mao
Subject: RE: DAC Installation Dwgs

Jason,
We're getting warmer. How about one for a LHD Vehicle?

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

From: Jason Mao
Sent: Monday, November 13, 2006 12:31 PM
To: Ian Dawson
Subject: RE: DAC Installation Dwgs

Ian,

The following is the link to installation drawing of the column:
http://viewcad/Scripts/ftlDraw.dll?cgiDRAWID=D14-14314_001.CGM&cgiDRAWDIR=http://dfsweb/newcgm/456/&cgiNoSearch

Hope it meets your need this time.

Jason :)

From: Jason Mao
Sent: Monday, November 13, 2006 9:38 AM
To: Ian Dawson

11/15/2006

Subject: RE: DAC Installation Dwgs

Attachment 9.31 Question 15

Ian,
The following address will lead you to the right drawing.
Jason

<http://viewcad/Scripts/ftlDraw.dll?cgiSearchOrder=2&cgiTifRev=2&cgiDRAWID=A14-13459-002+&cgiCgmRev=0>

From: Ian Dawson
Sent: Monday, November 13, 2006 8:01 AM
To: Jason Mao
Subject: DAC Installation Dwgs

Jason,
Could you please give me a copy of the installation drawing of A14-13459-002 in a Century/Columbia?

(I'm revising my earlier e-mail, I already have the part dwg.)

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Brian Burton
Sent: Monday, November 13, 2006 2:31 PM
To: Jim Topitzes
Cc: Ian Dawson
Subject: FW: Steer Column Claims

Jim,

Please run a search to attempt to locate any such claims. I do not recall any such claims.

Thanks

Brian

From: Ian Dawson
Sent: Monday, November 13, 2006 1:49 PM
To: Brian Burton
Subject: Steer Column Claims

Brian,

I'm completing a NHTSA Information Request concerning broken welds on Douglas Autotec steering column assemblies, as installed in MY 2004 and 2005 Century and Columbia.

Does FTL have any claims alleging incidents, crashes, property damage, injuries, fatalities or subrogation claims that have been attributed to the steering column in these vehicles?

If there are any, the incident and claim date, compliant summary, consumer comments and FTL assessment will be needed.

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Jim Junor
Sent: Monday, November 13, 2006 4:00 PM
To: Ian Dawson
Subject: RE: DAC Part Analysis

No, only the two were returned.

From: Ian Dawson
Sent: Monday, November 13, 2006 3:24 PM
To: Jim Junor
Subject: DAC Part Analysis

Jim,
Other than our field column review with the Test Dept, have there been any other FTL analysis of DAC columns with weld failures, possibly by the Return Center?

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

Ian Dawson

From: Rick Pitel
Sent: Tuesday, November 14, 2006 8:38 AM
To: Ian Dawson
Subject: RE: 04-06 FLX-DAC Dealer and Labor Opn11-13-06.xls

Ian, the file we use run our standard reports does not have the labor operation on it. A program could be developed that could pull the SRT codes off the warranty tapes, but for 76 claims, it would actually be faster to paste the claim number into the IMS screen to get it.

From: Ian Dawson
Sent: Monday, November 13, 2006 11:27 AM
To: Rick Pitel
Subject: 04-06 FLX-DAC Dealer and Labor Opn11-13-06.xls

Rick,
Could you add the labor operation and Repairing Dealer's name to the attached spreadsheet?

Our Government wants it.

Thanks,,
Ian

Ian Dawson

From: Carlos Cosme
Sent: Tuesday, November 14, 2006 12:42 PM
To: Ian Dawson; Terry Watkins
Subject: FW: Test Procedures

FYI, these are the tests being done by Douglas Autotech to determine the strength of columns with poor weld penetration.

