Dealer Service Instructions for:

Customer Satisfaction Notification No. C31
Cooling Fan Module

Models

2003 (ZB) Dodge Viper

NOTE: This notification applies only to the above vehicles built through July 28, 2003 (MDH 0728XX).

IMPORTANT: Some of the involved vehicles may be in dealer vehicle inventory. Dealers should complete this repair on these vehicles before retail delivery. Dealers should also perform this repair on vehicles in for service. Involved vehicles can be determined by using the VIP inquiry process.

Subject

A check ball retainer in the cooling fan module on about 1,400 of the above vehicles may become dislodged. This could cause reduced cooling fan operation and result in an engine overheating condition.

Repair

The cooling fan module must be replaced on all involved vehicles. If the check ball retainer is missing from the cooling fan module, the power steering gear, pump and cooler will be replaced.
Dealers should attempt to minimize customer inconvenience by placing the owner in a loaner vehicle if inspection determines that steering system replacement is required and the vehicle must be held overnight.

### Parts Information

#### A. Cooling Fan Module

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDA1C311</td>
<td>Cooling Fan Module</td>
</tr>
</tbody>
</table>

Each package contains a cooling fan module and two (2) quick connect O-rings. Due to the small number of involved vehicles (only 1,400 affected vehicles), no parts will be distributed initially. Dealers should check the Global Recall System on DealerCONNECT to see if they have any involved vehicles and then order the necessary cooling fan module for scheduled repairs.

#### B. Steering System Package

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDA1C312</td>
<td>Steering System Package</td>
</tr>
</tbody>
</table>

Each package contains:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Steering Gear Assembly</td>
</tr>
<tr>
<td>1</td>
<td>Power Steering Pump</td>
</tr>
<tr>
<td>1</td>
<td>Power Steering Cooler</td>
</tr>
<tr>
<td>2</td>
<td>Tie Rod End Nuts</td>
</tr>
<tr>
<td>1</td>
<td>Quick Connect O-ring</td>
</tr>
<tr>
<td>2</td>
<td>Steering Gear O-rings</td>
</tr>
</tbody>
</table>

Due to the small number of involved vehicles expected to require steering system replacement, no parts will be distributed initially. Steering system packages should be ordered only after inspection determines that replacement is required. Very few vehicles are expected to require steering system replacement.
A. Remove and Inspect Cooling Fan Module:

1. Disconnect the throttle body air inlet hose and remove the air cleaner housing assembly.

2. Raise the vehicle on an appropriate hoist.

3. Remove the front belly pan.

4. Remove the push pin retainers from the lower air dam where it connects to the radiator fan shroud (Figure 1).

5. Lower the vehicle.

6. Remove the three (3) oil cooler bolts and set the oil cooler aside.

7. Disconnect the fan control solenoid electrical connector (Figure 2).

8. Place a drain pan beneath the cooling fan module to catch any fluid that may exit the fan drive or hoses.

9. Disconnect the two high pressure lines from the hydraulic fan drive (Figure 2). Remove the O-rings from the line fittings and discard them.
A. Remove and Inspect Cooling Fan Module (Continued)

10. Disconnect the low pressure return hose from the hydraulic fan drive (Figure 2).

11. Unclip the hydraulic fan lines from the cooling fan shroud.

12. Remove the cooling fan module mounting fasteners (Figure 3).

13. Remove the fan and shroud assembly from the vehicle and place it on a clean work surface.

14. Using a steering pump pulley puller (Miller Special Tool #C-4333) and a 1/4” drive 5/16” deep well socket, remove the fan from the hydraulic fan drive (Figure 4).
A. Remove and Inspect Cooling Fan Module (Continued)

15. Remove the four (4) bolts from the hydraulic fan drive (Figure 5) and then separate the two halves.

16. Inspect the hydraulic fan drive for the presence of a snap ring above the check ball (Figure 6).
   - If the snap ring is missing, the steering system (steering gear, pump and cooler) must be replaced. Continue with Section B – Replace Steering Gear, Pump and Cooler.
   - If the snap ring is present, only the cooling fan module requires replacement. Continue with Section C – Install Cooling Fan Module.
   - If the check ball is retained by a roll pin, the cooling fan module has been replaced previously. The steering system (steering gear, pump and cooler) and cooling fan module must be replaced. Continue with Section B – Replace Steering Gear, Pump and Cooler.
**B. Replace Steering Gear, Pump and Cooler:**

**IMPORTANT:** Only vehicles that have a **missing** cooling fan snap ring (or a roll pin present) as determined by the inspection in Section A, require steering gear, pump and cooler replacement. Very few vehicles are expected to require steering gear, pump and cooler replacement.

