

## POWER STEERING SYSTEM

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There is some noise in all power steering systems. One of the most common is a hissing sound evident at a standstill parking. Or when the steering wheel is at the end of it's travel. Hiss is a high frequency noise similar to that of a water tap being closed slowly. The noise is present in all valves that have a high velocity fluid passing through an orifice. There is no relationship between this noise and steering performance.

#### STEERING NOISE (part 1)

CONDITION	POSSIBLE CAUSES	CORRECTION
OBJECTIONAL HISS OR WHISTLE	1. Steering intermediate shaft to dash panel seal. 2. Noisy valve in power steering gear.	1. Check and repair seal at dash panel. 2. Replace steering gear.

#### STEERING NOISE (part 2)

CONDITION	POSSIBLE CAUSES	CORRECTION
RATTLE OR CLUNK	1. Gear mounting bolts loose. 2. Loose or damaged suspension components. 3. Internal gear noise. 4. Pressure hose in contact with other components. 5. Loose or damaged intermediate shaft or column.	1. Tighten bolts to specification. 2. Inspect and repair suspension. 3. Replace steering gear. 4. Reposition hose. 5. Inspect and repair or replace.
CHIRP OR SQUEAL	1. Loose belt.	1. Adjust or replace.
WHINE OR GROWL	1. Low fluid level. 2. Pressure hose in contact with other components. 3. Internal pump noise. 4. Air in fluid	1. Fill to proper level. 2. Reposition hose. 3. Replace pump. 4. Check for leaks, Evacuate air from P/S system.
SUCKING AIR SOUND	1. Loose return line clamp. 2. O-ring missing or damaged on hose fitting. 3. Low fluid level. 4. Air leak between pump and reservoir. 5. Reservoir cap not installed correctly.	1. Replace clamp. 2. Replace o-ring. 3. Fill to proper level. 4. Repair as necessary. 5. Install reservoir cap correctly.
SCRUBBING OR KNOCKING	1. Wrong tire size.	1. Verify tire size.

#### BINDING AND STICKING

CONDITION	POSSIBLE CAUSE	CORRECTION
DIFFICULT TO TURN WHEEL STICKS OR BINDS	<ol style="list-style-type: none"> <li>1. Low fluid level.</li> <li>2. Tire pressure.</li> <li>3. Steering components (ball joints/tie rod ends).</li> <li>4. Loose belt.</li> <li>5. Low pump pressure.</li> <li>6. Column shaft coupler binding.</li> <li>7. Steering gear worn.</li> <li>8. Pump seized / Stuck valve</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill to proper level.</li> <li>2. Adjust tire pressure.</li> <li>3. Inspect and repair as necessary.</li> <li>4. Adjust or replace.</li> <li>5. Pressure test and replace if necessary.</li> <li>6. Replace coupler.</li> <li>7. Replace gear.</li> <li>8. Replace pump.</li> </ol>

#### INSUFFICIENT ASST OR POOR RETURN TO CENTER

CONDITION	POSSIBLE CAUSE	CORRECTION
HARD TURNING OR MOMENTARY INCREASE IN TURNING EFFORT	<ol style="list-style-type: none"> <li>1. Tire pressure.</li> <li>2. Low fluid level.</li> <li>3. Loose belt.</li> <li>4. Low pump pressure.</li> <li>5. Internal gear leak.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust tire pressure.</li> <li>2. Fill to proper level.</li> <li>3. Adjust or replace.</li> <li>4. Pressure test and repair as necessary.</li> <li>5. Replace gear.</li> </ol>
STEERING WHEEL DOES NOT WANT TO RETURN TO CENTER POSITION	<ol style="list-style-type: none"> <li>1. Tire pressure.</li> <li>2. Wheel alignment.</li> <li>3. Lack of lubrication.</li> <li>4. High friction in steering gear.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust tire pressure.</li> <li>2. Align front end.</li> <li>3. Inspect and lubricate suspension components.</li> <li>4. Replace gear.</li> </ol>

#### LOOSE STEERING AND VEHICLE LEAD

CONDITION	POSSIBLE CAUSE	CORRECTION
EXCESSIVE PLAY IN STEERING WHEEL	<ol style="list-style-type: none"> <li>1. Worn or loose suspension or steering components.</li> <li>2. Worn or loose wheel bearings.</li> <li>3. Steering gear mounting.</li> <li>4. Gear out of adjustment.</li> <li>5. Worn or loose steering coupler.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect and repair as necessary.</li> <li>2. Inspect and repair or adjust bearings.</li> <li>3. Tighten gear mounting bolts to specification.</li> <li>4. Replace gear.</li> <li>5. Inspect and replace as necessary.</li> </ol>
VEHICLE PULLS OR LEADS TO ONE SIDE.	<ol style="list-style-type: none"> <li>1. Tire Pressure.</li> <li>2. Radial tire lead.</li> <li>3. Brakes dragging.</li> <li>4. Wheel alignment.</li> <li>5. Steering gear valve bias.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust tire pressure.</li> <li>2. Rotate tires.</li> <li>3. Repair as necessary.</li> <li>4. Align front end.</li> <li>5. Replace steering gear.</li> </ol>