From: Osborne, Steve [mailto:OsborneS@douglasautotech.com]
Sent: Tuesday, November 14, 2006 11:42 AM
To: Carlos Cosme
Cc: David Jensen; Tony Morgan
Subject: FW: Test Procedures

-----Original Message-----

From: Ruedisueli, Matt
Sent: Tuesday, November 14, 2006 2:20 PM
To: Osborne, Steve
Cc: Kenny, Jim
Subject: Test Procedures

Per the discussion we had at Freightliner, I will be performing the following four tests detailed below (see highlighted PIS test). In addition, we are trying to do an ultimate strength crush test, that is not a standard test. I will be including my results with the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) letter, for the tests that are complete, this Thursday. Please let me know if Carlos or David have any questions. Thanks.

Matt

Pick PIS Tests

6005001-C PIS Tests

- Axial Lash
- Driver Entry Durability
- Fatigue Aft Load
- Horn Contact Durability
- Radial Lash Fore/Aft
- Radial Lash Side/Side
- Rotational Durability
- Rotational Lash
- Rotational Torque
- Salt Spray Test
- Telescope Durability (locked)
- Telescope Durability (unlocked)
- Telescope Operation Force
- Telescope Pull Out Strength
- Telescope Retaining Force
- Telescope Retaining Strength
- Thermal Durability
- Tilt Cycle Durability and Life Test
- Tilt Retention Force
- Torsional Fatigue
- Torsional Strength
- Vibration Fatigue



Summary:

This test will simulate a truck driver pulling himself up into the cab, using the steering wheel. The load will be applied at a certain distance and angle to accurately recreate the drivers arm pulling on the steering wheel.

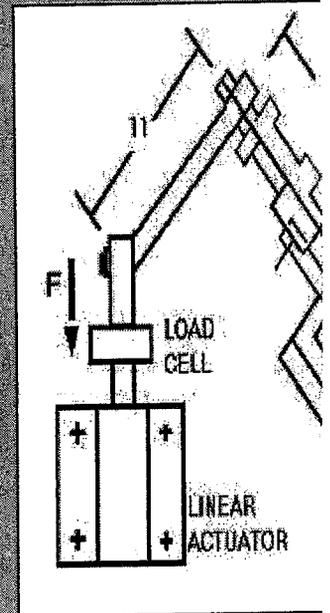
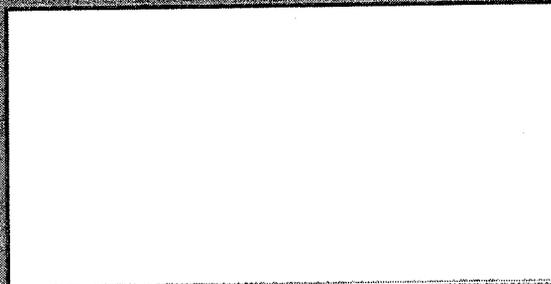
Specification:

No cracks or breakage at a load of 979N and 11. Tilt and telescopic refer held after test. 6004011

Runtime: 13.89 hrs

Type: Durability

Additional Information



Pick PIS Tests

6005001.C PIS Tests

- Axial Lash
- Driver Entry Durability
- Fatigue Aft Load
- Horn Contact Durability
- Radial Lash Fore/Aft
- Radial Lash Side/Side
- Rotational Durability
- Rotational Lash
- Rotational Torque
- Salt Spray Test
- Telescope Durability (locked)
- Telescope Durability (unlocked)
- Telescope Operation Force
- Telescope Pull Out Strength
- Telescope Retaining Force
- Telescope Retaining Strength
- Thermal Durability
- Tilt Cycle Durability and Life Te
- Tilt Retention Force
- Torsional Fatigue
- Torsional Strength
- Vibration Fatigue



Summary:

This durability test will repeatedly apply a load down the center axis of the column, while the telescope lock is engaged.

