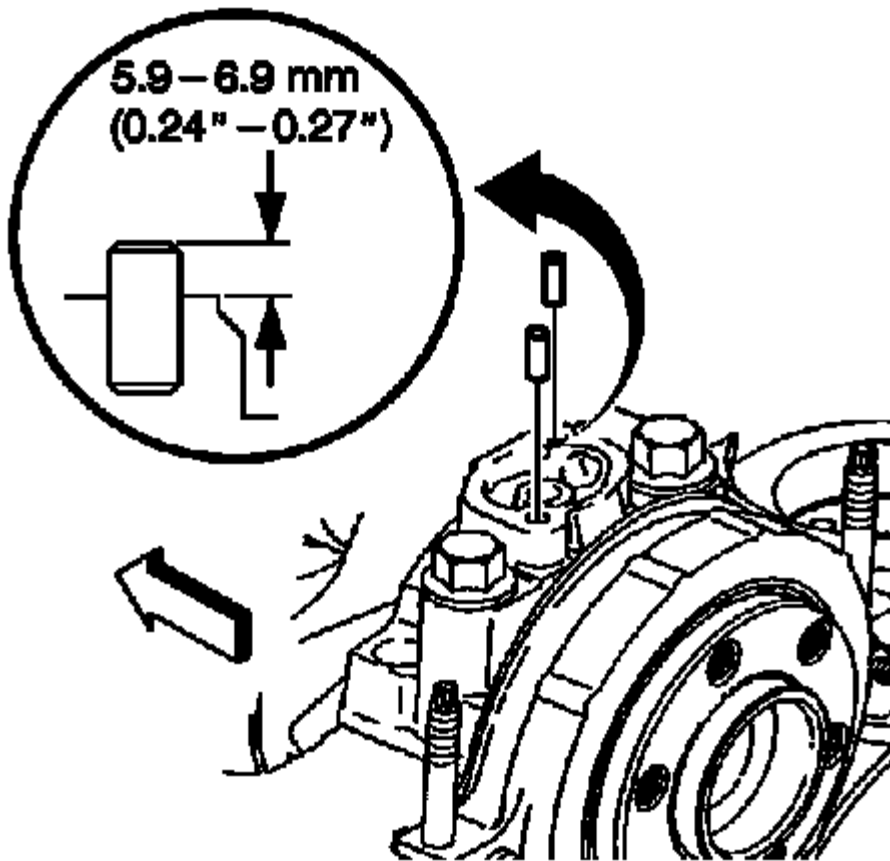


**Fig. 261: Removing Oil Pump**  
Courtesy of GENERAL MOTORS CORP.

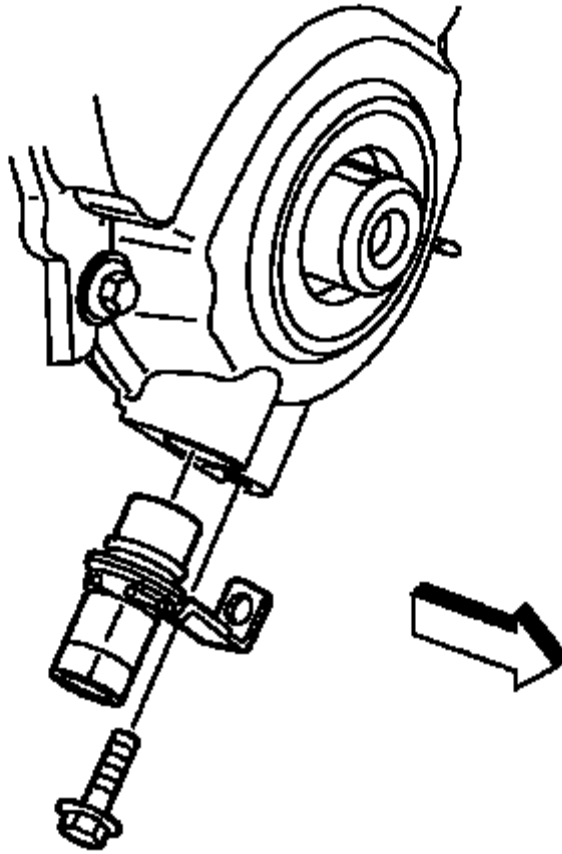
2. Remove the oil pump.



