

# Steering

## STANDARD STEERING COLUMN TROUBLE SHOOTING

CONDITION	POSSIBLE CAUSE	CORRECTION
<b>Noise in Column</b>	Coupling pulled apart Column not correctly aligned Broken lower joint Horn contact ring not lubricated Bearings not lubricated Bearing worn or broken Shaft snap ring not properly seated Plastic spherical joint not lubricated Shroud or housing loose Lock plate retaining ring not seated Loose sight shield	See STEERING COLUMNS See STEERING COLUMNS Replace joint See Removal in STEERING WHEEL See STEERING COLUMNS Replace bearing and lubricate Reseat or replace snap ring See STEERING COLUMNS Tighten holding screws See STEERING COLUMNS Tighten holding screws
<b>High Steering Shaft Effort</b>	Column assembly misaligned Improperly installed dust shield Damaged upper or lower bearing Tight steering universal joint	See STEERING COLUMNS Adjust or replace Replace bearings See STEERING COLUMNS
<b>High Shift Effort</b>	Column is out of alignment Improperly installed dust shield Seals or bearings not lubricated Ignition switch screws too long Neutral switch screws too long Mounting bracket screws too long Burrs on shift tube Lower bowl bearing assembled wrong Shift tube bent or broken Improper adjustment of shift levers	See STEERING COLUMNS Adjust or replace See STEERING COLUMNS Replace with new shorter screws Replace with new shorter screws Replace with new shorter screws Remove burrs or replace tube See STEERING COLUMNS Replace as necessary See STEERING COLUMNS
<b>Improper Trans. Shifting</b>	Sheared shift tube joint Sheared lower shaft lever weld joint Improper shift lever adjustment Improper gate plate adjustment	Replace as necessary Replace as necessary See STEERING COLUMNS See STEERING COLUMNS
<b>Excess Play in Column</b>	Instrument panel bracket bolts loose Broken weld nut on jacket Instrument bracket capsule sheared Column bracket/jacket bolts loose	Tighten bolts and check bracket See STEERING COLUMNS See STEERING COLUMNS Tighten bolts and check bracket
<b>Steering Locks in Gear</b>	Release lever mechanism damaged	See STEERING COLUMNS

## TILT STEERING COLUMN TROUBLE SHOOTING

CONDITION	POSSIBLE CAUSE	CORRECTION
<b>Steering Wheel Loose</b>	Excess clearance in support Excess clearance in housing/pivot pin Damaged anti-lash spring in spheres Upper bearing not seated properly Upper bearing inner race seal missing Improperly adjusted tilt/telescopic lock Loose support screws Bearing preload spring missing/broken Housing loose on jacket	Check and replace if necessary Check and replace if necessary See TILT STEERING COLUMNS See TILT STEERING COLUMNS Replace if necessary See adjustment in STEERING COLUMNS Tighten and check bracket Replace spring Tighten and/or replace screws
<b>Play in Column Mount</b>	Loose support screws Loose shoes in housing Loose tilt head pivot pins Loose shoe lock pin in support	Tighten and check bracket See TILT STEERING COLUMNS See TILT STEERING COLUMNS See TILT STEERING COLUMNS
<b>Housing Scraping on Bowl</b>	Bowl bent or out of round	See STEERING WHEEL removal
<b>Wheel Will Not Lock</b>	Shoe seized on its pivot pin Shoe may have burrs/dirt in them Shoe lock spring weak/broken	See TILT STEERING COLUMNS Clean or replace Replace if necessary

## TILT STEERING COLUMN TROUBLE SHOOTING (Cont.)

CONDITION	POSSIBLE CAUSE	CORRECTION
<b>Wheel Fails to Return</b>	Pivot pins are bound up Wheel tilt spring is damaged Turn signal switch wires too tight	Clean or replace See TILT STEERING COLUMNS Loosen and check operation
<b>Noise When Tilting</b>	Upper tilt bumpers worn Tilt spring rubbing in housing	Replace if necessary Adjust and check operation
<b>Hard Steering</b>	Incorrect tire pressure Lack of lubricant in steering linkage Improper front end alignment Improper steering gear adjustment	Inflate to proper pressure Service Steering, Suspension and Linkage See WHEEL ALIGNMENT See STEERING

