

# Component Procedures: Steering

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# Component Procedures: Steering

## Steering Gear (Article 333132)

Non Standards  
- Power (333172)

## Steering Column (Article 333133)

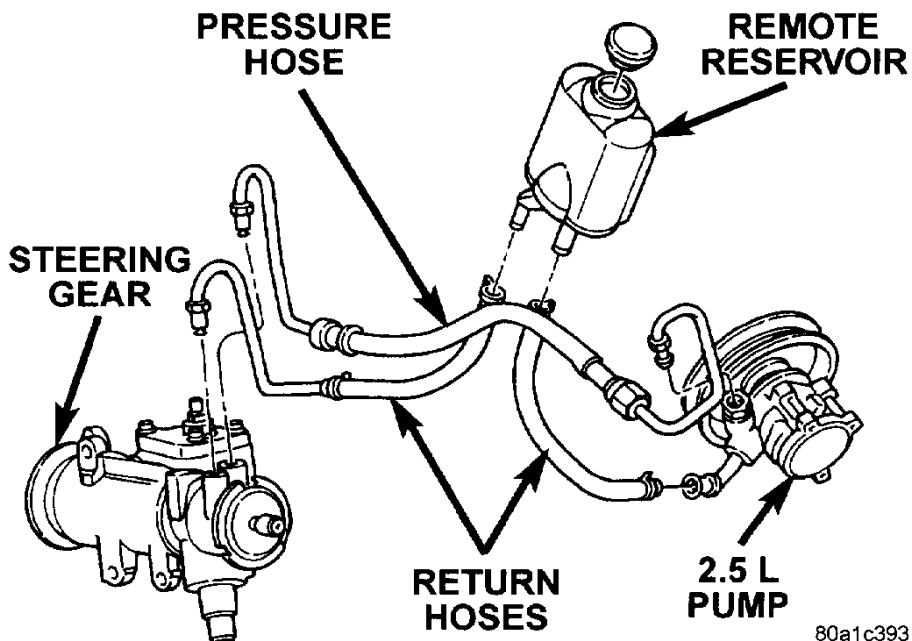
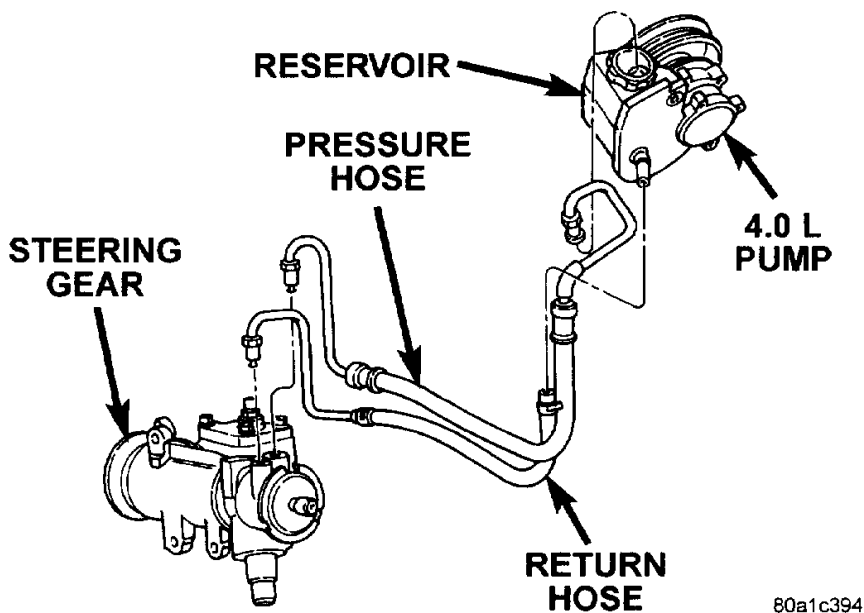
Non Standards  
- With SRS (333174)

## Parts and Labor (itype\_189)

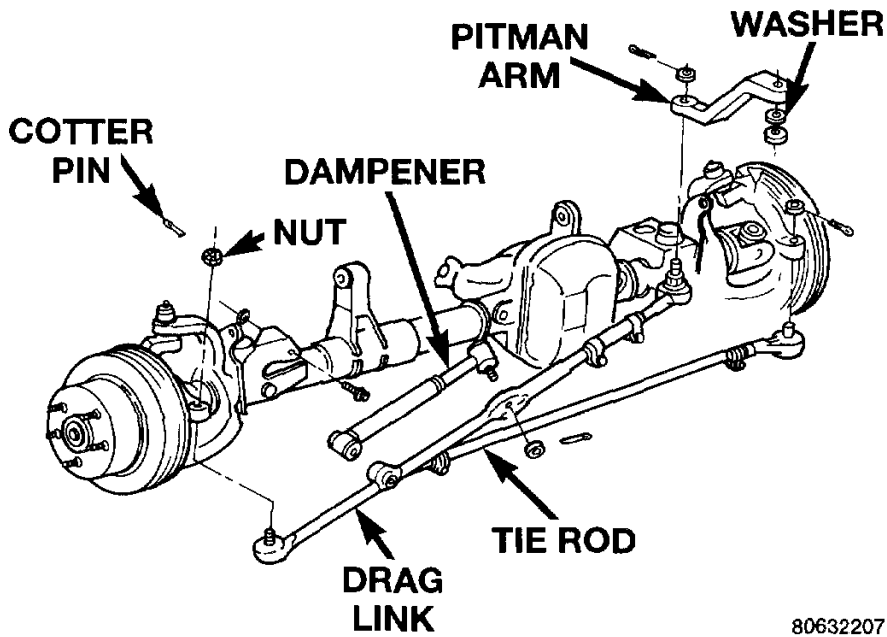
### Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Diagnose/Test	System, Diagnosis	B	0.5	0.0