**Fig. 262: Oil Pump Locator Pins**  
Courtesy of GENERAL MOTORS CORP.

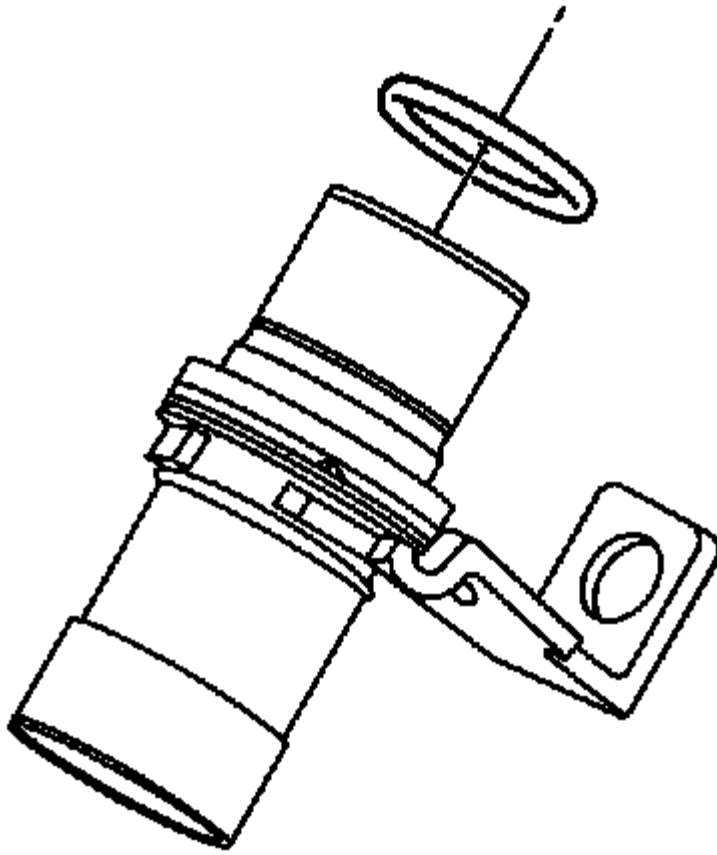
3. Inspect the oil pump locator pins for damage, and replace the pins if required.

