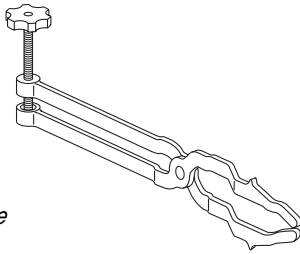


GM V8 Cam Tools Set Operating Instructions

Part No.	Cam Tool
527048	Cam Chain Tension Holder
527050	Crankshaft Rotation Tool
527057	Camshaft Holding Tool (qty. 2)
527058	Secondary Drive Sprocket Fixture
529636	Timing Chain Retention Tool
529637	Timing Chain Retention Tool
529638	Timing Chain Retention Tool (qty. 2)
528084	Carrying Case

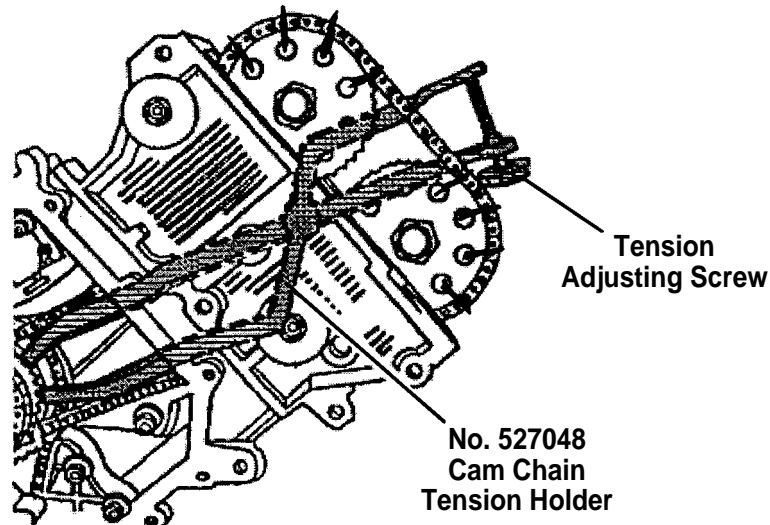


Similar to
Kent-Moore
J-38822


No. 527048 Cam Chain Tension Holder

Application : 1993–1999 4.6L V8 Cadillac

1. Secure the camshaft sprocket to the timing chain by installing plastic tie straps through the cam sprocket holes. (Use four tie straps per sprocket.)
2. Working behind the sprockets, install No. 527048 Cam Chain Tension Holder, positioning it between the chain tensioner and the guide. Apply tension by tightening the tension adjusting screw.

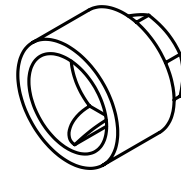


3. Remove the cam sprocket bolts from the camshaft. Note the location of the cam drive pin in the end of the camshaft for reassembly.
4. Slowly work the sprocket and chain assembly off each cam. *Note: Alternately work each sprocket off its cam a little at a time.*
5. Refer to the vehicle service manual, and perform the service required to each camshaft.
6. Assemble the cam drive pins in the locations noted in Step 3.
7. Reinstall the sprocket and chain assembly onto the camshaft. Tighten cam sprocket bolts to 89 ft-lbs (120 N•m).
8. Remove No. 527048 Cam Chain Tension Holder and the plastic straps from the cam sprocket.

 **CAUTION:** To prevent personal injury, wear eye protection that meets ANSI Z87.1 and OSHA standards.

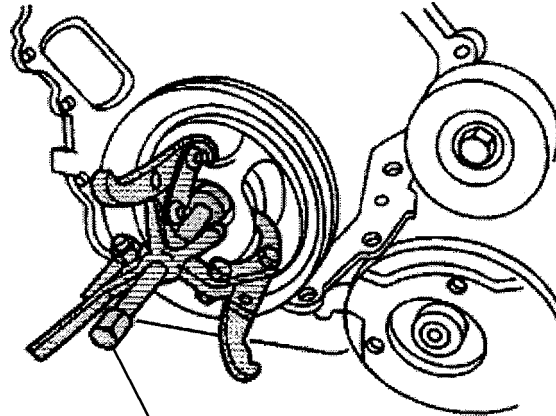
No. 527050 Crankshaft Rotation Tool

Application : 2000—Current 4.6L V8 Cadillac
2001—2003 4.0L V8 Oldsmobile Aurora



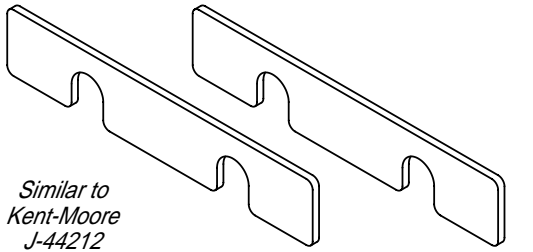
*Similar to
Kent-Moore
J-39946*

1. Remove the crankshaft bolt.
2. Use OTC No. 1026 Puller (not included) to remove the crankshaft balancer.



OTC No. 1026
(not included)