## General Information (Article 2048071)



## Linkages (Article 2048072)



### Vehicle Damage Warnings (itype\_16)

Periodic lubrication of the steering system components is required.

The following components must be lubricated:

- 
- Tie rod ends
- Drag link

### All Technical Service Bulletins (itype\_100)

Tsbs

- Steering/Suspension - Vibration/Shimmy Above 50 MPH (19-002-12, 2012/07/12)
- Steering - Power Steering Fluid Usage (19-005-03, 2003/08/29)
- Steering - High Speed Shimmy After Hitting Bumps (19-003-06, 2006/08/30)

### Customer Interest Bulletins (itype\_109)

Tsbs

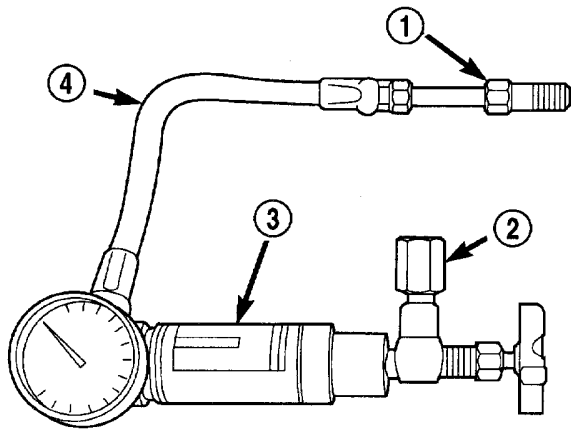
- Steering/Suspension - Vibration/Shimmy Above 50 MPH (19-002-12, 2012/07/12)
- Steering - High Speed Shimmy After Hitting Bumps (19-003-06, 2006/08/30)

### Repair Tips (itype\_110)

Tsbs

- Steering - Power Steering Fluid Usage (19-005-03, 2003/08/29)

### Power Steering Flow and Pressure Test (Article 2047806)



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**Fig. 2 Power Steering Analyzer**

- 1 - TUBE
- 2 - ADAPTER FITTINGS
- 3 - ANALYZER
- 4 - GAUGE HOSE

**Binding, Sticking or Seized (Article 2047795)**

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 component.</li> <li>4. Loose belt.</li> <li>5. Low pump pressure.</li> <li>6. Column shaft coupler binding.</li> <li>7. Steering gear worn or out of adjustment.</li> <li>8. Ball joints binding.</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 lube.</li> <li>4. Adjust or replace.</li> <li>5. Pressure test and replace if necessary.</li> <li>6. Replace coupler.</li> <li>7. Repair or replace gear.</li> <li>8. Inspect and repair as necessary.</li> </ol>

**Insufficient Assist or Poor Return to Center (Article 2047804)**

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. Lack of lubrication.</li> <li>5. Low pump pressure.</li> <li>6. 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. Inspect and lubricate steering and suspension compnents.</li> <li>5. Pressure test and repair as necessary.</li> <li>6. Pressure and flow test, and repair as necessary.</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> <li>5. Ball joints binding.</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 steering and suspension compnents.</li> <li>4. Test and adjust as necessary.</li> <li>5. Inspect and repair as necessary.</li> </ol>

### Loose Steering and Vehicle Lead (Article 2047805)

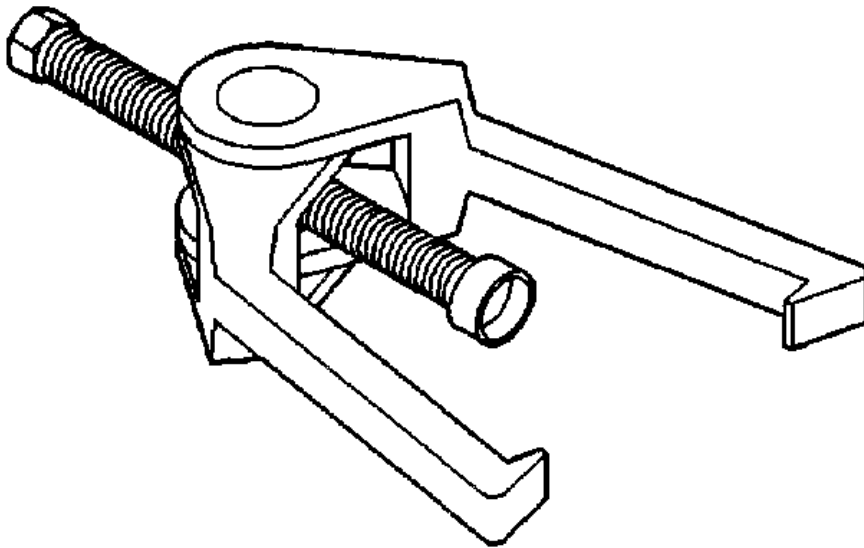
CONDITION	POSSIBLE CAUSE	CORRECTION
EXCESSIVE PLAY IN STEERING WHEEL	<ol style="list-style-type: none"> <li>1. Worn or loose suspension or steering components.</li> <li>2. Worn or loose wheel bearings.</li> <li>3. Steering gear mounting.</li> <li>4. Gear out of adjustment.</li> <li>5. Worn or loose steering coupler.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair as necessary.</li> <li>2. Repair as necessary.</li> <li>3. Tighten gear mounting bolts to specification.</li> <li>4. Adjust gear to specification.</li> <li>5. Repair as necessary.</li> </ol>