**Engine Front Cover Removal**



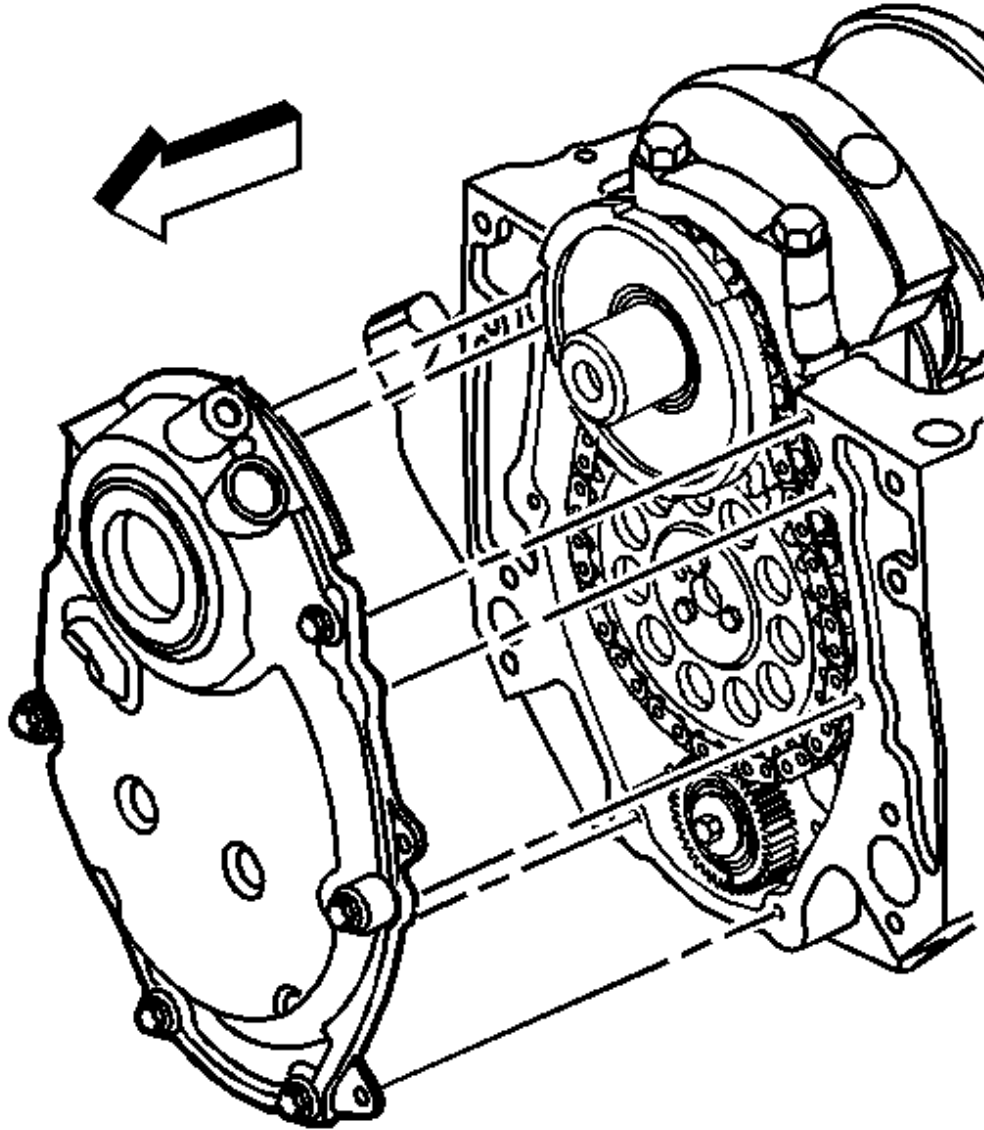
**Fig. 263: View Of CKP Sensor & Bolt**  
Courtesy of GENERAL MOTORS CORP.

1. Remove the crankshaft position sensor bolt.
2. Remove the crankshaft position sensor.



**Fig. 264: View Of Crankshaft Position Sensor Seal O-Ring**  
Courtesy of GENERAL MOTORS CORP.

3. Remove the crankshaft position sensor seal, O-ring.
4. Discard the crankshaft position sensor seal, O-ring.



**Fig. 265: Removing Engine Front Cover & Bolts**  
Courtesy of GENERAL MOTORS CORP.

5. Remove the engine front cover bolts.

**IMPORTANT:** After the composite engine front cover is removed do not reinstall the engine front cover. Always install a NEW engine front cover.