1. Open the trunk, remove the battery access cover and then disconnect the negative battery cable.

2. Siphon as much fluid as possible from the power steering fluid reservoir.

3. Remove the accessory drive belt from the tensioner pulley and the power steering pump drive pulley (Figure 7).

4. Disconnect the A/C clutch coil electrical connector.

5. Remove the power steering cooler return hose from the power steering pump reservoir.

6. Remove the three (3) power steering pump mounting bolts.

7. Remove the power steering pump and lines as an assembly.
B. Replace Steering Gear, Pump and Cooler (Continued)

8. Remove the power steering pressure line and the power steering return line from the steering gear.

9. Remove the coupling pinch bolt that secures the intermediate shaft to the steering gear (Figure 8).

10. Secure the steering wheel in the straight-ahead position using a steering wheel holder.

11. Separate the intermediate shaft from the steering gear. A brass drift and hammer can be used if necessary.
Service Procedure (Continued)

B. Replace Steering Gear, Pump and Cooler (Continued)

12. Remove the two (2) steering gear mounting bolts (Figure 9).

   NOTE: Save the steering gear toe pattern shims when the steering gear is removed. The shims must be installed in their original location when the new steering gear is installed.

13. Place shop towels beneath the power steering cooler to catch any fluid that may exit the cooler or hoses.

Figure 9
B. Replace Steering Gear, Pump and Cooler (Continued)

14. Using Special Tool #8875, disconnect the lines from the power steering cooler (Figure 10).

15. Remove the two (2) power steering cooler mounting screws (Figure 10).

16. Remove and discard the power steering cooler.

17. Raise the vehicle on the hoist.

18. Remove the left front wheel and tire assembly.

19. Loosen the left front tie rod end jam nut (Figure 11).

20. Remove the nut from the left front outer tie rod.

21. Using Special Tool #C-3894A, release the left outer tie rod from the steering knuckle (Figure 12).

22. Remove the right front wheel and tire assembly.

23. Loosen the right front tie rod end jam nut (Figure 11).

24. Remove the nut from the right front outer tie rod.
Service Procedure (Continued)

B. Replace Steering Gear, Pump and Cooler (Continued)

25. Using Special Tool #C-3894A, release the right outer tie rod from the steering knuckle (Figure 12).

26. Remove the steering gear from the vehicle by sliding it out of the left front fender well forward of the steering knuckle.

27. Remove the steering gear mounting bushings from the old steering gear assembly (Figure 9) and install them on the new steering gear assembly.

28. Center the new steering gear and then install the steering gear into the vehicle by sliding it into the left front fender well forward of the steering knuckle.

29. Lower the vehicle to a height where the underhood steering gear mounting area can be reached as well as under the vehicle.

   IMPORTANT: Install the original toe pattern shims in their original locations when the new steering gear is installed in the vehicle.

30. Align the steering gear with the mounts on the frame. From the top, install the two steering gear mounting bolts through the gear (Figure 9). Start the driver side bolt into the nut on the frame, then reach underneath and start the special nut on the passenger side mounting bolt.

   NOTE: The toe pattern shims installed between the steering gear and the frame mounts must be oriented with the open end along the axis of the gear and facing either left or right. Do NOT install the shims with the open end facing to the front or rear of the vehicle.

31. Lower the vehicle completely.

32. Slide the original toe pattern shims onto the mounting bolts between the gear and the frame mounts (Figure 9).

33. Tighten the steering gear mounting bolts to 150 ft-lbs (203 N·m).
B. Replace Steering Gear, Pump and Cooler (Continued)

34. Raise the vehicle.

35. Remove the outer tie rod ends and jam nuts from the old steering gear assembly (Figure 11) and install them on the new steering gear assembly.

