

2011 Chevrolet Cruze LTZ

2011 ENGINE Engine Mechanical - 1.6L (LDE, LLU, Or LXV) Or 1.8L (2H0 Or LUW) - Repair Instructions - On Vehicle - Cruze

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DRIVE BELT REPLACEMENT

SPECIAL TOOLS

EN 6349: Locking Pin

For equivalent regional tools, refer to **Special Tools** .

REMOVAL PROCEDURE

1. Open the hood.
2. Raise the vehicle. Refer to **Lifting and Jacking the Vehicle** .
3. Remove the front compartment splash shield. Refer to **Front Compartment Splash Shield Replacement** .

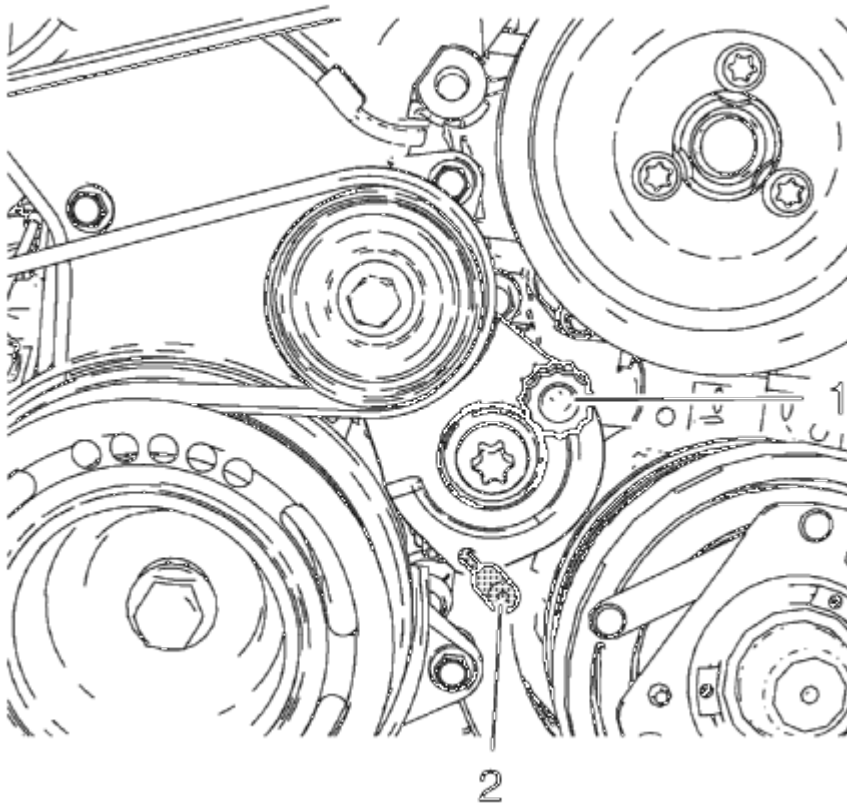


Fig. 1: Drive Belt Tensioner And Special Tool
Courtesy of GENERAL MOTORS CORP.

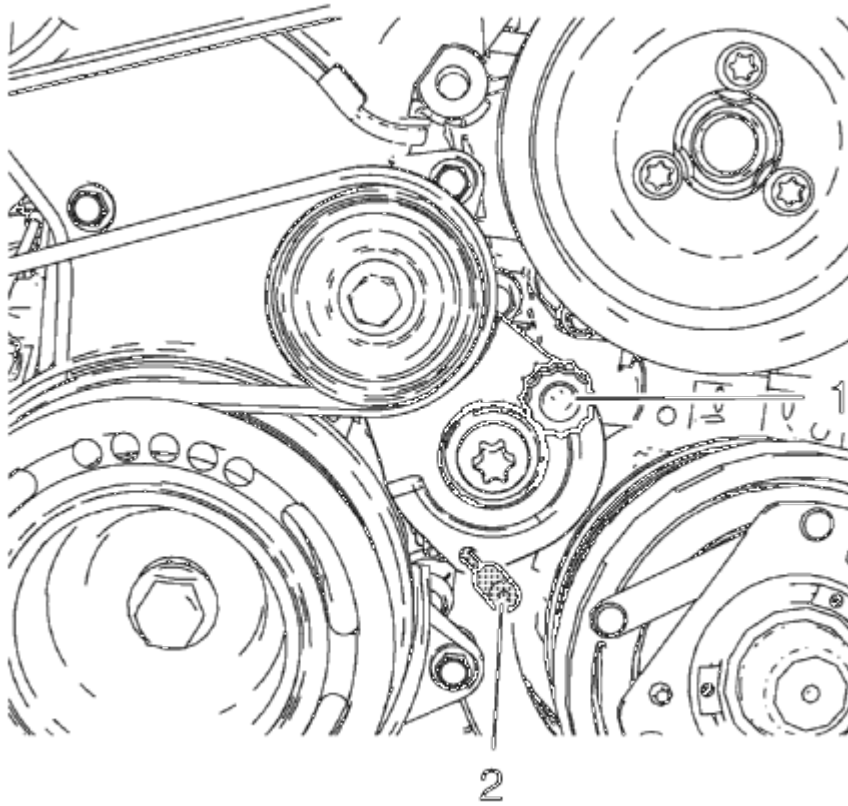


Fig. 4: Drive Belt Tensioner And Special Tool
Courtesy of GENERAL MOTORS CORP.