3. Place No. 527050 Crankshaft Rotation Tool over the crankshaft. Use a 3/8" ratchet or breaker bar to turn the tool clockwise.

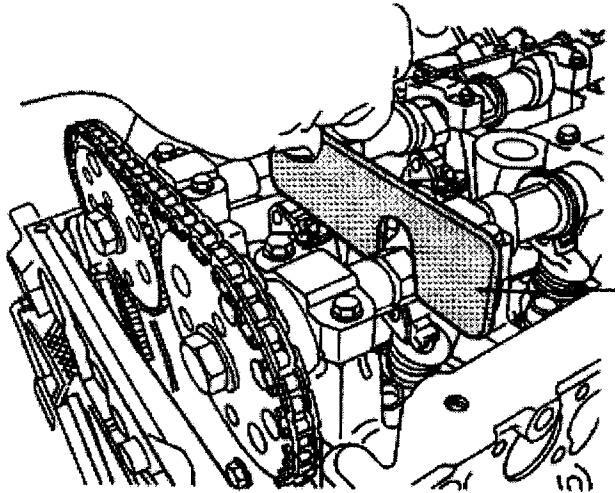


Similar to
Kent-Moore
J-44212

No. 527057 Camshaft Holding Tool

Application : 2000—Current 4.6L V8 Cadillac
2001—2003 4.0L V8 Oldsmobile Aurora

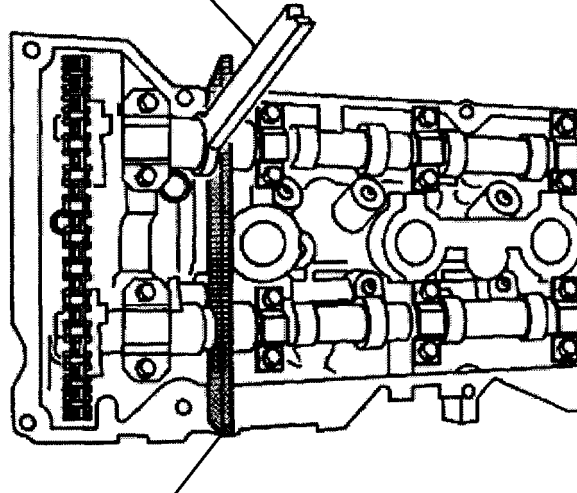
1. Rotate the crankshaft to Top Dead Center (TDC) #1 cylinder compression stroke. Both camshaft sprockets should be at the top of their rotation.
2. Install No. 527057 Camshaft Holding Tool over the camshaft. *Note : Two camshaft holding tools have been provided in this set in case the technician wants to pull both heads at the same time.*



No. 527057
Camshaft
Holding Tool

3. Position an open-end wrench on the hex cast into the camshafts to prevent the camshafts from rotating when removing / installing the camshaft sprocket bolt. **Important : Using an open-end wrench will prevent damage to the Camshaft Holding Tool.**

Open End Wrench



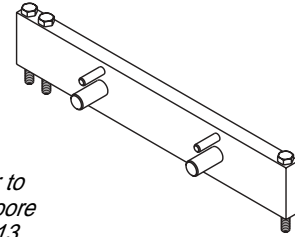
No. 527057
Camshaft Holding Tool



CAUTION: To prevent personal injury, wear eye protection that meets ANSI Z87.1 and OSHA standards.

