

# DAIMLERCHRYSLER

1004 001 -6 A 9:43

October 5, 2004

Mr. Kenneth N. Weinstein  
Associate Administrator, Safety Assurance  
National Highway Traffic Safety Administration  
400 Seventh Street, S.W.  
Washington, D.C. 20590

DEFECTS INVESTIGATION

DaimlerChrysler Corporation

Stephan J. Speth

Director

Vehicle Compliance & Safety Affairs

04V-480  
(4 pages)

Dear Mr. Weinstein:

Attached is DaimlerChrysler Corporation's Defect Information Report, complying with the requirements of 49 CFR Part 573, Defect and Noncompliance Reports, which contains details of a potential safety related defect in some 1998-2000 model year Dodge, Plymouth, and Chrysler minivan vehicles. The airbag warning lamp may illuminate due to increased clockspring terminal resistance or from a backround condition. While DaimlerChrysler Corporation (DCC) cannot establish conclusively when during the vehicle life a backround condition was induced, DCC believes it is likely that the condition was introduced during vehicle service. This issue has been the subject of NHSTA investigations PE00-032, EA01-007, RQ04-001, and EA04-013.

As you will note from our numerous responses to the above investigations and the attached chronology, DCC has conducted an exhaustive analysis of this issue. As stated in the EA04-013 response dated September 3, 2004, it is DCC's continuing position that the clockspring replacement rate for the subject vehicles results from the benign condition of increased terminal resistance or from a backround condition introduced by subsequent service on the vehicle. Moreover, the evidence shows that the customers respond to the mandated warning lamp. While DCC still feels that this issue is not a safety-related defect that requires a safety recall, DCC is undertaking this action as a good faith gesture to avoid a possible prolonged dispute with the agency and feels this action is in the best interest of our customers.

Sincerely,

  
Stephan J. Speth

Enclosures: Defect Information Report for DaimlerChrysler Corporation Recall D17  
Dealer and Owner Notification Letters – Recall D17

cc: K. C. DeMeter, NHTSA  
Division of Occupational Safety & Health  
California Department of Industrial Relations

**DEFECT INFORMATION REPORT FOR DAIMLERCHRYSLER RECALL D17**  
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**Submission date:** October 5, 2004

**Identifying classification of vehicles potentially affected:**

Make	Model	Model Year	Inclusive Dates of Manufacture	Currently Registered Vehicle Volume
Dodge	Caravan, Grand Caravan	1998-2000	03/1998-08/2000	955,344
Chrysler	Town & Country			
Plymouth	Voyager, Grand Voyager			

The involved Vehicle Identification Number range is:

<u>Low</u>	<u>High</u>
WB595632	WB780998
WR800975	WR858209
XB500037	XB924509
XR100005	XR479787
YB500001	YB810274
YR500001	YR899657

(VIN last eight characters) – W = 1998 model year; X = 1999 model year; Y = 2000 model year; B = St. Louis South Assembly Plant, Fenton, Missouri; R = Windsor Assembly Plant, Windsor, Ontario; the last six digits = sequential number.

**Estimated percentage containing defect:** Unknown

**Description of defect:**

The airbag warning lamp may illuminate due to increased clockspring terminal resistance, or from a backround condition most likely introduced during vehicle service.

**The name, address and telephone number of the supplier who manufactured the subject components:**

Methode Electronics  
Automotive Electronic Control Division  
111 West Buchanan Street  
Carthage, IL 62321  
(217) 357-3941

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**The following chronology of principal events occurred between January and September of 2004 and led to the determination of a defect:**