## 2005 GMC Safari

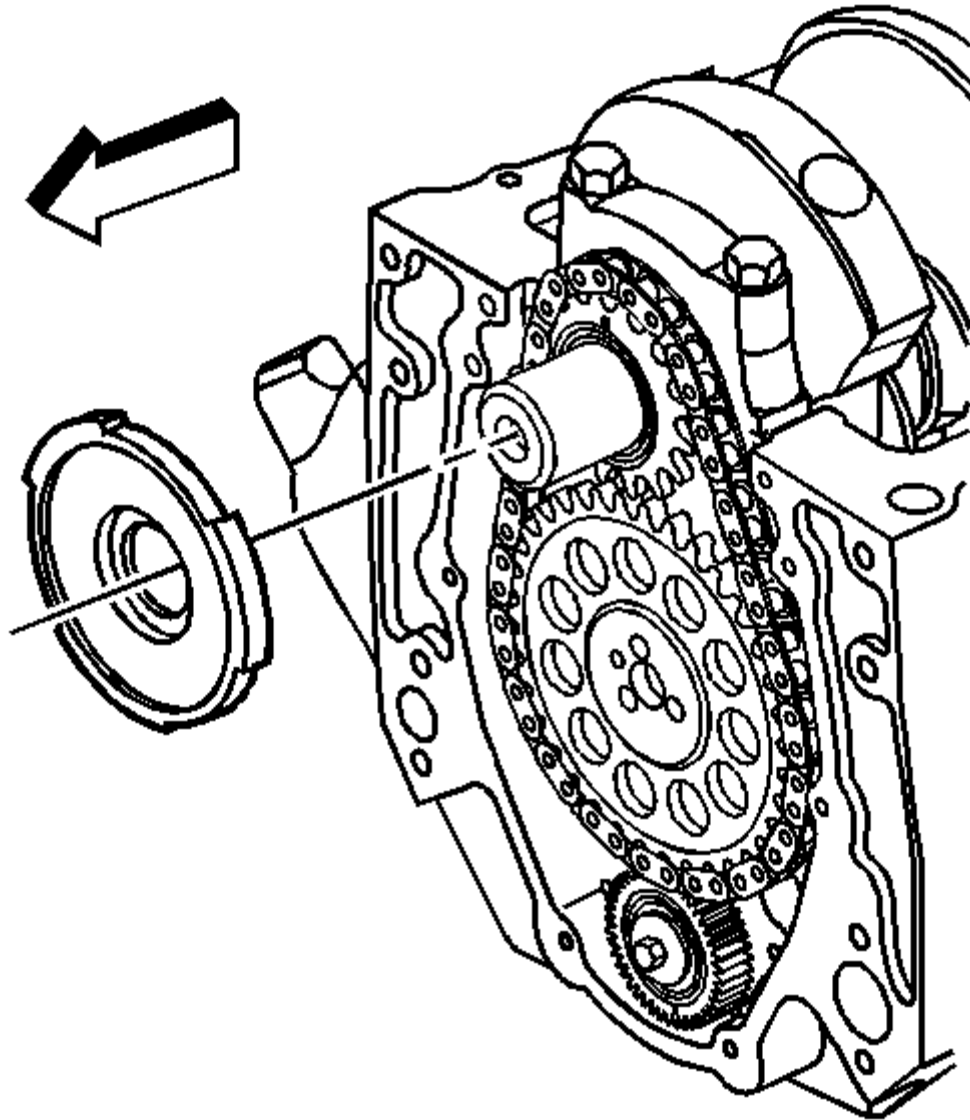
2005 ENGINE Engine Mechanical - 4.3L - Astro & Safari