   **NOTE:** Count the number of turns required to remove the tie rod ends and install them using the same number of turns.

36. Connect the right tie rod end to the steering knuckle. Install one of the new tie rod nuts and then tighten the tie rod nut to 55 ft-lbs (75 N·m).

37. Install the right front wheel and tire assembly. Tighten the lug nuts to 90 ft-lbs (122 N·m).

38. Connect the left tie rod end to the steering knuckle. Install one of the new tie rod nuts and then tighten the tie rod nut to 55 ft-lbs (75 N·m).

39. Install the left front wheel and tire assembly. Tighten the lug nuts to 90 ft-lbs (122 N·m).

40. Lower the vehicle.

41. Using compressed air, blow out all of the power steering system lines.

42. Position the new power steering fluid cooler and install the two mounting screws (Figure 10).

43. Connect the steering gear-to-cooler line to the cooler.

44. Connect the cooler-to-reservoir line to the cooler.

45. Align the intermediate shaft with the steering gear shaft (Figure 8). Slide the intermediate shaft coupling onto the steering gear shaft until the bolt hole is properly aligned. Use a brass drift and hammer to tap the coupling into place if necessary.

46. Remove the steering wheel lock.
B. Replace Steering Gear, Pump and Cooler (Continued)

47. Install the coupling pinch bolt (Figure 8). Tighten the pinch bolt to 36 ft-lbs (49 N·m).

48. Using the supplied O-ring, connect the steering gear-to-cooler hose to the steering gear. Tighten the tube nut to 21 ft-lbs (28 N·m).

49. Remove the power steering pressure line from the old power steering pump.

50. Remove the fan motor return hose from the old power steering pump reservoir.

51. Using compressed air, blow out the power steering pump lines.

52. Remove the pressure line quick connect fitting from the new pump assembly. Discard the fitting.

53. Using the supplied O-ring, connect the power steering pressure line to the new pump assembly. Tighten the pressure line fitting to 21 ft-lbs (28 N·m).

54. Connect the fan motor return hose to the pump reservoir. Install the hose clamp on the return hose past the upset bead on the reservoir fitting.

55. Install the power steering pump assembly into position and install the three (3) mounting bolts. Tighten the bolts to 200 in-lbs (23 N·m).

56. Connect the cooler return hose to the new pump reservoir. Install the hose clamp on the return hose past the upset bead on the reservoir fitting.

57. Route the fan motor-to-steering gear pressure line then using the supplied O-ring, connect it to the steering gear. Tighten the tube nut to 21 ft-lbs (28 N·m).

58. Connect the A/C clutch coil electrical connector.

59. Install the accessory drive belt (Figure 7).
C. Install Cooling Fan Module:

1. Remove the two quick connect fittings from the new cooling fan module. Discard the fittings.

2. Position the new cooling fan module into the vehicle.

3. Install the cooling fan module fasteners (Figure 3). Tighten the fasteners to 45 in-lbs (5 N·m).

4. Install the oil cooler assembly. Tighten the oil cooler fasteners to 45 in-lbs (5 N·m).

5. Install the supplied O-rings onto the two high pressure line fittings and then lubricate the O-rings with power steering fluid.

6. Connect the two high pressure fluid hoses to the hydraulic fan drive (Figure 2). Tighten the pressure inlet line to 35 ft-lbs (47 N·m). Tighten the pressure outlet line to 21 ft-lbs (29 N·m).

7. Connect the low pressure return hose to the fan drive (Figure 2).

8. Secure the hydraulic lines with the clips on the radiator fan shroud.

9. Connect the hydraulic fan control solenoid electrical connector (Figure 2).

10. Raise the vehicle on the hoist.

11. Install the two (2) lower air dam-to-radiator fan shroud push pin fasteners (Figure 1).

12. Install the front belly pan.

13. Lower the vehicle.

14. Install the air cleaner housing assembly and connect the throttle body air inlet hose.

15. Continue with Section D – Fill and Bleed Power Steering System.
D. Fill and Bleed Power Steering System:

1. Raise the vehicle’s front wheels off of the ground.

2. With the ignition off, turn the steering wheel to the left until it reaches its stop.

3. Slowly fill the power steering reservoir with Mopar Power Steering Fluid (MS-5931) (P/N 04883077) to the FULL COLD level. Leave the filler cap off of the reservoir.

