

# Technical Service Bulletin

**NUMBER:** 14-002-01

**GROUP:** Fuel

**DATE:** Mar. 16, 2001

*This bulletin is supplied as technical information only and is not an authorization for repair. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission of DaimlerChrysler Corporation.*

**THIS BULLETIN SUPERCEDES TECHNICAL SERVICE BULLETIN 14-06-00, DATED SEP. 15, 2000, WHICH SHOULD BE REMOVED FROM YOUR FILES. THIS IS A COMPLETE REVISION AND NO ASTERISKS HAVE BEEN USED TO HIGHLIGHT REVISIONS.**

***SUBJECT:***

Longer Than Normal Engine Crank Time Prior To Engine Start

***OVERVIEW:***

This bulletin involves the repair of the fuel pump module.

***MODELS:***

1999 - 2001 (WJ) Grand Cherokee  
2001 (WG) Grand Cherokee

**NOTE: THIS BULLETIN APPLIES TO VEHICLES EQUIPPED WITH A GASOLINE ENGINE.**

***SYMPTOM/CONDITION:***

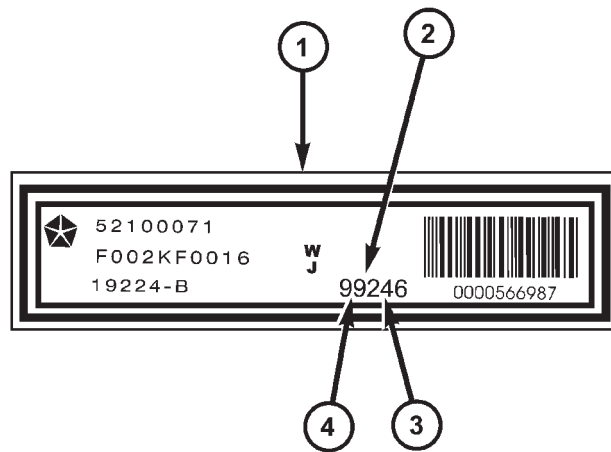
The customer may experience a longer than normal engine cranking time prior to engine start. This condition may be caused by fuel pressure loss due to a worn sealing ring within the fuel module.

**NOTE: QUALITY ANALYSIS HAS REVEALED THAT A WORN SEALING RING IS THE PRIMARY REASON WHY THE FUEL MODULE IS REPLACED FOR FUEL PRESSURE LEAK DOWN. IT IS RECOMMENDED THAT THE SEALING RING BE REPLACED BEFORE A FUEL MODULE ASSEMBLY REPLACEMENT IS ATTEMPTED.**

***DIAGNOSIS:***

1. Start and run the engine. Verify normal fuel system pressure of 339 kPa +/- 34 kPa (49.2 psi +/- 5 psi).
2. Stop the engine. Verify that the fuel system pressure does not fall below 207 kPa (30 psi) in less than five (5) minutes.
3. If the fuel pressure does not fall below 207 kPa (30 psi) in less than five (5) minutes, then the long crank time may not be due to the fuel system. Further diagnosis must be made to the entire engine system.
4. If fuel pressure does fall below 207 kPa (30 psi) in less than five (5) minutes, then refer to TSB 14-05-99 for additional fuel system diagnostic assistance.

5. If diagnosis determines that the cause of the fuel system pressure loss is due to the fuel pump module, then inspect the fuel pump module part number label for its assembly build date code (Julian date). The part number label is affixed to the fuel pump module wire harness (pigtail), near the electrical connector to the body wire harness.
6. Inspect the bottom row of numbers on the fuel module label and locate the module build date code. Determine the date of build (Julian date) for the fuel module assembly. The first two numbers in the date code indicate the calendar year (1998 = 98, 1999 = 99, 2000 = 00, 2001 = 01), and the remaining three numbers in the code (1 to 365) represent the day of the calendar year (Figure 1).



80c64873

**FIGURE 1 - FUEL MODULE PART NUMBER LABEL**

1-	FUEL PUMP MODULE PART NUMBER LABEL
2-	FUEL MODULE ASSEMBLY DATE CODE (A JULIAN DATE)
3-	FIRST TWO DIGITS = YEAR OF BUILD (IN ILLUSTRATION 99 = 1999)
4-	LAST THREE DIGITS = DAY OF YEAR (IN ILLUSTRATION 246 = SEPT 03)

7. If the module part label indicates that the fuel module assembly was built on or before November 04, 1999 (Julian date of 99308), then a spacer must be used with the sealing ring. The split washer in the repair kit is used as the sealing ring spacer.

