

*A steering system is an important safety component in a vehicle and must be properly maintained. With this in mind, a steering system must be flushed **EVERY TIME** a component of the system gets replaced, no matter if the components are new or remanufactured.*

ZF Recommended Steering Systems Flushing Procedure

Equipment Needed:

- Safety Glasses
- Empty Bottle for contaminated oil
- Screwdriver
- Manufacturers' Recommended Power Steering Fluid

- 1- Clean the outside of the oil reservoir and the surrounding area to ensure no dirt or foreign particles get into the oil reservoir.
- 2- With a screwdriver, loosen the clamp holding the return line connection between the steering gear and the oil reservoir. Disconnect the oil line from the oil reservoir.
- 3- Insert the end of the return line into an empty bottle and cap the oil reservoir return connection with a plug.
- 4- While wearing safety glasses, start the engine and fill the oil reservoir with fresh power steering fluid while turning the steering from side to side to purge all oil out of the system. (Use recommended fresh fluid to flush the system.)
- 5- Turn off the engine and remove oil reservoir from bracket. Flush out debris or particles from reservoir into container. Check oil contamination for metal or foreign particles by filtering the contaminated oil with a coffee filter.
 - Fine metal shaving means a normal wear and tear of the power steering pump.
 - If metal chips are present, replace power steering pump.
 - If black rubber particles are present, the pressure/return line inner lining is disintegrated. Replace the pressure/return line.
- 6- Check the oil reservoir condition for cracks. If the oil reservoir is cracked, replace the oil reservoir. If reservoir has no cracks, just replace the oil filter. **If filter is integrated inside the oil reservoir and cannot be removed for oil filter change, replace entire reservoir.**
- 7- Check the condition of the pressure/return oil line for cracks, soft or sweat spots. If any of these conditions exist, replace lines.
- 8- Check all banjo bolt connections for blockage. If blocked, clear connections by appropriate method (air hose, fluid, etc.)
- 9- Reconnect oil reservoir into bracket.
- 10- Connect return line to oil reservoir.
- 11- Top off oil reservoir with manufacturers' recommended fluid.
- 12- Start engine and turn steering from lock to lock to purge air out of the system.

Caution:
Do not hold steering gear from lock to lock for more than 30 second. This could cause the steering system to overheat.
- 12- Check for oil leakage and top off power steering fluid to recommended level.

*The smallest particle can cause the system to leak or even fail. A clean system is a **REQUIREMENT** for acceptable service life.*

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