

# POWER STEERING FILLING/BLEEDING INSTRUCTIONS

## IMPORTANT INFORMATION ABOUT YOUR POWER STEERING PUMP

### Bleeding Air from your Power Steering System

When bleeding air from a power steering system, please follow these bleeding instructions only. We have found the following method is the only proper way to bleed a system.

**\*\* IMPORTANT \*\*** Do not start the engine until the power steering system is fully bled. If using a Hydro Boost system, follow the Hydro Boost bleeding procedures from the original manufacturer.

**\*\*CAUTION \*\*** Failure to read and follow these instructions **THOROUGHLY AND COMPLETELY** will void any warranty and possibly cause severe damage to your power steering components.

**Use only clear, name brand, premium, racing or synthetic power steering fluid with anti-foaming characteristics such as Valvoline, Royal Purple or Red Line. DO NOT use brake or transmission fluid! These are NOT an acceptable substitute! These fluids do not contain the same friction inhibitors/additives and tend to breakdown and overheat. Use of fluids other than power steering fluid will void the warranty.**

**NOTE: Eddie Motorsports Billet Aluminum Power Steering Reservoirs** are not recommended for use in high usage or high performance applications or with Hydroboost systems. The reservoirs should also be used in conjunction with a high quality power steering fluid cooler. When using a **Remote Power Steering Reservoir**, make sure that it is mounted so that the fittings at the bottom of the tank are higher than the power steering pump.

### Before Bleeding, carefully inspect the steering system.

- Hoses must not touch any other part of vehicle. Steering system noise could be caused by the hose touching the frame, body, or engine.
- All hose connections must be tight. Loose connections might not leak but could allow air into the system. Do not over tighten O-ring hoses as the O-ring might be crushed. Check flare seat type connections for exact fit.

### How to Bleed

**\*\* IMPORTANT \*\*** *Do not start the engine until the system is fully bled. Doing so may cause damage to the power steering components. Any air in the system can cause metal to metal contact and damage.*

- 1.) Raise the front wheels off the ground, or remove the pitman arm or tie rod.
- 2.) Turn the steering wheel fully to the left.
- 3.) Fill fluid reservoir to “full cold” level and leave the cap off.
- 4.) With someone checking the fluid level and condition, turn the steering wheel slowly and smoothly lock to lock until the fluid level drops in the pump reservoir. **Do not turn the steering wheel fast as this will cause the fluid to overflow the reservoir.**

If fluid level has not dropped, no fluid has moved through the system. This normally indicates a large air bubble in the reservoir or pump. Until this bubble passes, no fluid will circulate through the system.

On some systems, especially those with coolers, winches, or Rock Ram assist, you may need to cycle the system in excess of 40 times.

Trapped air may also cause fluid to overflow. Thoroughly clean any spilled fluid to allow for leak check.

- 5.) Check fluid constantly to ensure proper level and that no bubbles exist. If you see any signs of bubbles, recheck all connections then repeat the steps above. Fluid level should be steady (Rock Ram’s level will vary slightly).
- 6.) Once the fluid level is steady, disable the engine from starting and crank the engine for several revolutions. If fluid level drops, there is compressed air trapped in the system. Repeat the above steps until fluid level is stable. If fluid foams while cranking, wait 10 minutes or more until dispersed air has time to accumulate and purge through the reservoir.
- 7.) Continue the above steps until fluid level remains constant and no air bubbles are visible.
- 8.) Reinstall reservoir cap and return wheels to center.
- 9.) Lower the front wheels to the ground or reinstall pitman arm or tie rod if removed in Step 2.
- 10.) Run the engine for two minutes, turning the steering wheel in both directions. **DO NOT HOLD THE STEERING WHEEL AGAINST THE STOPS!**

11.) The following conditions should now exist:

- Smooth power assist • Noiseless operation • Proper fluid level • No system leaks • Proper fluid condition
- No bubbles, foam, or discoloration

12.) If all of these conditions are satisfied, the bleeding procedure is complete.

13.) If any problem exists, turn off the engine and see Special Conditions below.

### **Troubleshooting:**

The following symptoms indicate that there is still air in the system:

- Foam or bubbles in fluid (fluid must be completely free of bubbles).
- Power steering fluid level in the reservoir rises when the engine is turned off.
- Periodic bubbles in the power steering fluid.
- Discolored fluid (milky, opaque, or light tan color).
- Whining or groaning noise originating from the power steering pump

### **Eliminating Air in the Power Steering System**

Follow the steps below to eliminate air in the power steering system.

1.) Turn ignition off and wait thirty minutes. Recheck hose connections. Repeat start up procedures.

If problem still exists, replace or check for possible causes including:

- Return hose clamps
- Return hose O-ring or flare seat
- Pressure hose O-ring or flare seat
- All other connections

2.) Eliminating Noise in the Power Steering System

If you are sure that all of the air has been eliminated from the system and the power steering pump is still noisy, do the following:

- 1.) Check belts for slippage.
- 2.) Mark the power steering pulley and make sure that it is not slipping on the shaft.
- 3.) With the engine running, recheck hoses for possible contact with frame, body, or engine. If no contact is found, allow the fluid to cool and re-pressurize the system.
- 4.) Once the fluid has cooled, start the engine to allow fluid to come up to operating temperature and recheck.