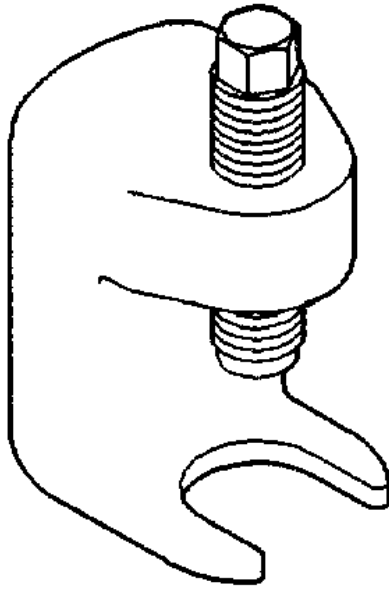
CONDITION	POSSIBLE CAUSE	CORRECTION
VEHICLE PULLS OR LEADS TO ONE SIDE	<ol style="list-style-type: none"> <li>1. Tire Pressure.</li> <li>2. Radial tire lead.</li> <li>3. Brakes dragging.</li> <li>4. Wheel alignment.</li> <li>5. Weak or broken spring.</li> <li>6. Loose or worn steering or suspension components.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust tire pressure.</li> <li>2. Cross front tires.</li> <li>3. Repair as necessary.</li> <li>4. Align vehicle.</li> <li>5. Replace spring.</li> <li>6. Repair as necessary.</li> </ol>

### Steering Noise (Article 2047802)

CONDITION	POSSIBLE CAUSES	CORRECTION
OBJECTIONAL HISS OR WHISTLE	<ol style="list-style-type: none"> <li>1. Steering intermediate shaft to dash panel seal.</li> <li>2. Noisy valve in power steering gear.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and repair seal at dash panel.</li> <li>2. Replace steering gear.</li> </ol>
RATTLE OR CLUNK	<ol style="list-style-type: none"> <li>1. Gear mounting bolts loose.</li> <li>2. Loose or damaged suspension components.</li> <li>3. Loose or damaged steering linkage.</li> <li>4. Internal gear noise.</li> <li>5. Pressure hose in contact with other components.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten bolts to specification.</li> <li>2. Inspect and repair suspension.</li> <li>3. Inspect and repair steering linkage.</li> <li>4. Replace gear.</li> <li>5. Reposition hose.</li> </ol>
CHIRP OR SQUEAL	<ol style="list-style-type: none"> <li>1. Loose belt.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust or replace.</li> </ol>
WHINE OR GROWL	<ol style="list-style-type: none"> <li>1. Low fluid level.</li> <li>2. Pressure hose in contact with other components.</li> <li>3. Internal pump noise.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill to proper level.</li> <li>2. Reposition hose.</li> <li>3. Replace pump.</li> </ol>
SUCKING AIR SOUND	<ol style="list-style-type: none"> <li>1. Loose return line clamp.</li> <li>2. O-ring missing or damaged on hose fitting.</li> <li>3. Low fluid level.</li> <li>4. Air leak between pump and reservoir.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace clamp.</li> <li>2. Replace o-ring.</li> <li>3. Fill to proper level.</li> <li>4. Repair as necessary.</li> </ol>
SCRUBBING OR KNOCKING	<ol style="list-style-type: none"> <li>1. Wrong tire size.</li> <li>2. Wrong gear.</li> </ol>	<ol style="list-style-type: none"> <li>1. Verify tire size.</li> <li>2. Verify gear.</li> </ol>

## Electrical / Mechanical Repair (itype\_413)





### **Bouncing (itype\_124)**

Tsbs

- Steering/Suspension - Vibration/Shimmy Above 50 MPH (19-002-12, 2012/07/12)
- Steering - High Speed Shimmy After Hitting Bumps (19-003-06, 2006/08/30)

### **Vibration (itype\_176)**

Tsbs

- Steering/Suspension - Vibration/Shimmy Above 50 MPH (19-002-12, 2012/07/12)
- Steering - High Speed Shimmy After Hitting Bumps (19-003-06, 2006/08/30)