



NUMBER: 19-006-05

GROUP: Steering

DATE: August 4, 2005

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SUBJECT:

Steering Shudder

OVERVIEW:

This bulletin involves replacing one of the two power steering cooler hoses with a new longer power steering hose and if necessary, installing a fin packed power steering cooler.

MODELS:

- | | | |
|-------------|------|--|
| 2001 - 2005 | (RS) | Town & Country, Caravan, Voyager |
| 2001 - 2005 | (RG) | Chrysler Voyager (International Markets) |

NOTE: This bulletin applies to right hand and left hand drive vehicles equipped with a 3.3L or 3.8L engine (sales code EGA, EGM, EGH) built on or before December 8, 2004 (MDH 1208XX)

SYMPTOM/CONDITION:

A shudder (vibration) is felt inside the vehicle while turning the steering wheel at idle or during low speeds such as a parking lot maneuver. The shudder may be felt in the steering wheel, seat, and/or body.

DIAGNOSIS:

- Verify the condition:** - Perform stationary turns and/or low speed turns in drive and reverse. Perform the evaluation with the A/C in the on and off position. **Is steering shudder detected?**
 - Yes >> Go to [Step #2](#).
 - No >> Further diagnosis is needed, this bulletin does not apply.
- Inspect for the presence of a power steering finned cooler. **Is a finned cooler present?**
 - Yes >> Go to "Replace Power Steering Hose - [Step #1](#)".
 - No. >> Go to "Install Finned Cooler - [Step #1](#)".



Stick with the Specialists™

PARTS REQUIRED:

Qty.	Part No.	Description
AR	05135964AA	11/32" Hose, Bulk Power Steering Return Vehicles built on or before September 13, 2004 (MDH 0913XX) One roll will service multiple vehicles
AR	04364392	5/8" or 11/16" Convolute Tubing Vehicles built on or before September 13, 2004 (MDH 0913XX) One roll will service multiple vehicles
AR (1)	04743473AE	Line, Power Steering Return, With Cooler
AR (2 Straps)	04856501 (Package of 50 straps)	Tie Strap, Cable Tie One package will service multiple vehicles
AR	05166226AA	Fluid, Power Steering (MS9602)

INSTALL FINNED COOLER:

CAUTION: Throughout the following procedure, special care should be taken to prevent introducing contamination into the power steering system.

1. Open the hood.
2. Remove the cap from the power steering fluid reservoir.
3. Using a siphon pump/suction gun, remove as much power steering fluid as possible from the power steering fluid reservoir.
4. Remove and save the constant tension spring clamp securing the power steering return line hose to the power steering fluid reservoir.
5. Remove the rubber hose portion of the power steering return line from the power steering fluid reservoir fitting.
6. Drain the power steering fluid reservoir into an appropriate container.

NOTE: This fluid should not be reused to avoid introducing contamination from the container.

7. Raise the vehicle on an appropriate hoist.
8. Remove the fuel vapor canister.
9. Locate the bracket connecting the power steering return line cooler loop to the cradle reinforcement plate (Fig. 1).

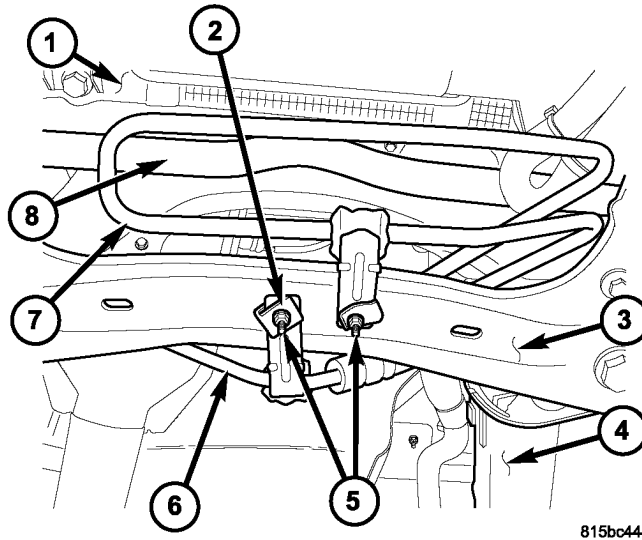


Fig. 1 POWER STEERING COOLER LOOP

- | | |
|--------------------------------|--|
| 1 - SUSPENSION CRADLE | 5 - COOLER LOOP MOUNTING FASTENERS (SAVE FOR FINNED COOLER INSTALLATION) |
| 2 - J/U NUT CLIP (DISCARD) | 6 - PRESSURE LINE |
| 3 - CRADLE REINFORCEMENT PLATE | 7 - COOLER LOOP (DISCARD) |
| 4 - FUEL VAPOR CANISTER | 8 - SWAY BAR |

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10. Remove the fasteners connecting the cooler line to the reinforcement plate. Save the fasteners for use in [Step #17](#).
 11. Locate the bracket connecting the power steering pressure line to the cradle reinforcement plate ([Fig. 1](#)).
 12. Remove the fastener connecting the bracket to the reinforcement plate. Save the fastener for use in [Step #18](#).
 13. Remove and discard the J/U nut clip on the bracket.
 14. Locate and unscrew the tube nut connecting the power steering return line to the steering gear pinion housing.

