

BLEEDING THE POWER STEERING

Aerated fluid will result in noise from the power steering pump. The system should be bled any time a power steering component has been replaced, a fluid line disconnected, or for moaning and groaning noises. To bleed the power steering system, most technicians just fill the reservoir and turn the wheel from lock to lock. This is not the way GM recommends bleeding their system. Prior to bleeding the system, perform a visual inspection to be certain the hoses are not touching any part of the frame or body which can promote a noise. Make certain all hoses are tight, as a loose connection can allow air to enter the system even though fluid will not leak from the connection.

GM's Recommended Bleeding Procedure:

- 1) Ignition switch off.
- 2) Turn steering wheel full left.
- 3) Fill fluid reservoir to Full Cold level. Leave cap off.
- 4) Raise front wheels off ground.
- 5) With assistant checking fluid level and condition, turn steering wheel lock to lock at least 20 times. Engine remains off.
 - a) On systems with long return lines or fluid coolers, turn steering wheel lock to lock at least 40 times.
 - b) Trapped air may cause fluid to overflow. Thoroughly clean any spilled fluid to allow for leak check.
 - c) Keep fluid level at Full Cold.
- 6) While turning wheel, check fluid constantly.
 - a) No bubbles are allowed.
 - b) If bubbles appear, recheck connections. Repeat step 5.
- 7) Start engine. With engine idling, maintain fluid level. Reinstall cap.
- 8) Return wheels to center position. Lower front wheels to ground.
- 9) Keep engine running for two minutes.
- 10) Turn steering wheel in both directions.

Verify:

- a) Smooth power assist
 - b) Noiseless operation
 - c) Proper fluid level
 - d) No leaks
 - e) No bubbles, foam or fluid discoloration
- 11) If all conditions apply, procedure is complete.
 - 12) If any problems remain, see "Special Conditions."

Special Conditions:

- 1) **Foam or bubbles in fluid:** Fluid must be completely free of bubbles. In step 5, be alert to periodic bubbles that could indicate a loose connection or leaky O-ring seal.
- 2) **Discolored fluid:** Fluid which is milky or tan in color is an indication of aerated fluid. Switch ignition off. Wait two minutes and recheck hose connections. Repeat steps 7-10. If condition still exists, replace O-ring seals and clamps. Fill system and repeat bleed procedure.
- 3) **Pump whine or groan:** With the engine running, recheck hoses for possible contact with frame, body panels or engine. If no contact is found, allow fluid to cool down and repressurize system.

If noise persists, remove and replace the power steering pump. Repeat the bleeding procedure following the pump replacement.

Following the procedures illustrated can save you much frustration and your customer money, plus you fix the problem the first time around. This keeps the customer happy and coming back for more service. A happy customer tells his friends about your shop and that keeps the bays filled.