**NOTE: FAILURE TO USE THE SPLIT WASHER, AS A SPACER FOR THE SEALING RING (WHEN REQUIRED), MAY CAUSE EXCESSIVE MOVEMENT AND DAMAGE TO THE SEALING RING.**

- 8. If the module part label indicates that the fuel module assembly was built after November 04, 1999 (Julian date of 99308), then a spacer must NOT be used with the sealing ring. The split washer in the repair kit can be discarded.

**NOTE: SOME REPLACEMENT FUEL PUMP MODULES, BUILT AFTER NOVEMBER 04, 1999 (DATE CODE 99308), HAVE BEEN USED TO REPLACE FUEL MODULES BUILT PRIOR TO NOV. 04, 1999. IT IS IMPORTANT THAT PRIOR TO EACH REPAIR THE MODULE DATE CODE BE PROPERLY DETERMINED.**

- 9. An ALTERNATE METHOD to determine whether a spacer is required is to measure the width of the sealing ring gland (Figure 2).
  - a. Apply sufficient pressure to hold the poppet firmly in place on top of the fuel outlet port. To prevent an incorrect measurement, the applied pressure must be on-center. The poppet can easily tip up if an off-center force is applied to it.
  - b. Carefully measure the width of the sealing ring gland.
  - c. If the gland width is between 3.0 and 3.5 mm (0.118 to 0.138 in.), then a spacer is not required to be installed.
  - d. If the gland width is 4.0 mm (0.157 in.) or greater, then a spacer is required to be installed prior to the installation of the new sealing ring. The sealing ring spacer is 1 mm (0.394 in.) in thickness and is used to prevent excessive movement (wear) of the sealing ring in the gland.

**PARTS REQUIRED:**

Qty.	Part No.	Description
1	05019308AA	Kit, Fuel Pump Module Repair

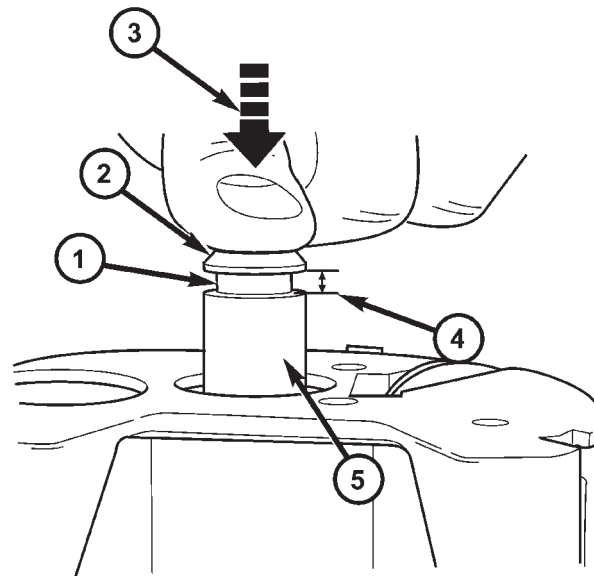
**EQUIPMENT REQUIRED:**

1	6856	Wrench, Fuel Module Locknut Spanner
1	5069	Kit, Pressure Test
1	6539	Adapter, Fuel Pressure (for 5/16" fuel lines)

**REPAIR PROCEDURE:**

**NOTE: WHENEVER THE FUEL PUMP MODULE IS SERVICED, SPECIAL CARE MUST BE TAKEN TO PREVENT ANY DAMAGE TO THE FUEL LEVEL SENDING UNIT, OR TO THE FLOAT AND FLOAT ARM.**

- 1. Remove the fuel pump module. Refer to the appropriate Grand Cherokee Service Manual - Group 14 (Fuel), for detailed removal instructions. Clean any debris from immediate area of the fuel module before removal.
- 2. Drain excess fuel from the fuel module assembly.



80cd4027

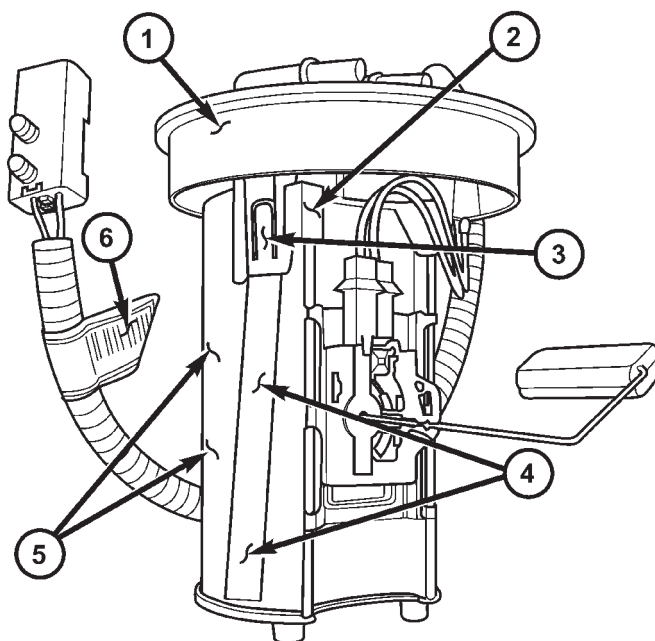
**FIGURE 2 - MEASURING GLAND WIDTH**

1-	SEALING RING GLAND
2-	POPPET
3-	ON-CENTER FORCE APPLIED
4-	MEASUREMENT REQUIRED TO DETERMINE GLAND WIDTH
5-	FUEL OUTLET PORT