4. With the engine off, rotate the steering wheel back and forth from lock-to-lock at least 20 times. All the while, the fluid level should be maintained at the FULL COLD level.

5. Start the engine. Allow the engine to idle for a few seconds and then turn the engine off. Check and adjust the fluid level.

6. Return the front wheels to the center position.

7. Lower the vehicle to the ground.

8. Connect the DRB III® (Scan Tool) to the vehicle and switch the IGNITION KEY TO “ON”.

9. Start the engine.

10. Select #1 – “DRB III Standalone” from Main Menu screen.


15. Activate the fan at 100% (full fan) operation.
D. Fill and Bleed Power Steering System (Continued)

16. Slowly rotate the steering wheel in both directions several times from lock-to-lock.

17. Turn off the engine then check and adjust the fluid level.

18. If the fluid is extremely foamy, allow the vehicle to stand for a few minutes and then repeat Steps 9-17.

19. Start the engine.

20. Using the DRB III, activate the fan at 100% (full fan) operation.

21. Raise the engine speed to 3000 RPM for a few seconds to fully engage the hydraulic fan. Return the engine to idle and deactivate the fan using the DRB III.

22. Slowly rotate the steering wheel in both directions several times from lock-to-lock. Verify that there is:
   - smooth power assist,
   - noiseless operation,
   - proper fluid level and condition,
   - no fluid leaks.

23. If all of the conditions in Step 22 are met the procedure is complete. If the fluid is extremely foamy, allow the vehicle to stand for a few minutes and then repeat Steps 9-22.

24. If the steering gear was replaced, continue with Section E – Wheel Alignment.
   - If the steering gear was not replaced, no further action is necessary. Return the vehicle to the customer.
E. Wheel Alignment:

NOTE: The following alignment procedure is only required on vehicles that have had the steering gear replaced.

1. Before beginning the wheel alignment on the vehicle, the following pre-alignment inspection must be completed.
   a. Check and adjust the tire pressure. Refer to the placard on the vehicle for pressure specification.
   b. Verify correct tire size and equal tread wear.
   c. Inspect each tire/wheel assembly for evidence of an unbalance condition.
   d. Inspect the wheels for excessive radial and/or lateral runout.
   e. Inspect the front and rear wheel hub and bearing assemblies for looseness.
   f. Inspect ball studs and linkage pivot points and the steering gear for looseness, roughness, binding or a sticking condition.
   g. Inspect all suspension components for wear.
   h. Inspect the front and rear shock absorber assemblies for leaks or signs of damage.
   i. Inspect the front and rear coil springs on the shock absorbers for signs of damage.

CAUTION: The vehicle’s suspension geometry and alignment settings change rapidly as the vehicle changes height. For this reason, it is extremely important that all suspension specifications be checked and adjusted with the vehicle at the correct design height. Alignment specifications must be checked with the vehicle at design height, the fuel tank full and fluids at the correct fill level.

NOTE: Any additional repairs discovered during the pre-alignment inspection are the vehicle owner’s responsibility.
E. Wheel Alignment (Continued)

2. Place the vehicle on an alignment machine.

   NOTE: The alignment machine being used must have the capability of performing a four-wheel alignment.

3. Check and set the design height of the vehicle using the procedure below.

   NOTE: Design height is the height that the vehicle is at when it has a full tank of fuel, all fluids are filled to their proper levels, and the vehicle is ballasted. All factory supplied equipment must be in the vehicle.

   a. Remove the belly pan from the frame.

   b. Place the adapter, Special Tool #8997, over the smaller end of one of the two Suspension Height Gages, Special Tool #6914, aligning the adapter locating pin with the notch in the gage end (Figure 13). Tighten the adapter thumb screw.

