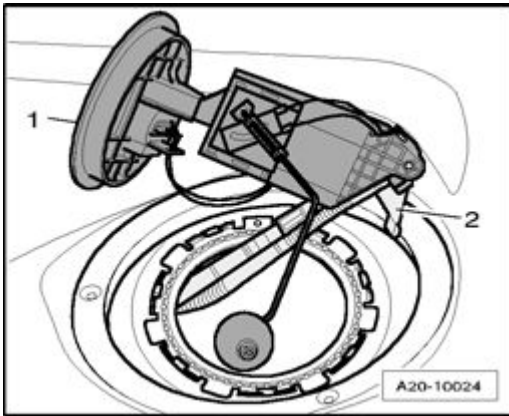


**POWER STEERING FLUID RESERVOIR REPLACEMENT (LF1, LFW, OR LFX)**

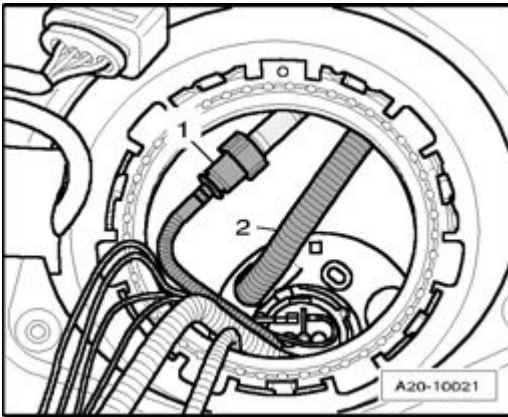


**Fig. 7: View Of Power Steering Hoses & Fluid Reservoir (LF1)**  
 Courtesy of GENERAL MOTORS COMPANY

**Power Steering Fluid Reservoir Replacement (LF1, LFW, or LFX)**

Callout	Component Name
<b>Preliminary Procedure</b>	
1. Remove the intake manifold cover. Refer to <b>Intake Manifold Cover Replacement</b> 2. Remove the power steering fluid from the reservoir. 3. Place a drain pan under the vehicle.	
1	Power Steering Reservoir Outlet Hose
2	Power Steering Gear Outlet Hose
3	Bolt  <b>CAUTION:</b> Refer to <b>Fastener Caution</b> .  <b>Tighten</b> 9 N.m (80 lb in)
4	Power Steering Reservoir  <b>Procedure</b>  1. Use a flat bladed tool to disengage the reservoir from the reservoir bracket. 2. Fill and bleed the power steering system. Refer to <b>Power Steering System Bleeding</b>

**POWER STEERING FLUID RESERVOIR BRACKET REPLACEMENT (LF1, LFW, OR LFX)**

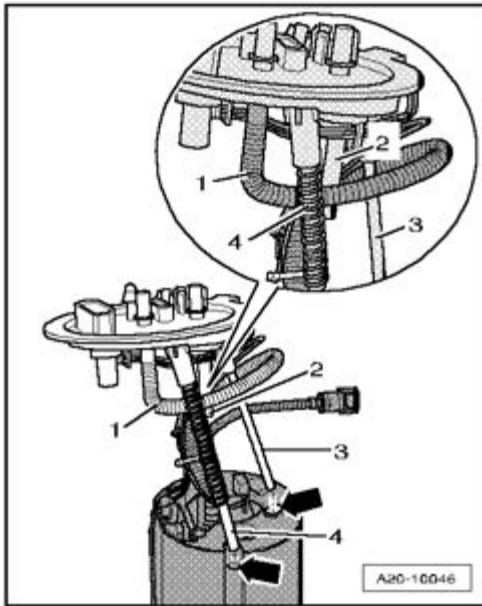


**Fig. 8: Power Steering Fluid Reservoir Bracket (V6)**  
 Courtesy of GENERAL MOTORS COMPANY

**Power Steering Fluid Reservoir Bracket Replacement (LF1, LFW, or LFX)**

Callout	Component Name
<p><b>Preliminary Procedure</b></p> <ol style="list-style-type: none"> <li>1. Remove the intake manifold cover. Refer to <b>Intake Manifold Cover Replacement</b></li> <li>2. Remove the power steering Reservoir from the bracket only. Do not remove the hoses. Refer to <b>Power Steering Fluid Reservoir Replacement (LF1, LFW, or LFX)</b>.</li> </ol>	
<p>1</p>	<p>Bolt (Qty: 2)</p> <p><b>CAUTION:</b>                      Refer to <b>Fastener Caution</b> .</p> <p><b>Tighten</b>                      9 N.m (80 lb in)</p>
<p>2</p>	<p>Power Steering Reservoir Bracket</p>