3. Place the fuel module on a clean, flat surface (Figure 3).
4. From the fuel module repair kit, p/n 05019308AA, locate the three plastic standoff spacers. Each standoff spacer will be used as a tool to release three retaining clips. The retaining clips secure the fuel module plastic top half to the lower half aluminum housing.
5. Slide a standoff spacer into each retaining clip guide channel. Each standoff spacer should be inserted between the aluminum housing and the plastic retaining clip. Insert each standoff spacer far enough into the guide channel so that the retaining clips disengage from the aluminum housing.

**NOTE: MAKE SURE THE PLASTIC STANDOFF SPACERS ARE FULLY INSERTED INTO THE GUIDE CHANNELS AND ALL THREE RETAINING CLIPS HAVE BEEN DISENGAGED FROM THE LOWER HALF ALUMINUM HOUSING.**

6. With the three retaining clips disengaged, separate the plastic top from the aluminum housing.



80c64874

**FIGURE 3 - FUEL MODULE ASSEMBLY**

1-	PLASTIC TOP HALF
2-	GUIDE CHANNEL
3-	RETAINING CLIP
4-	PLASTIC STANDOFF SPACER
5-	LOWER HALF ALUMINUM HOUSING
6-	PART NUMBER LABEL

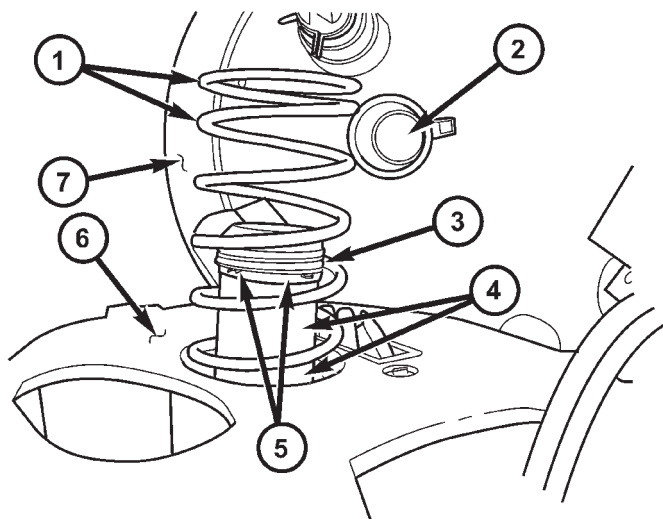
- Remove the expansion spring from the plastic outlet tube of the fuel pump (Figure 4). The spring will be reused.

**NOTE: DO NOT DISCONNECT ANY INTERNAL MODULE WIRING HARNESS CONNECTIONS.**

- With one hand, and using two fingers, pinch the black sealing ring. Squeeze the sealing ring to one side of the plastic outlet tube so it can be removed using your other hand. Remove and discard the old sealing ring.

**NOTE: DO NOT USE ANY SHARP TOOL TO REMOVE THE OLD SEALING RING. DAMAGE TO ANY AREA OF THE PLASTIC FUEL OUTLET TUBE GLAND MAY CAUSE DAMAGE TO THE NEW SEALING RING OR OTHER SEALING PROBLEMS.**

- Use shop air to clean the plastic fuel outlet and around the gland. Clean the cylindrical bore, located in the plastic top half. Inspect all mating surfaces for damage, scratches, and debris.
- If the fuel module assembly was built after November 04, 1999 (Julian date 99308), then proceed to step 13. Do not install a spacer on these later built fuel modules.