   IMPORTANT: The suspension height gage with the adapter installed on it should be used to measure the FRONT suspension height.
E. Wheel Alignment (Continued)

c. Install front and rear Suspension Height Gages (Special Tool #6914) at the base of both inner flanges of the front and rear wheels as shown in Figure 14.

d. Add 150 pounds of ballast to each seat cushion of the vehicle (300 lbs total) to lower the vehicle to the specified design height.

CAUTION: Only apply the weight to the seat cushions as described above. Do NOT over-ballast the vehicle. If vehicle is over-ballasted, the design height will be incorrect.
E. Wheel Alignment (Continued)

e. Jounce the vehicle several times, each time paying special attention to release the vehicle at the very bottom of the jounce cycle.

f. Check the distance from the bottom of each of the front frame rails to the top surface of the Suspension Height Gage (Special Tool #6914) (Figure 15) at the forward edge of the gage. The distance should be 1.69 inches ± ¼ inch (43 mm ± 6.5 mm).

g. Check the distance from the bottom of each of the rear frame rails to the top surface of the Suspension Height Gage (Special Tool #6914) (Figure 16) at the forward edge of the gage. The distance should be 2.2 inches ± ¼ inch (56 mm ± 6.5 mm).
E. Wheel Alignment (Continued)

h. If the vehicle does not meet the design height specifications, jounce the vehicle and repeat the measurements. If the vehicle still does not meet the design height specifications, you must correct the design height following the service manual procedure before continuing with the alignment. If the design height is within specifications, continue with Step 4 of this procedure.

NOTE: Vehicle design height can be affected if the rubber bushings used in the vehicle’s suspension are not tightened with the vehicle at design height. This is due to the extreme stiffness of the rubber used in the suspension component bushings.

4. Remove the Vehicle Suspension Height Gages from the vehicle. Do NOT remove the ballast from the vehicle seats.

5. Install the wheel alignment equipment onto the vehicle per alignment equipment manufacturer’s instructions.

NOTE: The vehicle is equipped with flangeless style wheels, thus any alignment equipment used must be capable of attaching to the outside edge of the wheel rim lip.

6. Set the rear static wheel toe using the following procedure.

   a. Loosen both rear tie rod jam nuts.

   b. To adjust the rear wheel toe, grasp and rotate the right and/or left toe link at the adjustment serration in the direction required to obtain the specified individual wheel toe position. Set the toe to $+0.17^\circ \pm 0.05^\circ$.

   NOTE: Positive (+) is TOE-IN; Negative (-) is TOE-OUT.

   c. Once the individual wheel toe is set to specifications, tighten the tie rod jam nut to 55 ft-lbs. (75 N-m).
E. Wheel Alignment (Continued)

7. Set the front static wheel toe using the following procedure.

   NOTE: The engine should be running during the front wheel toe setting procedure.

   a. Start the engine and turn the wheels both ways before straightening and centering the steering wheel. Center the steering wheel and retain the steering wheel position with a steering wheel clamp.

   b. Loosen both front outer tie rod end jam nuts.

   c. Remove the clamps from the front inner tie rod boots.

   d. To adjust the front wheel toe, grasp and rotate the right and/or left inner tie rod at the adjustment serration in the direction required to obtain the specified individual wheel toe position. Set the toe to $+0.07^\circ \pm 0.05^\circ$.

   NOTE: Positive (+) is TOE-IN; Negative (-) is TOE-OUT.

   e. Once the individual wheel toe is set to specifications, tighten the tie rod jam nuts to 55 ft-lbs. (75 N\-m).

   f. Straighten both front tie rod boots at the inner tie rod so that the boots are not twisted. Then install both inner tie rod boot clamps.

   g. Remove the steering wheel clamp and turn the engine off.

8. Remove the alignment equipment from the vehicle.

9. Install the belly pan.

10. Remove the vehicle from the alignment rack and return it to the customer.
Completion Reporting and Reimbursement

Claims for vehicles that have been serviced must be submitted on the DIAL System or on the DealerCONNECT Claim Entry Screen located on the Service tab. Claims submitted will be used by DaimlerChrysler to record Customer Satisfaction Notification service completions and provide dealer payments.