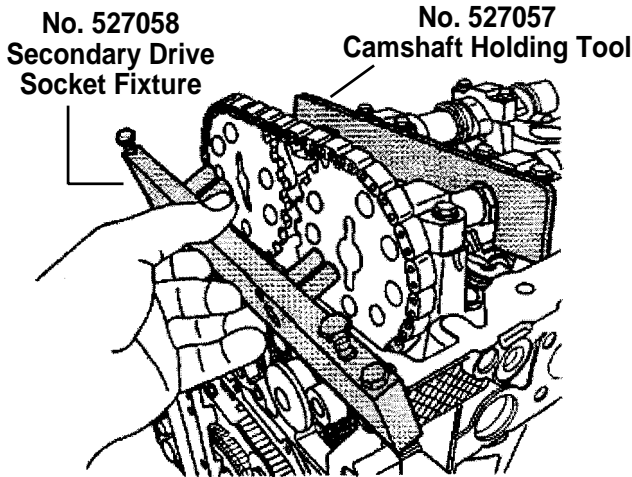
No. 527058 Secondary Drive Sprocket Fixture

Application : 2000—Current 4.6L V8 Cadillac
2001—2003 4.0L V8 Oldsmobile Aurora

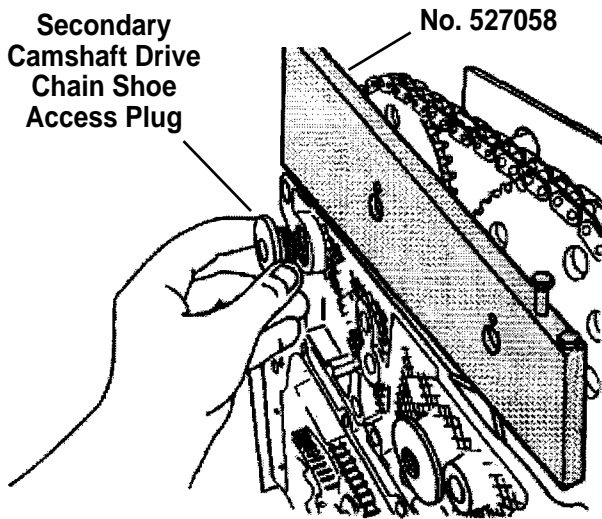


Similar to
Kent-Moore
J-44213

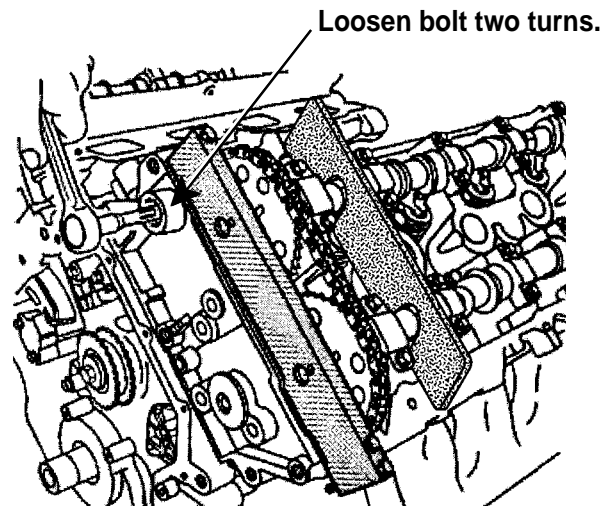
1. Install No. 527057 Camshaft Holding Tool (included in this kit) on the camshafts.
2. Remove the camshaft sprocket bolts.
3. Install No. 527058 Secondary Drive Sprocket Fixture on the cylinder head.



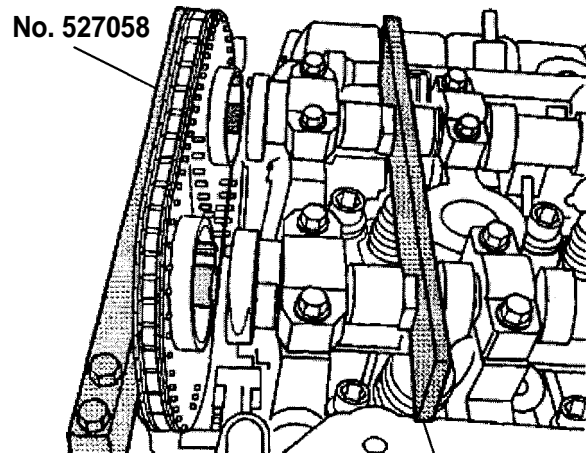
4. Remove the secondary camshaft drive chain shoe access plug.