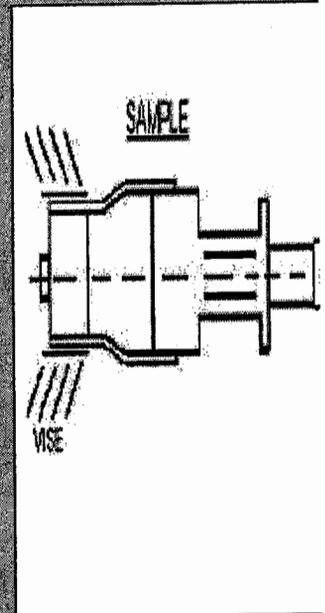
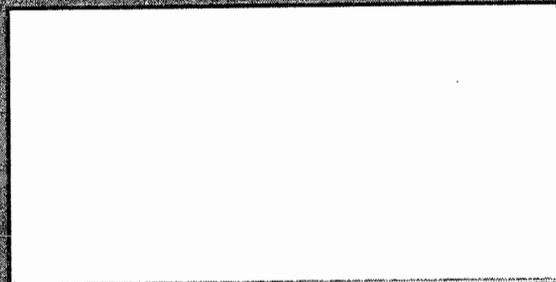
Specification:

No cracks or breakage cycles. Column to be full 890 N. Frequency = 10

Runtime: 0.28 hrs

Type: Durability

Additional Information



Pick PIS Tests

6005001-C PIS Tests

- Axial Lash
- Driver Entry Durability
- Fatigue Aft Load
- Horn Contact Durability
- Radial Lash Fore/Aft
- Radial Lash Side/Side
- Rotational Durability
- Rotational Lash
- Rotational Torque
- Salt Spray Test
- Telescope Durability (locked)
- Telescope Durability (unlocked)
- Telescope Operation Force
- Telescope Pull Out Strength
- Telescope Retaining Force
- Telescope Retaining Strength
- Thermal Durability
- Tilt Cycle Durability and Life Te
- Tilt Retention Force
- Torsional Fatigue
- Torsional Strength
- Vibration Fatigue

Summary:

This test will measure the load required pull the telescoping shaft out of the column assembly. The peak load recorded will be reported.

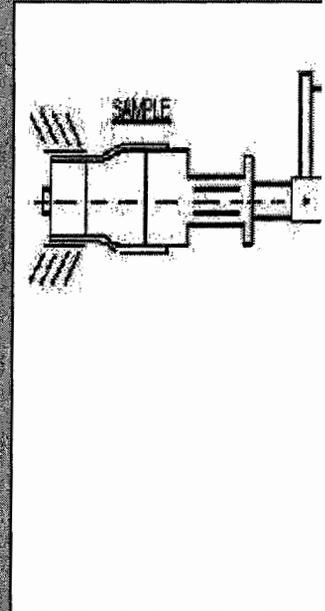
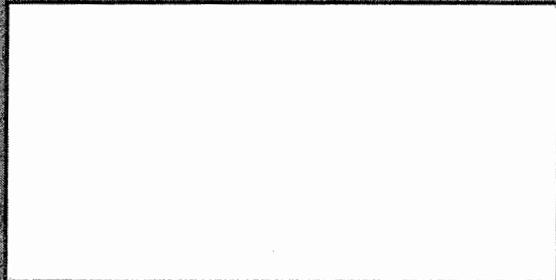
Specification:

With telescope unlocked to be 2,000 N minimum

Runtime: 0.10 hrs

Type: Measurement

Additional Information



Pick PIS Tests

6005001-C PIS Tests

- Axial Lash
- Driver Entry Durability
- Fatigue Aft Load
- Horn Contact Durability
- Radial Lash Fore/Aft
- Radial Lash Side/Side
- Rotational Durability
- Rotational Lash
- Rotational Torque
- Salt Spray Test
- Telescope Durability (locked)
- Telescope Durability (unlocked)
- Telescope Operation Force
- Telescope Pull Out Strength
- Telescope Retaining Force
- Telescope Retaining Strength
- Thermal Durability
- Tilt Cycle Durability and Life Te
- Tilt Retention Force
- Torsional Fatigue
- Torsional Strength
- Vibration Fatigue



Summary:

This durability test will repeatedly shake the test part at a specified acceleration level. The part will be checked for cracks or looseness after testing has completed.