Use one of the following labor operation numbers and time allowances:

<table>
<thead>
<tr>
<th>Labor Operation</th>
<th>Number</th>
<th>Time Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace cooling fan module</td>
<td>07-C3-11-82</td>
<td>1.3 hours</td>
</tr>
<tr>
<td>Replace cooling fan module, steering gear, pump and cooler and set front and rear toe</td>
<td>07-C3-11-83</td>
<td>3.9 hours</td>
</tr>
</tbody>
</table>

Add the cost of the parts package(s) plus applicable dealer allowance to your claim.

NOTE: See the Warranty Administration Manual, Recall Claim Processing Section, for complete claim processing instructions.

Parts Return

Not required.

Dealer Notification

All dealers will receive a copy of this dealer notification letter by DMAIL and first class mail. Two additional copies will be sent through the DCMMS. DealerCONNECT and the MDS2 will be updated to include this notification in the near future.
Vehicle Lists, Global Recall System, VIP and Dealer Follow up

All involved vehicles have been entered into the DealerCONNECT Global Recall System (GRS) and Vehicle Information Plus (VIP) for dealer inquiry as needed. Involved dealers were also mailed a copy of their vehicle (VIN) list with the dealer notification letter.

GRS provides involved dealers with an updated VIN list of their incomplete vehicles. The owner’s name, address and phone number are listed if known. Completed vehicles are removed from GRS within several days of repair claim submission.

To use this system, click on the “Service” tab and then click on “Global Recall System.” Your dealer’s VIN list for each recall displayed can be sorted by: those vehicles that were unsold at recall launch, those with a phone number, city, zip code, or VIN sequence.

**Dealers should perform this repair on all unsold vehicles *before* retail delivery.** Dealers should also use the VIN list to follow up with all owners to schedule appointments for this repair.

*Recall VIN lists may contain confidential, restricted owner name and address information that was obtained from the Department of Motor Vehicles of various states. Use of this information is permitted for this recall only and is strictly prohibited from all other use.*

Owner Notification and Service Scheduling

All involved vehicle owners known to DaimlerChrysler are being notified of the service requirement by mail. They are requested to schedule appointments for this service with their dealers. A copy of the owner letter is attached.

Enclosed with each owner letter is an Owner Notification Form. The involved vehicle and notification are identified on the form for owner or dealer reference as needed.

Additional Information

If you have any questions or need assistance in completing this action, please contact your Service and Parts District Manager.

Customer Services Field Operations
DaimlerChrysler Corporation
CUSTOMER SATISFACTION NOTIFICATION
TO REPLACE YOUR VEHICLE’S COOLING FAN MODULE

Dear Dodge Viper Owner:

The satisfaction of our customers is very important to DaimlerChrysler. Because of this, we are requesting owners of some 2003 model year Dodge Viper SRT-10 vehicles to contact their dealer to have the following service performed.

The problem is... A check ball retainer in the cooling fan module on your Viper (identified on the enclosed form), may become dislodged. This could cause reduced cooling fan operation and result in an engine overheating condition.

What DaimlerChrysler and your dealer will do... DaimlerChrysler will repair your vehicle free of charge (parts and labor). To do this, your dealer will replace the cooling fan module. If the check ball retainer is missing from the cooling fan module, your dealer will also replace the steering gear assembly, power steering pump and power steering cooler. Cooling fan module replacement will take about 1½ hours to complete. Steering system replacement, if necessary, will require an additional three hours. However, additional time may be necessary depending on how dealer appointments are scheduled and processed.

What you must do... ➢ Simply contact your dealer right away to schedule a service appointment. Ask the dealer to hold the parts for your vehicle or to order them before your appointment.

➢ Bring the enclosed form with you to your dealer. It identifies the required service to the dealer.

If you need help... If you have questions or concerns which your dealer is unable to resolve, please contact DaimlerChrysler at 1-800-853-1403.

If you have already experienced this condition and have paid to have it repaired, you may send your original receipts and/or other adequate proof of payment to the following address for reimbursement: DaimlerChrysler, P.O. Box 610207, Port Huron, MI 48061-0207, Attention: Reimbursement.

We are sorry for any inconvenience, but we believe that this service will help to ensure your continuing satisfaction with your vehicle. Thank you for your attention to this important matter.

Customer Services Field Operations
DaimlerChrysler Corporation
C31