**POWER STEERING PUMP PULLEY REPLACEMENT**

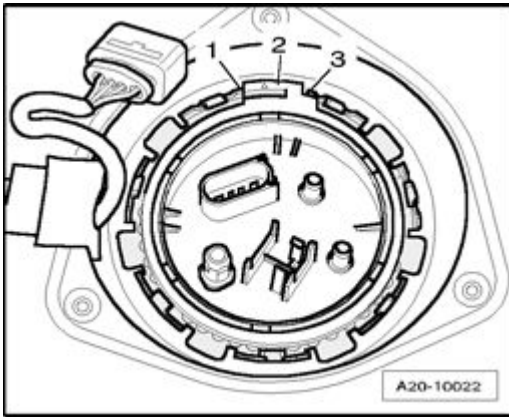


**Fig. 9: Power Steering Pump Pulley**  
 Courtesy of GENERAL MOTORS COMPANY

**Power Steering Pump Pulley Replacement**

Callout	Component Name
<p><b>Preliminary Procedure</b>                      Remove the power steering pump. Refer to <b>Power Steering Pump Replacement</b>.</p>	
<p>1</p>	<p>Power Steering Pump Pulley</p> <p><b>Procedure</b></p> <ol style="list-style-type: none"> <li>1. Use the <b>CH-25034-C</b> remover to remove the power steering pump pulley.</li> <li>2. Use the <b>CH-25033-C</b> installer to install the power steering pump pulley.</li> </ol> <p><b>NOTE:</b>                      Ensure the power steering pump pulley is flush with the power steering pump shaft and is aligned with the other pulleys.</p> <p><b>Special Tools</b></p> <ul style="list-style-type: none"> <li>• <b>CH-25033-C</b> Pulley Installer</li> <li>• <b>CH-25034-C</b> Pulley Remover</li> </ul> <p>For equivalent regional tools, refer to <b>Special Tools</b>.</p>

**POWER STEERING PUMP REPLACEMENT**



**Fig. 10: View Of Power Steering Pump & Bolts**  
 Courtesy of GENERAL MOTORS COMPANY

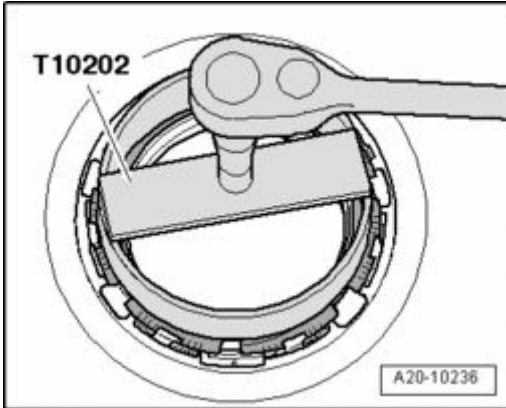
**Power Steering Pump Replacement**

Callout	Component Name
<p><b>Preliminary Procedure</b></p> <ol style="list-style-type: none"> <li>Place drain pans under the vehicle.</li> <li>Remove as much power steering fluid from the power steering fluid reservoir as possible.</li> <li>Remove the drive belt from the power steering pump pulley only. Refer to <b><u>Drive Belt Replacement</u></b> .</li> <li>Remove the right front tire and wheel assembly. Refer to <b><u>Tire and Wheel Removal and Installation</u></b> .</li> <li>Disconnect the power steering fluid reservoir outlet hose from the power steering pump. Refer to <b><u>Power Steering Fluid Reservoir Outlet Hose Replacement (LF1, LFW, or LFX)</u></b>.</li> <li>Disconnect the power steering gear inlet hose from the power steering pump. Refer to <b><u>Power Steering Gear Inlet Pipe/Hose Replacement (LHD and LF1, or LFW, or LFX)</u></b>.</li> </ol>	
1	<p>Power Steering Pump Bolt (Qty: 3)</p> <p><b>CAUTION:</b>                      Refer to <b><u>Fastener Caution</u></b> .</p> <p><b>TIP:</b> Note the routing for installation.  <b>Tighten</b>                      22 N.m (16 lb ft)</p>
2	<p>Power Steering Pump</p> <p><b>Procedure</b></p> <ol style="list-style-type: none"> <li>Remove the power steering pump through the right front wheel well opening.</li> <li>Transfer the power steering pump pulley. Refer to <b><u>Power Steering Pump Pulley</u></b></li> </ol>