## MANUAL STEERING GEAR TROUBLE SHOOTING

CONDITION	POSSIBLE CAUSE	CORRECTION
<b>Rattle or Chucking Noise in Rack and Pinion</b>	Rack and pinion mounting bracket loose Lack of/or incorrect lubricant Pitman arm loose on shaft Steering gear mounting bolts loose	Tighten all mounting bolts See RACK & PINION STEERING See STEERING Tighten all mounting bolts
<b>Excessive Play</b>	Front wheel bearing improperly adjusted Loose or worn steering linkage Loose or worn ball joints Loose or worn steering gear shaft Steering arm loose on gear shaft Incorrect front wheel alignment Steering gear housing bolts loose Steering gear adjustment too loose Steering arms loose on knuckles Rack and pinion mounting loose Rack and pinion out of adjustment Tie rod end loose Steering wheel loose Excessive Pitman shaft-to-ball nut lash	See FRONT SUSPENSION See STEERING LINKAGE See FRONT SUSPENSION See STEERING See STEERING See WHEEL ALIGNMENT Tighten all mounting bolts See adjustment in STEERING Tighten and check steering linkage Tighten all mounting bolts See adjustment in STEERING Tighten and check steering linkage See STEERING See STEERING
<b>Poor Returnability</b>	Lack of lubricant in ball joint or linkage Binding in linkage or ball joints Improper front end alignment Improper steering gear adjustment Improper tire pressure	Lubricate and service systems See STEERING LINKAGE and SUSPENSION See WHEEL ALIGNMENT See STEERING Inflate to proper pressure
<b>Excessive Vertical Motion</b>	Improper tire pressure Tires, wheels or rotors out of balance Worn or faulty shock absorbers Loose tie rod ends or steering Improper wheel alignment Loose or worn wheel bearings	Inflate to proper pressure Balance tires then check wheels and rotors Check and replace if necessary Tighten or replace if necessary See WHEEL ALIGNMENT See SUSPENSION
<b>Steering Pulls to One Side</b>	Improper tire pressure Mismatched front tires Wheel bearings not adjusted properly Bent or broken suspension components Improper wheel alignment Brakes dragging	Inflate to proper pressure Rotate or replace if necessary See FRONT SUSPENSION See FRONT SUSPENSION See WHEEL ALIGNMENT See BRAKES
<b>Instability</b>	Low or uneven tire pressure Loose or worn wheel bearings Loose or worn idler arm bushing Loose or worn strut bushings Incorrect front wheel alignment Steering gear not centered Springs or shock absorbers inoperative Improper cross shaft	Inflate to proper pressure See FRONT SUSPENSION See FRONT SUSPENSION See FRONT SUSPENSION See WHEEL ALIGNMENT See STEERING Check and replace if necessary See STEERING

# Steering

## POWER STEERING TROUBLE SHOOTING

CONDITION	POSSIBLE CAUSE	CORRECTION
<b>Rattle or Chucking Noise in Steering</b>	Pressure hoses touching engine parts Loose Pitman shaft Tie rods ends or Pitman arm loose Rack and pinion mounts loose Free play in worm and piston assembly Loose sector shaft or thrust bearing adjustment Free play in pot coupling Worn shaft serrations	Adjust to proper clearance Adjust or replace if necessary Tighten and check system Tighten all mounting bolts See STEERING See STEERING  See STEERING See STEERING
<b>Growl in Steering Pump</b>	Excessive pressure in hoses Scored pressure plates Scored thrust plates or rotor Extreme wear of cam ring	Restriction in hoses see POWER STEERING See POWER STEERING See POWER STEERING See POWER STEERING
<b>Rattle in Steering Pump</b>	Vanes not installed properly Vanes sticking in rotor slots	See POWER STEERING PUMPS See POWER STEERING PUMPS
<b>Swish Noise in Pump</b>	Defective flow control valve	See POWER STEERING PUMPS
<b>Groan in Steering Pump</b>	Air in fluid Poor pressure hose connection	See POWER STEERING PUMPS Tighten and check, replace if necessary
<b>Squawk When Turning</b>	Damper "O" ring on valve spool cut	See POWER STEERING PUMPS
<b>Moan or Whine in Pump</b>	Pump shaft bearing scored Air in fluid or fluid level low Hose or column grounded Cover "O" ring missing or damaged Valve cover baffle missing or damaged Interference of components in pump Loose or poor bracket alignment	Replace bearing and fluid See POWER STEERING PUMPS Check and replace if necessary See POWER STEERING PUMPS See POWER STEERING PUMPS See POWER STEERING PUMPS Correct or replace if necessary
<b>Hissing When Parking</b>	Internal leakage in steering gear	Check valve assembly first
<b>Chirp in Steering Pump</b>	Loose or worn power steering belt	Adjust or replace if necessary
<b>Buzzing When Not Steering</b>	Noisy pump Free play in steering shaft bearing Bearing loose on shaft serrations	See POWER STEERING PUMPS See STEERING See STEERING
<b>Clicking Noise in Pump</b>	Pump slippers too long Broken slipper springs Excessive wear or nicked rotors Damaged cam contour	See POWER STEERING PUMPS See POWER STEERING PUMPS See POWER STEERING PUMPS See POWER STEERING PUMPS
<b>Poor Return of Wheel</b>	Wheel rubbing against turn signal Flange rubbing steering gear adjuster Tight or frozen steering shaft bearing Steering Gear out of adjustment Sticking or plugged spool valve Improper front end alignment Wheel bearings worn or loose Tie rods or ball joints binding Intermediate shaft joints binding Kinked pressure hoses Loose housing head spanner nut Damaged valve lever Sector shaft adjusted too tight Worm thrust bearing adjusted too tight Reaction ring sticking in cylinder Reaction ring sticking in housing head Steering pump internal leakage Steering gear-to-column misalignment Lack of lubrication in linkage Lack of lubrication in ball joints	See STEERING WHEEL SWITCHES See STEERING See STEERING See Adjustment in STEERING See POWER STEERING PUMPS See WHEEL ALIGNMENT See FRONT SUSPENSION Check and replace if necessary See STEERING Correct or replace if necessary See POWER STEERING See POWER STEERING See adjustment in POWER STEERING See adjustment in POWER STEERING See POWER STEERING See POWER STEERING See POWER STEERING PUMPS See STEERING COLUMNS Service front suspension Service front suspension