NOTE: The tube nut will remain loosely assembled to the power steering return line.

15. Drain the remaining fluid into an appropriate container and discard the loop cooler line that was removed from the vehicle.

NOTE: This fluid should not be reused to avoid introducing contamination from the container.

16. Install the new power steering return line, p/n 04743473AE. Attach the power steering return line tube nut to the steering gear pinion housing and tighten to 27.1 - 35.0 N·m (240 - 310 in. lbs.).
17. Reuse the fastener removed in [Step #10](#). Install the fastener into the left weld nut on the cooler fin pack bracket and the left hole in the cradle reinforcement plate. Tighten the fastener to 9 - 11.3 N·m (80-100 in. lbs.) ([Fig. 2](#)).

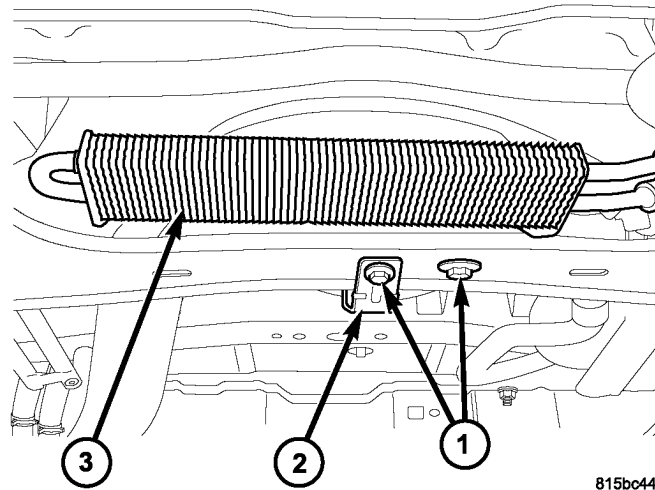


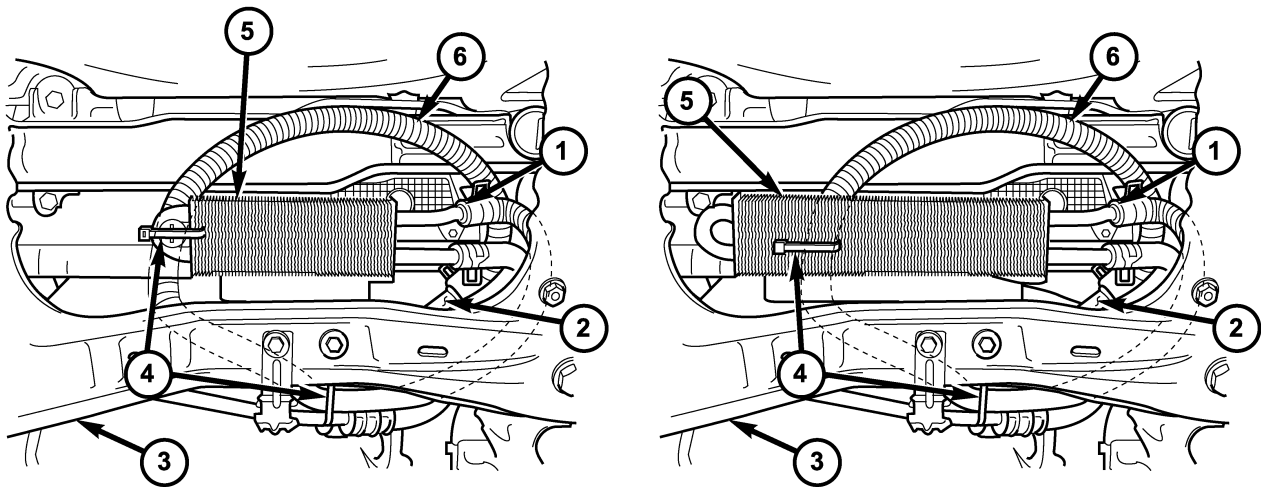
Fig. 2 POWER STEERING FINNED COOLER

- 1 - FINNED COOLER FASTENERS (INSTALLED POINTING UPWARD)
- 2 - SWING THE PRESSURE LINE CLAMP BACK INTO POSITION WITHOUT THE J/U NUT
- 3 - FINNED COOLER