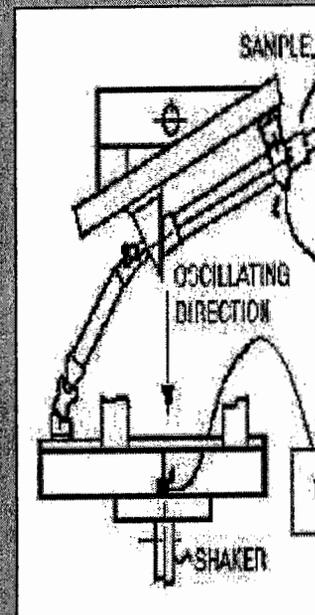
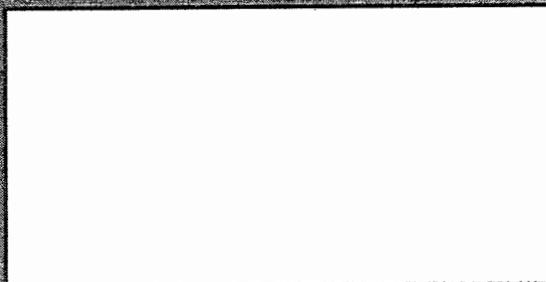
Specification:

No cracks or breakage. 10,000,000 cycles of vibration following conditions, ± applied at base of vibra

Runtime: 198.41 hrs

Type: Durability

Additional Information



Matthew E. Ruedisuelli
 Manufacturing Engineering Manager
 Douglas Autotech Corporation
 300 Albers Road
 Bronson, MI 49028
 517-369-2315 ext. 307
 517-369-7217 FAX

Ian Dawson

From: Jason Mao
Sent: Wednesday, November 15, 2006 4:06 PM
To: Ian Dawson
Cc: Tony Morgan
Subject: RE: Steer Column Claims

Ian,
For P2s built before 2006, only DAC columns were used.
Thanks,
Jason

From: Ian Dawson
Sent: Tuesday, November 14, 2006 2:08 PM
To: Jason Mao
Subject: FW: Steer Column Claims

Jason,
Can you please confirm that these two vehicles were build with a DAC column?

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

From: Brian Burton
Sent: Tuesday, November 14, 2006 1:50 PM
To: Ian Dawson
Subject: RE: Steer Column Claims

Ian,

We have two files that could potentially be related to this issue. Can you tell from the following VINs if these vehicles have Autotec steering assemblies?

1FUJBBCK04LM69111 -
2004 - Freightliner - CST120

1FUJF0DE55LU68894 -
2005 - Freightliner - CL112

From: Ian Dawson
Sent: Monday, November 13, 2006 1:49 PM
To: Brian Burton
Subject: Steer Column Claims

Brian,
I'm completing a NHTSA Information Request concerning broken welds on Douglas Autotec steering column assemblies, as installed in MY 2004 and 2005 Century and Columbia.

Does FTL have any claims alleging incidents, crashes, property damage, injuries, fatalities or subrogation claims that have been attributed to the steering column in these vehicles?

If there are any, the incident and claim date, compliant summary, consumer comments and FTL assessment will be needed.

Thanks,
Ian

Ian Dawson
Government Technical Affairs
Freightliner LLC
503-745-6375
Fax 503-745-5544
iandawson@Freightliner.com

**POTENTIAL
FAILURE MODE AND EFFECTS ANALYSIS
(DESIGN FMEA)**

Component: Tilt/Telescope Column
 Model/Year(s) Vehicle(s): 1996/ALL
 Core Team: A. Biggs, B. Bowerman, A. Krizan, J. Wielgos

DFMEA Number: 606
 Design Responsibility: PE 1
 Key Date: Production June 1995
 FMEA Date (Orig): 3/95 (Rev): C (released 6005xxxx series)