**Replacement.**

3. Fill and bleed the power steering system. Refer to **Power Steering System Bleeding**.
4. Clean any excess power steering fluid from the vehicle.

**STEERING LINKAGE OUTER TIE ROD REPLACEMENT**



**Fig. 11: View Of Steering Linkage Outer Tie Rod**  
 Courtesy of GENERAL MOTORS COMPANY

**Steering Linkage Outer Tie Rod Replacement**

Callout	Component Name
<b>Preliminary Procedures</b>	
<ol style="list-style-type: none"> <li>1. Raise and support the vehicle. Refer to <b>Lifting and Jacking the Vehicle</b> .</li> <li>2. Remove the front tire and wheel assembly. Refer to <b>Tire and Wheel Removal and Installation</b> .</li> </ol>	
1	Steering Linkage Outer Tie Rod Nut  <b>CAUTION:</b> Refer to <b>Fastener Caution</b> .  <b>Tighten</b> <ol style="list-style-type: none"> <li>1. 25 N.m (18 lb ft)</li> <li>2. 90 degrees</li> </ol>
2	Steering Linkage Inner Tie Rod Nut  <b>Procedure</b> <ol style="list-style-type: none"> <li>1. Use paint in order to place match marks on the steering linkage inner tie rod nut and on the steering linkage inner tie rod.</li> <li>2. During installation, align the match marks.</li> </ol>

- Do not tighten the nut during installation. Tighten the nut after adjusting the front toe. Refer to **Wheel Alignment - Steering Wheel Angle and/or Front Toe Adjustment**.

Steering Linkage Outer Tie Rod

**CAUTION:**

Do not free the ball stud by using a pickle fork or a wedge-type tool. Damage to the seal or bushing may result.

**Procedure**

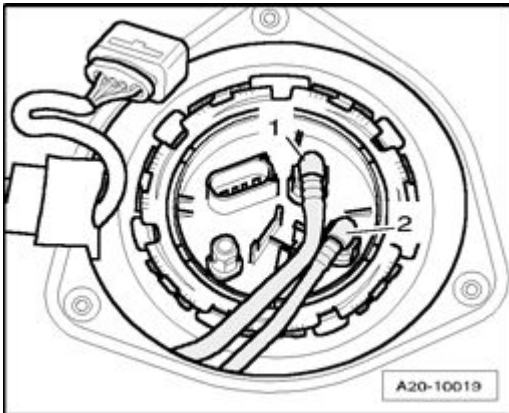
3

- Use the **CH-24319-B** puller in order to separate the steering linkage outer tie rod from the steering knuckle.
- Inspect the steering linkage inner tie rod for bent or damaged threads.
- Clean the tapered surface of the steering knuckle.
- After the installation is complete, measure and adjust the front toe. Refer to **Wheel Alignment - Steering Wheel Angle and/or Front Toe Adjustment**.

**Special Tools**

**CH-24319-B** Steering Linkage and Tie Rod Puller  
For equivalent regional tools, refer to **Special Tools**.

**STEERING GEAR BOOT REPLACEMENT**



**Fig. 12: Identifying Steering Gear Boot, Clamps & Tie Rod Nut**  
Courtesy of GENERAL MOTORS COMPANY

**Steering Gear Boot Replacement**

Callout	Component Name
<b>Preliminary Procedures</b>	
1.	Raise and support the vehicle. Refer to <b>Lifting and Jacking the Vehicle</b> .
2.	Remove the steering linkage outer tie rod. Refer to <b>Steering Linkage Outer Tie Rod</b>