6. Remove the engine front cover.
7. Discard the engine front cover.

### Timing Chain and Sprockets Removal

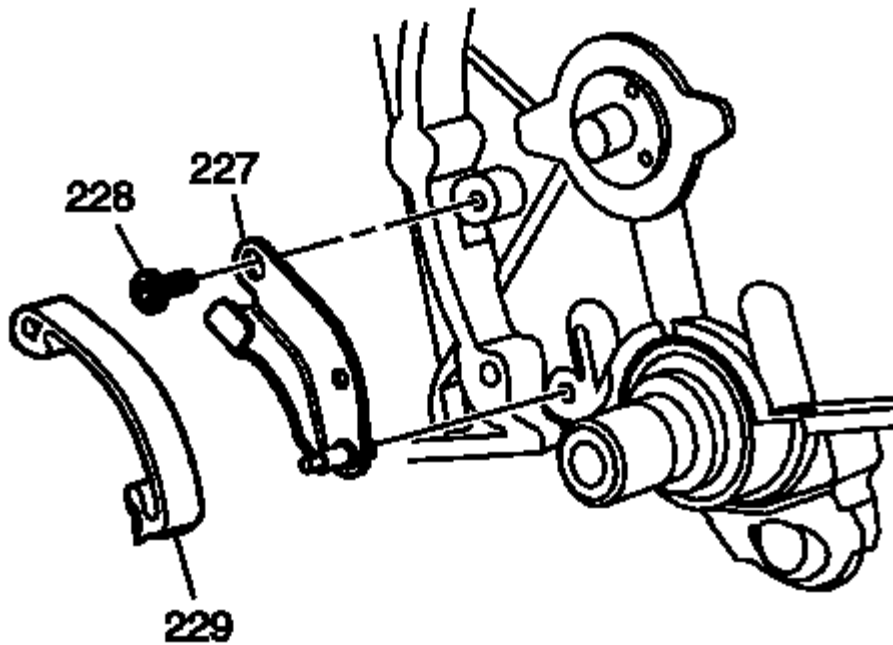
### Tools Required

**J 5825-A** Crankshaft Gear Remover. See **Special Tools**.



**Fig. 266: Removing Crankshaft Position Sensor Reluctor Ring**  
Courtesy of GENERAL MOTORS CORP.

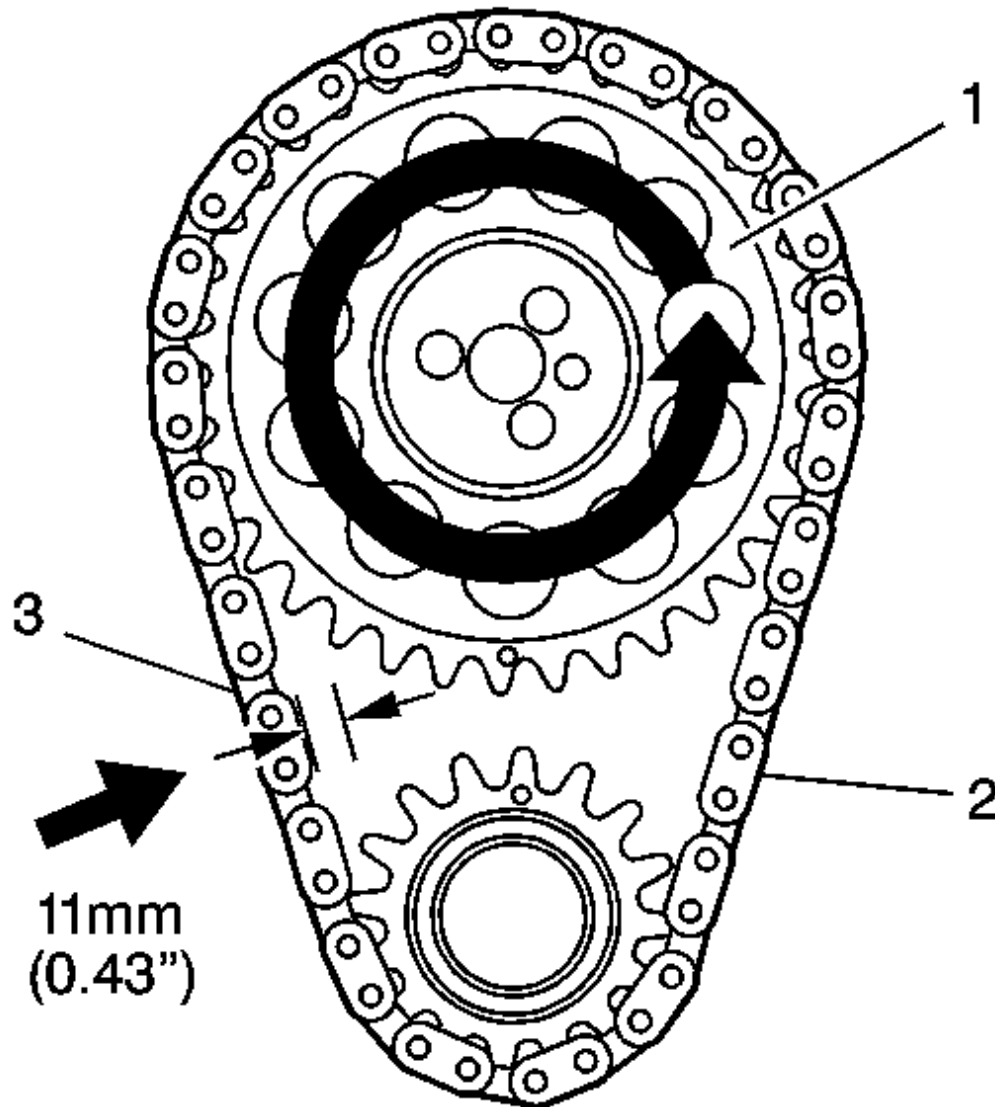
1. Remove the crankshaft position sensor reluctor ring.