5. Loosen the secondary drive chain shoe bolt two turns. **Important : Loosen the bolt only enough to take the pressure off. Loosening the bolt too much will cause the shoe to fall to the bottom of the engine.**

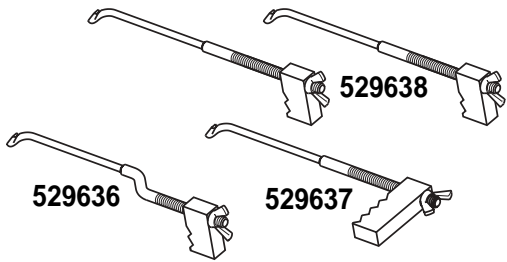


6. Slide the intake and exhaust camshaft sprockets onto the pins on the No. 527058.
7. Refer to the vehicle service manual for instructions to perform the camshaft service required.



No. 527057

 **CAUTION:** To prevent personal injury, wear eye protection that meets ANSI Z87.1 and OSHA standards.



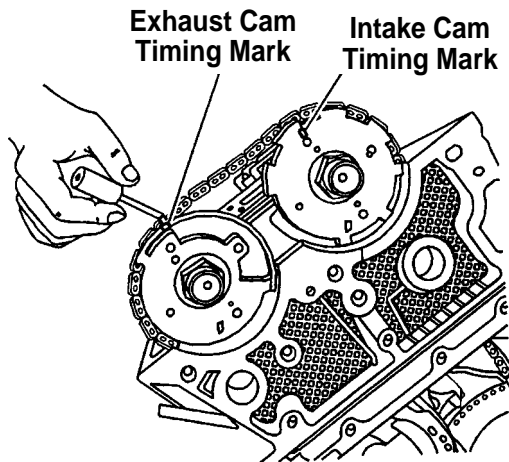
Nos. 529636, 529637, 529638 Timing Chain Retention Tools

Application : 2004—Current 4.6L V8 VIN Code A Cadillac SRX, STS, SLS, XLR;
Pontiac Bonneville GXP

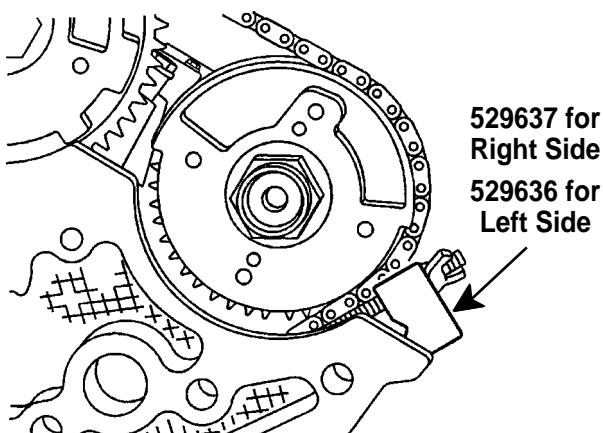
These tools are designed to be used together :

- 529636 is used to retain the timing chain on the left exhaust camshaft side of the engine.
- 529637 is used to retain the timing chain on the right exhaust camshaft side of the engine.
- 529638 (2 ea.) is used to retain the timing chain on the right and left intake camshaft side of the engine.

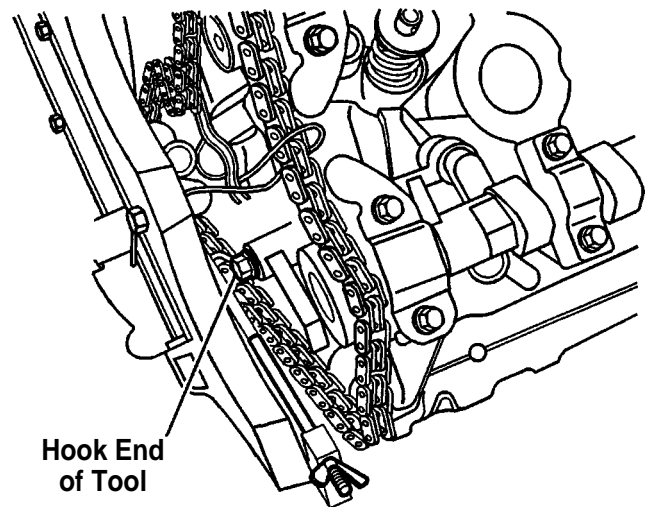
1. Rotate the crankshaft to Top Dead Center (TDC) #1 cylinder compression stroke. Use a paint stick to create a mark on the timing chain link next to each camshaft position timing mark.