80c64875

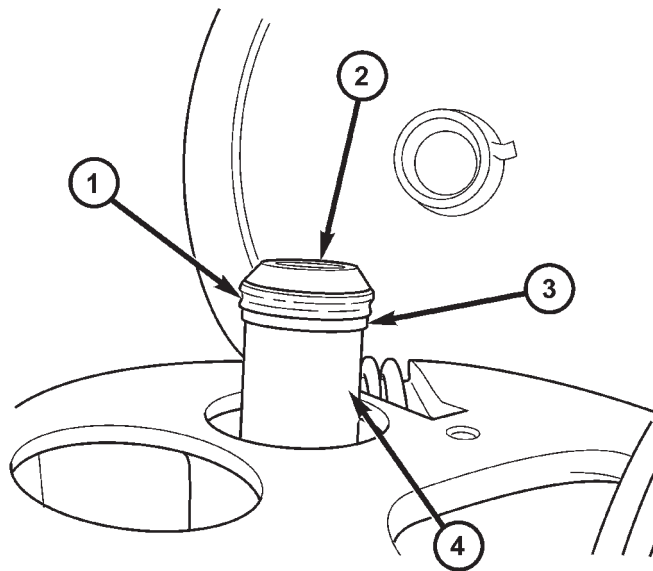
**FIGURE 4 - SEALING RING DETAIL**

1-	EXPANSION SPRING
2-	CYLINDRICAL BORE IN TOP HALF
3-	SEALING RING POSITIONED ABOVE SPACER
4-	PLASTIC FUEL OUTLET TUBE
5-	SPLIT WASHER AS SEAL SPACER (IF USED)
6-	LOWER HALF OF FUEL MODULE
7-	TOP HALF OF FUEL MODULE

11. Locate the plastic split washer in the repair kit. The split washer will be used to take up the extra space in the sealing ring gland width on the plastic fuel outlet tube.
12. If the fuel module was built on or before November 04, 1999 (Julian date 99308), then slide the split washer around and onto the sealing ring gland. The spacer must be positioned at the bottom, below the sealing ring.

**NOTE: THE SPLIT WASHER IS INSTALLED CORRECTLY AS A SPACER WHEN THE OUTER DIAMETER OF THE WASHER IS ALIGNED WITH THE OUTER DIAMETER OF THE PLASTIC OUTLET TUBE.**

13. Using the enclosed packet of special lubricant, lubricate the new sealing ring, its gland area, and the mating cylindrical bore located in plastic top half. Save some lubricant for later use. No other lubricant should be used.



80cd3fba

**FIGURE 5 - SEAL AND SPACER INSTALLED**

1-	SEALING RING
2-	POPPET
3-	1 MM SPACER (IF REQUIRED)
4-	FUEL OUTLET PORT

14. Install the new sealing ring over the top of the plastic fuel outlet tube. Make sure the sealing ring does not twist during installation. Carefully work the sealing ring around the plastic outlet tube and into the gland. Do not over stretch the sealing ring (Figure 5).

**NOTE: MAKE CERTAIN THAT THE SEALING RING HAS NOT TWISTED OR BEEN STRETCHED EXCESSIVELY. INSPECT THE ENTIRE SEALING RING AND SPACER (IF INSTALLED) FOR PROPER POSITIONING. THE SPACER MUST BE AT THE BOTTOM, BELOW THE SEALING RING.**

15. Lubricate the sealing ring again with lubricant from the packet.
16. Install the previously removed expansion spring over the plastic fuel outlet tube.
17. Carefully align the top half retaining clips to the guide channels in the aluminum housing. Make certain that the cylindrical bore aligns with the plastic outlet tube.
18. Compress the plastic top half onto the aluminum housing until the retaining clips have fully engaged the slots in the aluminum housing. Inspect each retaining clip and the expansion spring for proper positioning.
19. Press the plastic top half of the fuel pump module down onto the aluminum housing until the fuel module is in its fully collapsed position. When released, the top half of the fuel pump module should freely rebound to its fully extended position.

- 20. Repeat step 19 twice. It is important that the module expands on its own and does not bind.
- 21. Verify that the fuel pump module returns to its fully extended position. If not, the top half must be removed, the sealing ring inspected, and additional lubricant must be applied to the sealing ring and mating surfaces.
- 22. Inspect the fuel pump module filter for damage or contamination.
- 23. Install the fuel pump module-to-fuel tank seal to the fuel pump module.
- 24. Install the fuel pump module and the fuel tank. Refer to the appropriate Grand Cherokee Service Manual - Group 14 (Fuel) for detailed installation instructions.

**NOTE: IF THE FUEL PUMP MODULE AND/OR FUEL TANK-TO-FUEL PUMP MODULE SEAL IS NOT INSTALLED CORRECTLY, THEN AN EVAPORATIVE SYSTEM LEAK MAY OCCUR CAUSING A DIAGNOSTIC TROUBLE CODE (DTC) AND MIL ILLUMINATION.**

- 25. Start and run the engine. Verify correct fuel system pressure of 339 kPa +/- 34 kPa (49.2 psi +/- 5 psi).
- 26. Stop the engine. Verify that the fuel system pressure does not drop below 207 kPa (30 psi) in less than five (5) minutes.

**POLICY:**

Reimbursable within the provisions of the warranty.

**TIME ALLOWANCE:**

Labor Operation No:		
14-50-01-98	Repair fuel pump module	1.3 Hrs.
14-50-01-66	Optional Equip. - Trailer Tow	1.0 Hrs

**FAILURE CODE:**

P8	New Part
----	----------