

INSTRUCTION SHEET

FOR EFFECTIVE REPAIR, USE ALL PARTS IN KIT REGARDLESS OF ORIGINAL CONDITION


Bleeding Air from Power Steering Systems for Use With Special Tool J 43485

Read instructions carefully before proceeding.

26079700


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Before bleeding: Inspect steering system. Check, and correct as needed:



Hoses must not touch any other part of vehicle.

• Steering system noise could be caused by hose touching frame, body, or engine.



All hose connections must be tight.


• Loose connections might not leak fluid but could allow air into system.


When to bleed:
After any component replacement
After disconnecting fluid line
in case of steering system noise


Why bleed?
To ensure proper system operation
To stop steering system noise


Power Steering Fluid
Use clean, new power steering fluid type only. See vehicle owner's manual for manufacturer's specifications.


How to bleed:


1  **NOTE:** Maintain the fluid level throughout the bleed procedure. Fill fluid reservoir to "FULL COLD" level. Leave cap off.


6  Start the engine and idle. Turn steering wheel 180° - 360° in both directions 5 times. Do not turn to lock.


2  Attach J 43485 to a Mity Vac or equivalent. Place J 43485 on/ in pump reservoir filler neck. Apply a vacuum of 20 in. Hg. **MAXIMUM.**


7  Switch the ignition off. Verify the fluid level.


3  Wait five minutes. Typical vacuum drop is 2 - 3 in. Hg. Verify the fluid level. If the vacuum does not remain steady, see special conditions.

8  Attach J 43485 to a Mity Vac or equivalent. Place J 43485 on/ in pump reservoir filler neck. Apply a vacuum of 20 in. Hg. **MAXIMUM.**


4  Reinstall cap. Start the engine and idle.

9  Wait five minutes. Verify the fluid level.


5  Turn the engine off. Verify the fluid level. If the fluid level drops, add fluid. Repeat steps 4 - 5 until the fluid level stabilizes.

10  Install cap. Bleed procedure complete.

Special Conditions:

1  If vacuum continues to drop remove pressure and return hose from pump. Install plugs supplied with J 43485 into the pressure and return port. Apply a vacuum of 20 in. Hg. **MAXIMUM** (see step 2). If vacuum drops again, repair or replace pump. If vacuum holds steady, another part of the steering system is at fault.

Fluid



- Foam or bubbles in fluid
Fluid must be completely free of bubbles.
- Discolored fluid
(Fluid must be a light tan color and clear not milky)

If condition still exists, replace and check a possible cause:

- Return hose clamps
- Return hose O-ring
- Pressure hose O-rings
- Gear cylinder line O-rings
- Reservoir to pump O-ring


After repair is complete, repeat steps 1 - 9.

2 If noise evaluation is required, follow this procedure:

Drive vehicle approximately 16 kilometers (10 miles) to warm system to operating temperature.

Verify:

- Smooth power assist
- Quiet operation
- Proper fluid level
- No system leaks
- Proper fluid condition
No bubbles, no foam, no discoloration



Evaluate vehicle on a smooth flat surface.

INSTRUCTION SHEET

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Before bleeding: Inspect steering system. Check, and correct as needed:



Hoses must not touch any other part of vehicle.

- Steering system noise could be caused by hose touching frame, body, or engine.



All hose connections must be tight.


- Loose connections might not leak but could allow air into system.


When to bleed:
 After any component replacement
 After disconnecting fluid line
 In case of steering system noise


Power Steering Fluid
 Use clean, new power steering fluid type only. See vehicle owner's manual for manufacturer's specifications.


Why bleed?
 To prevent pump damage
 To ensure proper system operation
 To stop steering system noise


How to bleed:


1  Switch ignition off.


2  Raise front wheels off ground.


3  Turn steering wheel full left.

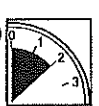
4  Fill fluid reservoir to "FULL COLD" level. Leave cap off.


5  With assistant checking fluid level and condition, turn steering wheel lock-to-lock at least 20 times. Engine remains off.

6  While turning wheel, check fluid constantly.

7  Start engine. With engine idling, maintain fluid level. Reinstall cap.

8  Return wheels to center. Lower front wheels to ground.

9  Keep engine running for two minutes.

10  Turn steering wheel in both directions.

Special Conditions:

Fluid

- 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 in either the return hose or pressure hose.
- Discolored fluid (milky, opaque, or light tan color)

Switch ignition off. Wait two minutes. Recheck hose connections. Repeat steps 7-10. If condition still exists, replace and check a possible cause:

- Return hose clamps
- Return hose O-ring
- Pressure hose O-rings
- Gear cylinder line O-rings

Fill system and repeat bleed procedure for each possible cause. Repeat steps 7-10 to verify whether noise has been eliminated.

Noise

- Pump whine or groan

With engine running, recheck hoses for possible contact with frame body or engine. If no contact is found, follow either method below to cool down fluid and repressurize system.

Method 1:
 Normal Cool Down

Switch engine off. Wait for system to cool. Install reservoir cap.

Method 2:
 Partial Fluid Replacement

Switch engine off. Use a suction device to remove fluid from reservoir. Refill with cool, clean fluid. Install reservoir cap.

After either method of cooling, start engine and allow engine to come up to operating temperature. If noise persists, remove and replace power steering pump. Repeat bleed procedure following pump replacement.

Verify:

- Smooth power assist
- Noiseless operation
- Proper fluid level
- No system leaks
- Proper fluid condition

- No bubbles, no foam, no discoloration

11 If all proper conditions apply, procedure is complete.

12 If any problem remains, see "Special Conditions."

- On systems with long return lines or fluid coolers, turn steering wheel lock-to-lock at least 40 times.
- Trapped air may cause fluid to overflow. Thoroughly clean any spilled fluid to allow for leak check.
- Keep fluid level at "FULL COLD."
- No bubbles are allowed.
- For any sign of bubbles, recheck connections. Repeat step 5.

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