## POWER STEERING TROUBLE SHOOTING (Cont.)

CONDITION	POSSIBLE CAUSE	CORRECTION
<b>Increased Effort When Turning Wheel Fast Foaming, Milky Power Steering Fluid, Low Fluid Level or Low Pressure</b>	High internal pump leakage	See POWER STEERING PUMPS
	Power steering pump belt slipping	Adjust or replace if necessary
	Low fluid level	Check and fill to proper level
	Engine idle speed to low	Adjust to correct setting
	Air in pump fluid system	See POWER STEERING PUMPS
	Pump output low	See POWER STEERING PUMPS
<b>Wheel Surges or Jerks</b>	Steering gear malfunctioning	See STEERING
	Low fluid level	Check and fill to proper level
	Loose fan belt	Adjust or replace if necessary
	Insufficient pump pressure	See POWER STEERING PUMPS
	Sticky flow control valve	See POWER STEERING PUMPS
<b>Kick Back or Free Play</b>	Linkage hitting oil pan at full turn	See STEERING LINKAGE
	Air in pump fluid system	See POWER STEERING PUMPS
	Worn poppet valve in steering gear	See POWER STEERING
	Excessive over center lash	See POWER STEERING
	Thrust bearing out of adjustment	See POWER STEERING
	Free play in pot coupling	See POWER STEERING PUMPS
	Steering gear coupling loose on shaft	See POWER STEERING PUMPS
	Steering disc mounting bolts loose	Tighten or replace if necessary
	Coupling loose on worm shaft	Tighten or replace if necessary
	Improper sector shaft adjustment	See POWER STEERING
	Excessive worm piston side play	See POWER STEERING
	Damaged valve lever	See POWER STEERING
	Universal joint loose	Tighten or replace if necessary
Defective rotary valve	See POWER STEERING	
<b>No Power When Parking</b>	Sticking flow control valve	See POWER STEERING PUMPS
	Insufficient pump pressure output	See POWER STEERING PUMPS
	Excessive internal pump leakage	See POWER STEERING PUMPS
	Excessive internal gear leakage	See POWER STEERING PUMPS
	Flange rubs against gear adjust plug	See STEERING COLUMN
	Loose pump belt	Adjust or replace if necessary
	Low fluid level	Check and add proper amount of fluid
	Engine idle too low	Adjust to correct setting
	Steering gear-to-column misaligned	See STEERING
<b>No Power Left Turns</b>	Left turn reaction seal "O" ring worn	See POWER STEERING
	Left turn reaction seal damaged/missing	See POWER STEERING
	Cylinder head "O" ring damaged	See POWER STEERING PUMPS
<b>No Power Right Turns</b>	Column pot coupling bottomed	See STEERING
	Right turn reaction seal "O" ring worn	See POWER STEERING
	Right turn reaction seal damaged	See POWER STEERING
	Internal leakage through piston end plug	See STEERING
	Internal leakage through side plugs	See STEERING
<b>Lack of Effort in Turning</b>	Left and/or right reaction seal worn	Replace, see POWER STEERING
	Left and/or right reaction oil passageway not drilled	Check housing and cylinder head
	Left and/or right reaction seal sticking in cylinder head	See POWER STEERING
<b>Wanders to One Side</b>	Front end alignment incorrect	See WHEEL ALIGNMENT
	Unbalanced steering gear valve	See STEERING
<b>Low Pressure Due to Steering Pump</b>	Flow control valve stuck or inoperative	See POWER STEERING
	Pressure plate not flat against cam ring	See POWER STEERING PUMPS
	Extreme wear of cam ring	Replace and check adjustments
	Scored plate, thrust plate or rotor	See POWER STEERING PUMPS
	Vanes not installed properly	See POWER STEERING PUMPS
	Vanes sticking in rotor slots	See POWER STEERING PUMPS
	Cracked/broken thrust or pressure plate	See POWER STEERING PUMPS