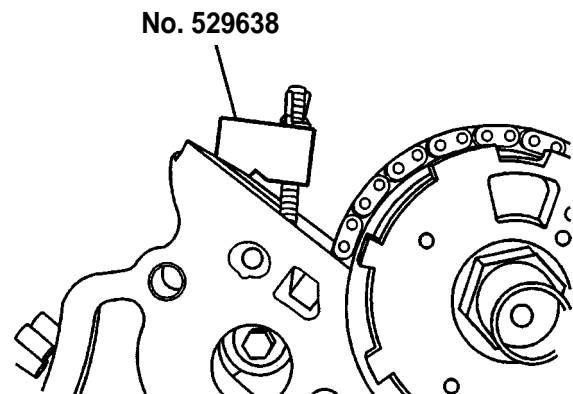
2. Rotate the wing nut on each tool to the top of its travel.
3. Position the appropriate retention tool (529637 for right side; 529636 for left side) on the cylinder head with the V-notch on the block adjacent to the exhaust camshaft timing sprocket and chain.




4. Insert the hook end of the tool into a secondary timing chain link.

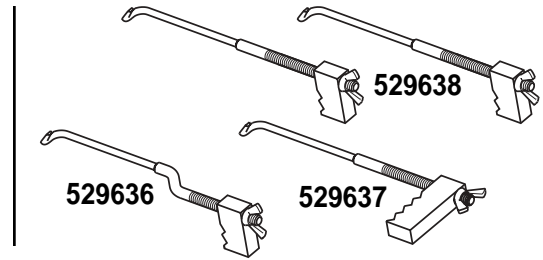


5. Rotate the wing nut until it contacts the retention tool block, but DO NOT tighten the wing nut.
6. Verify the wing nut on No. 529638 is at the top of its travel. Position No. 529638 on the cylinder head with the V-notch on the block adjacent to the intake camshaft timing sprocket and chain.

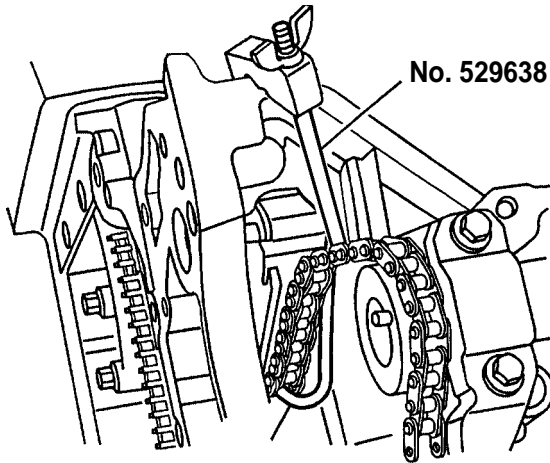


 **CAUTION:** To prevent personal injury, wear eye protection that meets ANSI Z87.1 and OSHA standards.

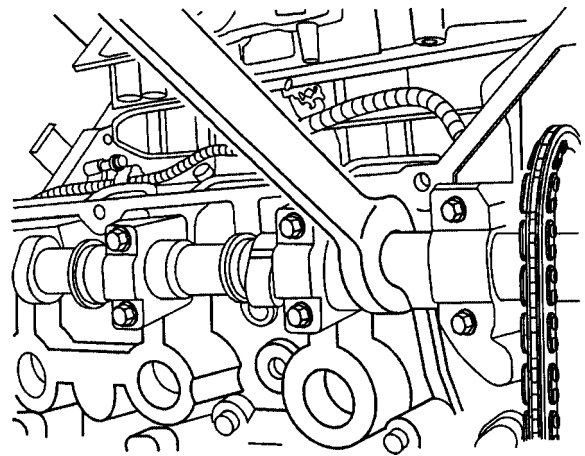
Nos. 529636, 529637, 529638 Timing Chain Retention Tools contd.



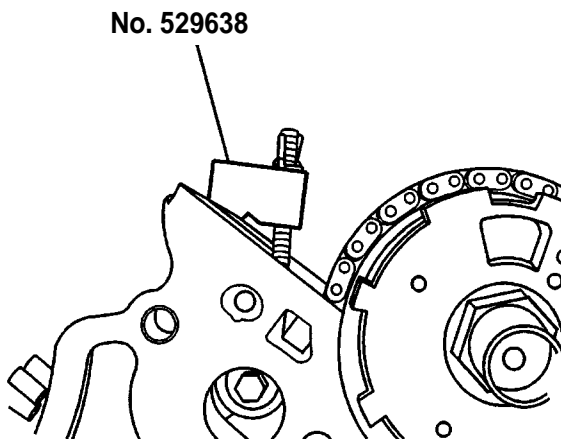
7. Insert the hook end of No. 529638 into a secondary timing chain link.