Item Function	Potential Failure Mode	Potential Effect(s) of Failure	S e v e r i t y	C i a s e	O c c u r r	C u r r e n t D e s i g n C o n t r o l s	D e t e r m i n e d	R. P. N.	R e c o m m e n d e d A c t i o n (s)	R e s p o n s i b i l i t y & T a r g e t C o m p l e t i o n D a t e	Action Results																																																																																										
											A c t i o n s T a k e n	S e v e r i t y	R. P. N.																																																																																								
TORQUE TRANSMISSION (0-1000 In. lbs.)	Steering wheel turns, but not vehicle.	Unable to control vehicle. Driver will not drive vehicle.	10	YC	1	Upper shaft (49171A) broken	2	20																																																																																													
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FMEA Number: 49171B
 Prepared By: A. Krizan, Engineering Manager
 FMEA Date (Orig.): 8/6/2002
 (Rev.): B 10/10/02

POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (DESIGN FMEA)

Make: Buy: X
 Component: Upper Shaft
 Model Year(s)/Vehicle(s): 600 Freightliner
 Core Team: Andy Krizan, Mary Chrysler, Bob Seay, Dan Norton, Toby Lepper

Design Responsibility: PE1
 Key Date: 8/30/2002

Item	Function	Potential Failure Mode	Potential Effect(s) of Failure	S e v e r i t y	C i a s s	P o t e n t i a l C a u s e s (s) / M e c h a n i s m (s) o f F a i l u r e	O c c u r r e n c e	C u r r e n t D e s i g n C o n t r o l s - P r e v e n t i o n - D e t e c t i o n	D e t e c t a b i l i t y	R. P. N.	Recommended Action(s)	Responsibility & Target Completion Date	Action Results																			
													Actions Taken	S e v e r i t y																		
10	Transmit torque from steering wheel to u-joint	Upper shaft breaks	Loss of connection to yoke (Loss of Steering)	10	YC	Improper material	1	<p>P- Using smallest cross section of shaft that will experience torsional (Ø28.15 and Ø12.7 hole through one wall), axial and driver entry load (Ø23.42 x Ø15), 372MPa ultimate tensile strength calculates a 540Nm torsional strength, 94,000N axial strength, 5400N bending from steering wheel hub to snap ring groove.</p> <p>D- 407Nm minimum ultimate torsional strength</p> <p>D- Torsional Fatigue: No cracks, breakage or looseness after 500,000 cycles @ ±113Nm, Frequency of 3 Hz</p> <p>D- Driver Entry Durability: No cracks, breakage after 50,000 cycles @ 979N, Frequency of 1 Hz</p> <p>D- Telescope pull out strength: Minimum 2000N</p>	1	No action required because occurrence and detection are 1																						
															Diameter too small	1	<p>P- Using smallest cross section of shaft that will experience torsional (Ø28.15 and Ø12.7 hole through one wall), axial and driver entry load (Ø23.42 x Ø15), 372MPa ultimate tensile strength calculates a 540Nm torsional strength, 94,000N axial strength, 5400N bending from steering wheel hub to snap ring groove.</p> <p>D- 407Nm minimum ultimate torsional strength</p> <p>D- Torsional Fatigue: No cracks, breakage or looseness after 500,000 cycles @ ±113Nm, Frequency of 3 Hz</p> <p>D- Driver Entry Durability: No cracks, breakage after 50,000 cycles @ 979N, Frequency of 1 Hz</p> <p>D- Telescope pull out strength: Minimum 2000N</p>	1	No action required because occurrence and detection are 1													
																								Spline strips	1	<p>P- Standard Spine DS-1006B</p> <p>P- Customer defined specification</p>	1	No action required because occurrence and detection are 1				
Taper does not hold (steering wheel hub does not seat)	1	<p>P- Standard Taper DS-1014M</p> <p>P- Customer defined specification</p>	1	No action required because occurrence and detection are 1																												