**Fig. 267: Removing Timing Chain Tensioner Shoe, Bracket & Bolt**  
Courtesy of GENERAL MOTORS CORP.

2. Remove the timing chain tensioner shoe (229) using a downward motion.
3. Remove the timing chain tensioner bracket bolt and bracket (227 and 228).

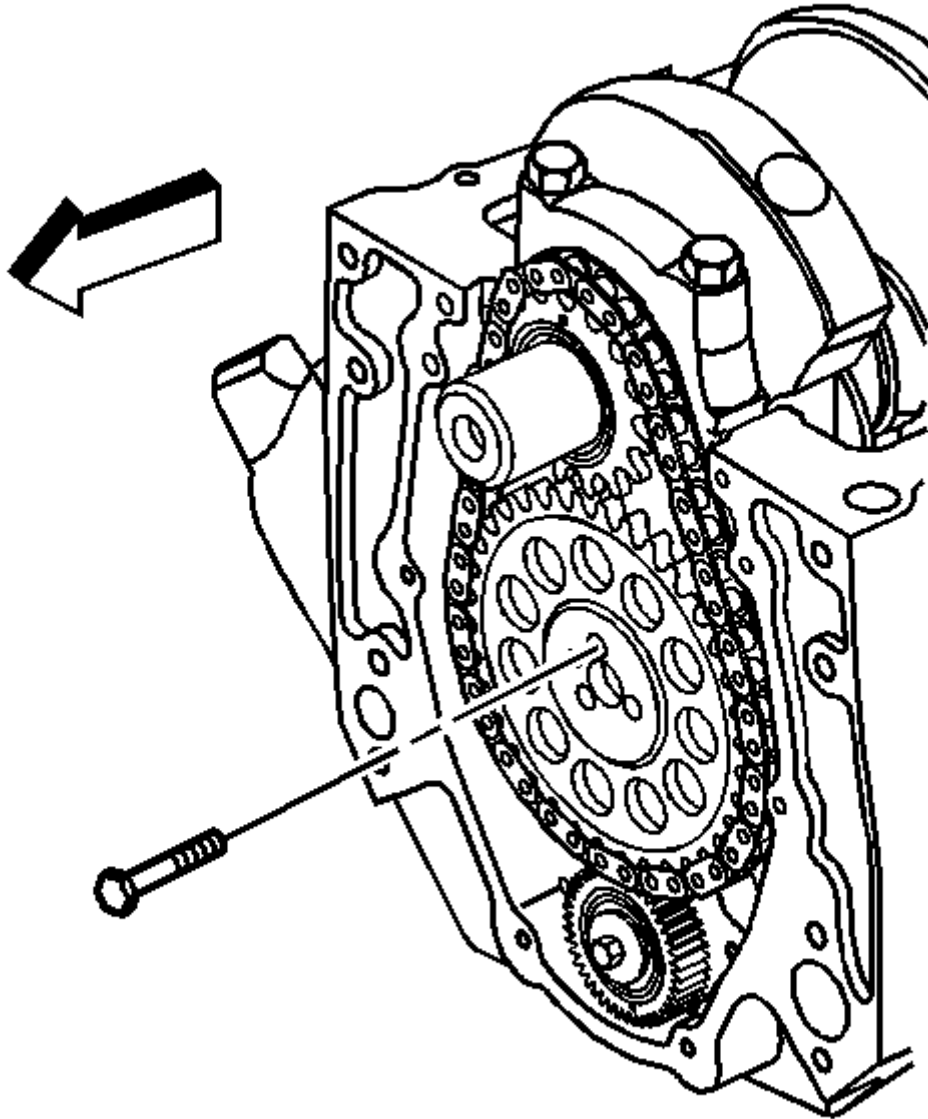




**Fig. 268: Camshaft Sprocket, Timing Chain & Slack Side**  
Courtesy of GENERAL MOTORS CORP.

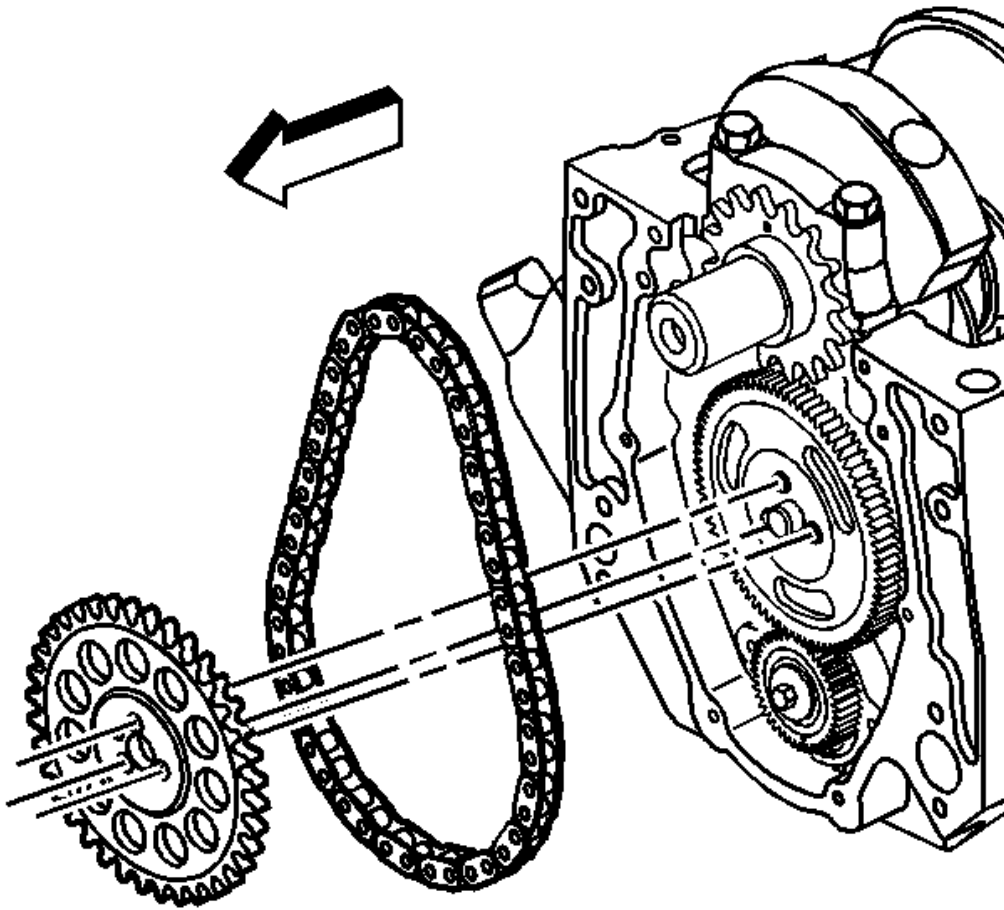
4. Check the camshaft timing chain free play.
  1. Rotate the camshaft sprocket (1) counterclockwise until all slack is removed from the camshaft timing chain (2).
  2. Measure the free play on the slack side (3) of the camshaft timing chain.

If the camshaft timing chain can be moved side to side in excess of 11 mm (0.43 in), replacement of the camshaft timing chain and the sprockets is recommended during assembly.



**Fig. 269: Removing Camshaft Sprocket Bolts**  
Courtesy of GENERAL MOTORS CORP.

5. Remove the camshaft sprocket bolts.



**Fig. 270: Removing Camshaft Sprocket & Timing Chain**  
Courtesy of GENERAL MOTORS CORP.

6. Remove the camshaft sprocket and the camshaft timing chain.