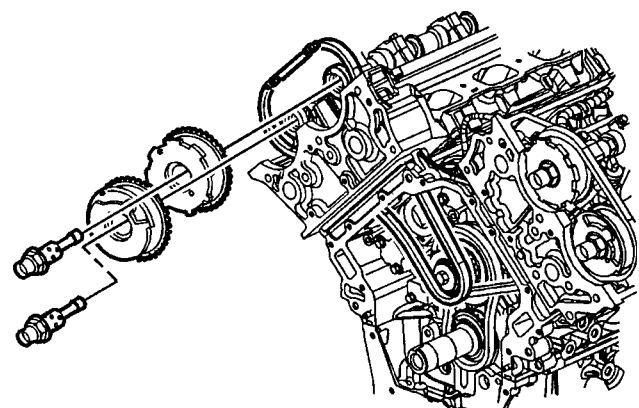
9. Use an open-end wrench on the hex cast into the intake or exhaust camshaft to prevent the camshaft from rotating when loosening the camshaft oil control valve or cam sprocket bolt.




8. Rotate the wing nut on No. 529638 until it contacts the retention tool block. Alternately tighten both wing nuts (on intake and exhaust sides) to retain the chain.

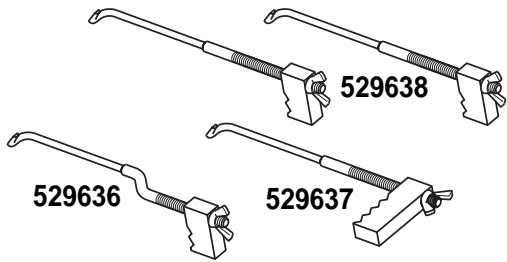


10. Loosen and remove the intake or exhaust oil control valve or cam bolt sprocket.



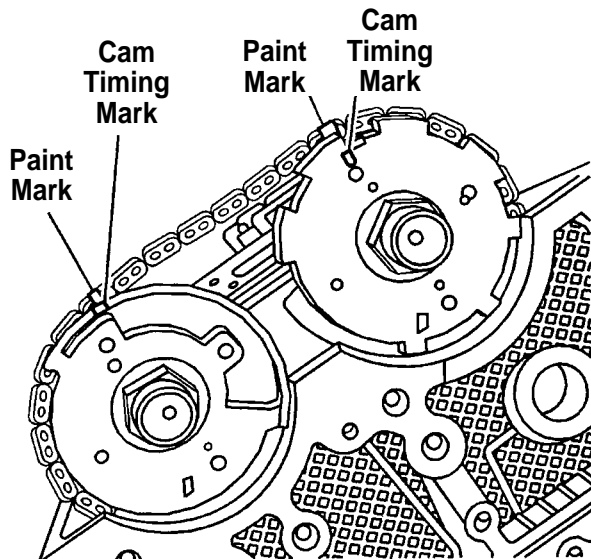
 **CAUTION:** To prevent personal injury, wear eye protection that meets ANSI Z87.1 and OSHA standards.

Nos. 529636, 529637, 529638 Timing Chain Retention Tools contd.

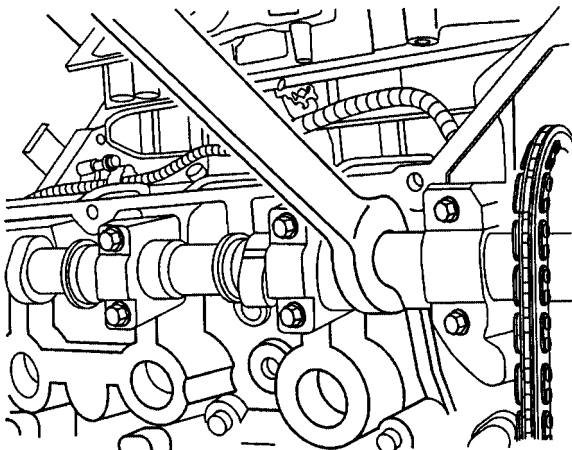


Installation


1. Ensure both camshaft timing marks are aligned with the paint marks on the secondary timing chain that were created during removal.



2. Use an open-end wrench on the hex cast into the right intake camshaft to prevent the camshaft from rotating when tightening the camshaft oil control valve or cam sprocket bolt. Tighten to the vehicle service manual specification.



3. Remove the timing chain retention tools from the timing chains.

 **CAUTION:** To prevent personal injury, wear eye protection that meets ANSI Z87.1 and OSHA standards.