



Know the Difference— between normal and abnormal functioning of your vehicle.

Normal noises

- A hissing noise happens every time the steering wheel turns.
- A fluid noise happens during every full turn.
- A noise occurs every time the system relief valve operates.
- Some types of steering pumps emit a pump 'growl'.

Abnormal noises.

- Loose Belts. Belt-driven steering pumps give off squealing noise. Tighten belts.
- A clicking noise sounds during turns or change of direction. Some part may be loose and need to be tightened or replaced.
- There is a change in the 'normal' noise of the steering pump.
- Air may have entered the system or fluid is low.
- Valve may be faulty or pump is wearing out.
- Hoses may be kinked or plugged.
- Filter may be plugged.

Drift or Wander

- Incorrect or unequal tire pressure—side to side.
- Steering wheel to road wheel linkage components may be loose or worn.
- Wheel bearings may be improperly adjusted or worn.
- Front end needs realignment.
- Rear end needs realignment.
- Fifth wheel or trailer plate may be dry or have a poor finish.
- Steering gear mounting bolts may be loose on frame.
- Pitman arm is loose on the sector shaft.
- Steering gear may be improperly adjusted or worn out.
- Loose rear axle assemblies or trailer bogies.
- Radial tires on vehicle designed to use biased ply tires. (1972–earlier)
- Brakes are dragging.
- Frame is bent.
- Shocks or springs are faulty.

No Recovery

- Tire pressure is low.
- Front end components are binding. (Must be checked with weight on front end)
- Front end alignment is incorrect.
- Kingpins on front axle are tight. (Must be checked with weight on front end)
- Fifth wheel or trailer plate may be dry or have a poor finish
- Steering column is binding
- Steering pump has insufficient flow.
- Steering gear is improperly adjusted.



Shimmy

- Tires are unevenly or badly worn.
- Tires or wheels are improperly mounted.
- Wheel bearings are improperly adjusted or worn.
- Steering linkage components are loose or worn.
- Wheels or brake drums are out of balance.
- Front end alignment is incorrect.
- Hydraulic system has air in it.
- Steering gear has 'free' play.
- Gearbox may be improperly adjusted.

External Oil Leaks

- Check all fittings, hoses, pump or gear. (Leak location may be difficult to find because oil may flow away from source to lowest point.)
- Vent plug leak at side cover-failure of sector shaft oil seal inside side cover.

Darting or Oversteering

- Fifth wheel or trailer plate may be dry or have a poor finish.
- Front end components are binding or loose.
- Steering column is binding.
- Steering gear is improperly adjusted.
- Steering gear control valve sleeve is sticking.
- Rear axle mounts may be faulty. (Rear steer)

Increased Steering Effort in One Direction

- Tire pressure is unequal.
- Vehicle is overloaded.
- Hydraulic system has inadequate pressure.
- Gear Box has excessive internal leakage in direction of turn.
- Steering gear valve is not properly adjusted.
- Control valve is not properly adjusted.

Increased Steering Effort in Both Directions

- Tire pressure is low.
- Vehicle is overloaded.
- Hydraulic fluid level is low.
- Hydraulic fluid is incorrect type.
- Steering pump has low pressure or flow.
- Steering system components are binding.
- Return line has some restriction or too small a diameter.
- Tires are oversized. (Check against manufacturer's specifications.)
- Steering pump drive belt is loose.



Excessive Heat (150°F/65.5°C)

- Steering pump has excessive flow.
- Vehicle is overloaded.
- Replacement hose or line is undersized.
- Hose or line restricted—kink, severe bend, internal blockage.
- Restricted re-centering of gear—caused by column bind or side load on input shaft.
- Poppets are not adjusted properly
- Vehicle operated in stationary position for prolonged periods of time.
- Steering system components are binding.
- Return line has some restriction or too small a diameter.
- There is excessive internal leakage.
- Tires are oversized. (Check against manufacturer's specifications.)
- Steering pump drive belt is loose.
- Front end needs lubrication.
- Front end is improperly aligned.
- There is air in hydraulic system.

Excessive Play at the Steering Wheel

- Steering wheel is loose on the shaft.
- A loose connection exists between steering gear, intermediate column, and steering column.
- Steering gear is loose on the frame.
- Pitman arm is loose on the sector shaft.
- Steering linkage components are loose or worn.
- Steering gear is improperly adjusted or defective.
- Steering pump has low pressure.