

TROUBLESHOOTING GUIDE

STEERING ACTION

| PROBLEM | POSSIBLE CAUSE | |
|----------------------------|---|---|
| SHUDDER | <ul style="list-style-type: none"> Excessive engine vibration PS Hose connected to wrong fluid port | <ul style="list-style-type: none"> Loose or worn rack mount |
| HARD STEERING | <ul style="list-style-type: none"> Loose pump belt Improper tire pressure Low or incorrect fluid Bent or seized front end components Low pump pressure | <ul style="list-style-type: none"> Kinked or damaged fluid lines Sticky pump or rack valve Contamination in system Speed sensor problem |
| REDUCED ASSIST | <ul style="list-style-type: none"> Sticky pump valve Speed sensor problems Air in system | <ul style="list-style-type: none"> Leaking hose connection Leaking rack |
| SURGING OR JERKING | <ul style="list-style-type: none"> Low fluid Air in system | <ul style="list-style-type: none"> Leaking hose connection |
| LOOSE FEEL STEERING | <ul style="list-style-type: none"> Loose wheel bearing Worn steering linkage components Loose or worn rack mounts | <ul style="list-style-type: none"> Improperly adjusted steering gear Damaged steering coupler |
| POOR RETURNABILITY | <ul style="list-style-type: none"> Overtightened shoe adjustment Sticking or plugged pump relief valve | <ul style="list-style-type: none"> Speed sensor problems Bent or seized front end components |

VISIBLE PROBLEMS

| PROBLEM | POSSIBLE CAUSE | |
|-------------------------------|--|---|
| FOAMING OR MILKY FLUID | <ul style="list-style-type: none"> Air in system Loose hose connection fluid port | <ul style="list-style-type: none"> Improper bleeding |
| EXTERNAL LEAKAGE | <ul style="list-style-type: none"> Contamination in system Improper torque or damaged hose fittings Cracks in hoses or splits in fittings | <ul style="list-style-type: none"> Overfilled pump reservoir Broken bellows |

NOISE PROBLEMS

| PROBLEM | POSSIBLE CAUSE | |
|-------------------------|--|--|
| CHIRPS OR SQUEAL | <ul style="list-style-type: none"> Loose belt Pulley misaligned | <ul style="list-style-type: none"> Bearing on serpentine belt tensioner |
| GROAN | <ul style="list-style-type: none"> Low or incorrect fluid Hoses contacting other chassis components | <ul style="list-style-type: none"> Loose pump mount |
| GROWL | <ul style="list-style-type: none"> Excessive back pressure Pump failing / leakage | <ul style="list-style-type: none"> Bearing on serpentine belt tensioner |
| RATTLE | <ul style="list-style-type: none"> Loose pump pulley Failing pump | |
| WHINING | <ul style="list-style-type: none"> Overtightened shoe adjustment Sticking or plugged pump relief valve | <ul style="list-style-type: none"> Speed sensor problems Bent or seized front end components |

TECHNICIAN CHECKLIST

PRE-INSTALLATION CHECKLIST

- 1. CHECK VEHICLE SUSPENSION COMPONENTS FOR DAMAGE OR WEAR**
Worn or damaged suspension components can cause premature system malfunction and decrease the level of steering performance. Inspection should include, but not be limited to, the following: outer/inner tie rods, ball joints, control arms, shocks / struts, irregular tire wear, engine mounts, a-frame and rack mounts.
- 2. INSPECT FLUID**
To check the fluid, put a sample in a white Styrofoam cup and notice the color, smell and check for reflection off of metal particles. Good fluid can be clear, amber, pink or red. Dark and/or burnt-smelling fluid indicates contamination and requires complete replacement. To check for metal particles, shine a light on the fluid in the cup and check for reflection. Reflection indicates the presence of metal particles, indicating a potentially failing pump.
- 3. INSPECT THE RESERVOIR SCREEN**
The reservoir screen could be clogged which will starve the PS pump resulting in a noisy pump and potentially damaging the internal components. If clogged, the reservoir should be thoroughly cleaned or replaced.
- 4. INSPECT ALL HOSES**
If the hoses feel stiff or spongy, this is an indicator that they are potentially deteriorating and could need replacing. Any leaking or cracked hoses should be replaced immediately.
- 5. DO YOU HAVE THE CORRECT FLUIDS?**
Always use the manufacturer's recommended fluid for flushing and refilling the PS pump system. Using OE recommended fluid ensures that the complete system will function properly. Incorrect fluids can lead to premature system malfunction and decreased levels of performance.

PRE-INSTALLATION CHECKLIST

- 6. FLUSH THE SYSTEM**
Refer to the **AAE Power Steering Service Tips** for flushing instructions. Flushing the system prior to installation of a new pump, hoses, or rack, removes contamination that could lead to immediate system malfunction and premature component failure.
- 7. AFTER INSTALLATION, CHECK FITTINGS FOR LEAKS**
Check to insure that all o-rings / crush washers are replaced throughout the whole system. Just because fluid leaks are not present does not mean that air is not being pulled into the power steering system. This will cause shuddering, noise or problems with bleeding the system.
- 8. BLEED AIR FROM SYSTEM**
Refer to the **AAE Power Steering Service Tips** for proper instructions. Air in the system can lead to noise, intermittent power assist function, and shuddering.



WE'RE HERE TO HELP!

- ✓DIAGNOSTIC SUPPORT
- ✓INSTALLATION
- ✓TROUBLESHOOTING

AAE TECH SUPPORT
HOTLINE
1-800-654-7565

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