- NHTSA opened investigation RQ04-001 in January, 2004 based on complaints of illumination of the air bag warning lamp in 1998.5 - 1999 MY Chrysler, Dodge, and Plymouth minivans due to an alleged open circuit condition in the clockspring assembly. NHTSA claimed that at least some of these have been substantiated as being backwound. NHTSA upgraded the investigation to an Engineering Analysis EA04-013 in June, 2004 and included the 2000 MY minivan vehicles.
- DaimlerChrysler Corporation responded to RQ04-001 on March 31, 2004 and to EA04-013 on September 3, 2004.
- It is known that damage, referred to as "backwinding" of the clockspring ribbon, could occur if the clockspring were to become off-centered during either vehicle assembly or service actions involving the steering system. This damage is not immediately detectable when it is induced. After continued cycling, however, the damaged ribbon can ultimately fatigue, resulting in an open circuit and illumination of the cluster warning lamp. For this reason the part itself, as well as the assembly process, incorporate numerous controls to prevent damage from occurring.
- 1996 - 1998.5 MY NS vehicles equipped with a 6-circuit clockspring were recalled in 2002 (DaimlerChrysler Corporation Recall B24) for the backwinding condition after a two year long NHTSA investigation (PE00-032/EA01-007).
- During the previous investigation, laboratory and field-testing established that once the clockspring ribbon begins to exhibit characteristics of fatigue, the airbag warning lamp would begin to illuminate, at first intermittently and then continuously.
- An absence of available manufacturing data at the time of the original investigation did not allow conclusive proof that the clockspring was installed off-center during the vehicle assembly process. The most plausible scenario is that the out of vehicle steering column build-up line, which was a new process for these minivans, allowed for more opportunity to damage the clockspring prior to it being coupled to the steering system.
- 1998.5 - 2000 MY minivans were not included in Recall B24 because of the lack of field input data attributed to backwinding. It was established that a 7-circuit clockspring assembly was used for all applications from March 1, 1998 until the end of production with the 2000 MY. The 7-circuit clockspring is equipped with a stiffer ribbon that is more robust than the 6-circuit clockspring.
- To the extent that some 7-circuit clocksprings replaced in the field have shown evidence of backwinding, this most likely occurred during an intervening service or repair, since all information available supports the conclusion that a clockspring backwound during factory installation will exhibit the condition early in the life of the vehicle, likely well under 50,000 miles according to warranty data.
- Investigation has also shown that the 7-circuit clockspring is prone to increased terminal resistance, in which inconsistent gold plating allows the brass substrate to oxidize,

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forming a slight barrier between the clockspring terminals. This can result in a condition that illuminates the airbag warning lamp and would be diagnosed as an open circuit at the clockspring. Analysis of the driver airbag circuit has determined that the warning lamp will illuminate at approximately 4.8 ohms. Vehicles equipped with 7-circuit clocksprings exhibiting the increased terminal resistance condition typically had circuit resistance readings in the 5 to 6 ohm range. Analysis has also confirmed that the driver airbag circuit remains completely operational with a resistance up to at least 13 ohms. Thus, this increased terminal resistance condition is completely benign from a safety perspective, and the airbag remains available to deploy in a crash if needed. However, repair of this condition will result in unnecessary expense for owners.

- As a part of the EA01-007 investigation, a comprehensive clockspring return program was conducted and over 1000 7-circuit parts were analyzed. 90% of these 7-circuit clocksprings analyzed were deemed no trouble found (NTF) and had a fully functional airbag circuit. Removal of the clockspring from the vehicle will cleanse oxidized terminals, thus, the increased terminal resistance would result in a NTF condition. By contrast, 71% of the 1996 and 25% of the 1997 6-circuit returned parts in this program were found to be backround.
- This data was presented to the Vehicle Regulations Committee on September 28, 2004 who, in order to avoid a prolonged technical dispute with the agency, decided to conduct a safety recall (identical to DaimlerChrysler Corporation Recall B24) to replace the clockspring on vehicles with less than 70,000 miles, and offer an extended lifetime warranty on the clockspring assembly for all affected vehicles, regardless of mileage.

### **Statement of measures to be taken to correct defect:**

DaimlerChrysler Corporation will conduct a safety recall and replace the clockspring assembly on all affected vehicles with 70,000 miles or less. An extended lifetime warranty will also be placed on this component for all affected vehicles regardless of mileage. DaimlerChrysler Corporation will initiate national notification to dealers on October 5, 2004 and begin notification to owners on October 12, 2004.

DaimlerChrysler Corporation has a longstanding policy and practice of reimbursing owners who have incurred the cost of repairing a problem that subsequently becomes the subject of a field action. To ensure consistency, DaimlerChrysler Corporation, as part of the owner letter, will request that customers send original receipt and/or other adequate proof of payment to the company for confirmation of the expense.