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18. Line up the pressure line bracket and the right weld nut in the cooler fin pack bracket. Reuse the fastener removed in [Step #12](#). Install the fastener through the right hole in the cradle reinforcement plate, the fin pack bracket and the pressure line bracket. Tighten the fastener to 9 - 11.3 N·m (80-100 in. lbs.) ([Fig. 2](#)).
 19. Install the fuel vapor canister.
 20. Lower the vehicle.
 21. Install the constant tension spring clamp removed in [Step #4](#) onto the rubber hose on the power steering return line. Slide the clamp so that it is 3 inches from the end of the rubber hose.
 22. Push the end of the rubber hose portion of the power steering return line onto the power steering fluid reservoir suction port. Secure the hose by sliding the constant spring tension clamp installed on the hose in the last step, to within 6 mm (0.25 in.) of the end of the rubber hose. **Be sure the hose clamp is installed past the bead on fluid reservoir fitting.**
 23. Check the vehicle production date. **Was the vehicle built on or before September 13, 2004 (MDH 091344XX)?**
 - a. Yes >> Go to "Replace Power Steering Hose - [Step #1](#)".
 - b. No >> Go to "Steering/Pump - Standard Procedure - [Step #1](#)".

REPLACE POWER STEERING HOSE:

1. Cut 850 mm (33.5 in.) of power steering hose (p/n 05135964AA) or equivalent.
2. Cut 790 mm (31 in.) of 15.9mm (5/8 in.) or 17.5 mm (11/16 in.) convolute tubing. Place the convolute tubing around the power steering hose.
3. Open hood and remove the power steering reservoir cap.
4. Raise the vehicle on an appropriate hoist.
5. Locate the power steering cooler attached to the crossmember support. Remove the forward (closest to front of vehicle) hose from the cooler and tube. Drain the power steering fluid in an appropriate container.
6. Remove the two tension clamps from the removed hose and install on the new power steering return hose.
7. Install the new hose and tension clamp onto the power steering cooler.
8. Wrap the hose clockwise around the perimeter and on top of the power steering cooler as shown in (Fig. 3). Install the hose and tension clamp to the power steering return tube.



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Fig. 3 HOSE ROUTING - STANDARD COOLER ON LEFT, H/D COOLER ON RIGHT

1 - COOLER RETURN TUBE (CLOSEST TO FRONT OF VEHICLE)

2 - RETURN TUBE TO RESERVOIR

3 - CROSSMEMBER SUPPORT

4 - TIE STRAP LOCATIONS

5 - POWER STEERING COOLER

6 - POWER STEERING COOLER HOSE (ROUTE CLOCKWISE)

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9. Use two tie straps to strap the return hose to the power steering cooler and pressure steering hose shown in (Fig. 3).
 10. Lower vehicle and open hood.
 11. Proceed to "Steering/Pump - Standard Procedure".

STEERING/PUMP - STANDARD PROCEDURE

WARNING:FLUID LEVEL SHOULD BE CHECKED AND ADJUSTED WITH ENGINE OFF TO PREVENT INJURY FROM MOVING ENGINE COMPONENTS.

CAUTION: Use only Mopar® ATF+4 Automatic Transmission Fluid (MS-9602) in power steering system. Use of other Mopar® power steering fluids (MS5931 and MS9933) should be avoided to ensure peak performance of the power steering system under all operating conditions. Do not overfill.

Read the fluid level through the side of the power steering fluid reservoir. The fluid level should be within “**FILL RANGE**” when the fluid is at a temperature of approximately 21°C to 27°C (70°F to 80°F).

1. Wipe the filler cap and area clean, then remove the cap.
2. Fill the fluid reservoir to the proper level and let the fluid settle for at least two (2) minutes.
3. Start the engine and let run for a few seconds, then turn the engine off.
4. Add fluid if necessary. Repeat the above steps until the fluid level remains constant after running the engine.
5. Raise the front wheels off the ground.
6. Start the engine.
7. Slowly turn the steering wheel right and left, lightly contacting the wheel stops.
8. Add fluid if necessary.
9. Lower the vehicle, then turn the steering wheel slowly from lock-to-lock.
10. Stop the engine. Check the fluid level and refill as required.
11. If the fluid is extremely foamy, allow the vehicle to stabilize a few minutes, then repeat the above procedure.

POLICY:

Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No:	Description	Amount
19-50-16-90	Hose, Power Steering Return - Replace	0.5 Hrs.
19-50-16-91	Tube/Cooler, Power Steering Return - Replace	0.6 Hrs.
19-50-16-92	Tube/Cooler, Power Steering Return-Replace - And - Hose, Power Steering Return-Replace	0.9 Hrs.

FAILURE CODE:

P8	New Part
68	Noisy