2. Release tension to the tensioner by rotating counterclockwise (1).

NOTE: Allow tensioner to slide back slowly.

3. Remove **EN 6349:** pin (2).
4. Apply tension to the tensioner clockwise (1).
5. Install the front compartment splash shield. Refer to **Front Compartment Splash Shield Replacement** .
6. Lower the vehicle.
7. Close the hood.

DRIVE BELT TENSIONER REPLACEMENT

REMOVAL PROCEDURE

1. Open the hood.
2. Remove the generator and air conditioning compressor belt. Refer to **Drive Belt Replacement**.

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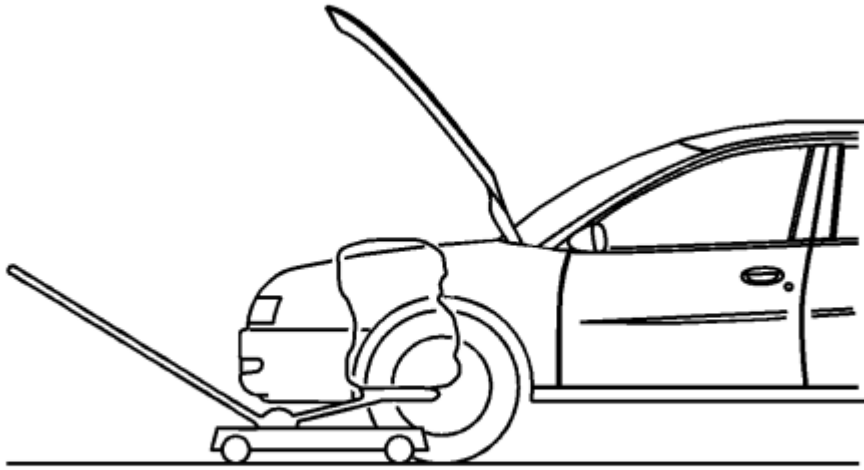


Fig. 10: Supporting Engine/Transmission With Hydraulic Floor Jack
Courtesy of GENERAL MOTORS CORP.

5. Position two floor jacks with wood blocks under the engine and transaxle in order to support the powertrain assembly.

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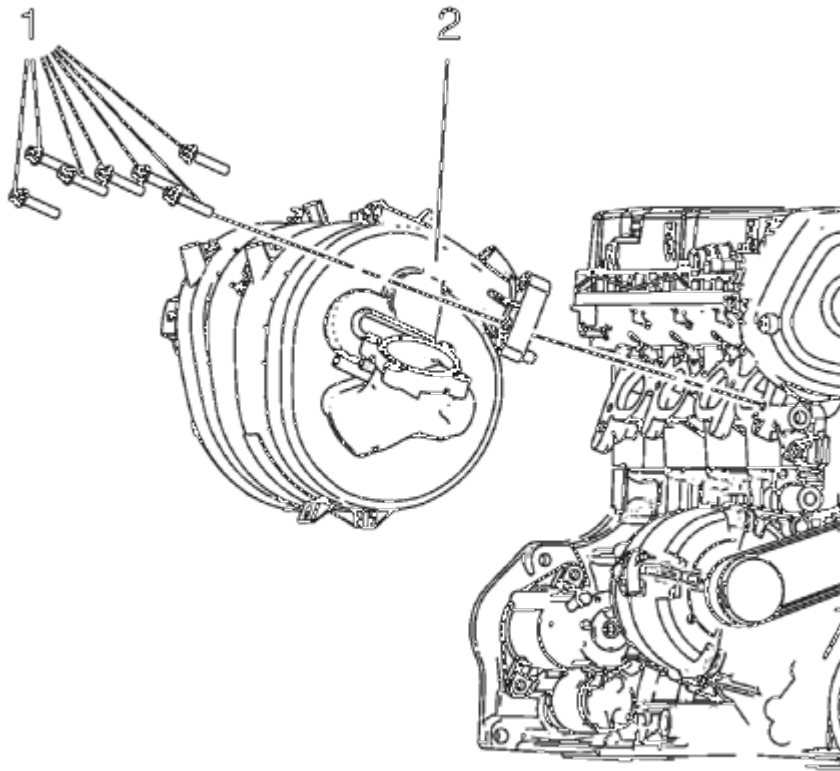


Fig. 28: Intake Manifold

Courtesy of GENERAL MOTORS CORP.

22. Remove the 7 intake manifold bolts (1).
23. Remove the intake manifold (2).

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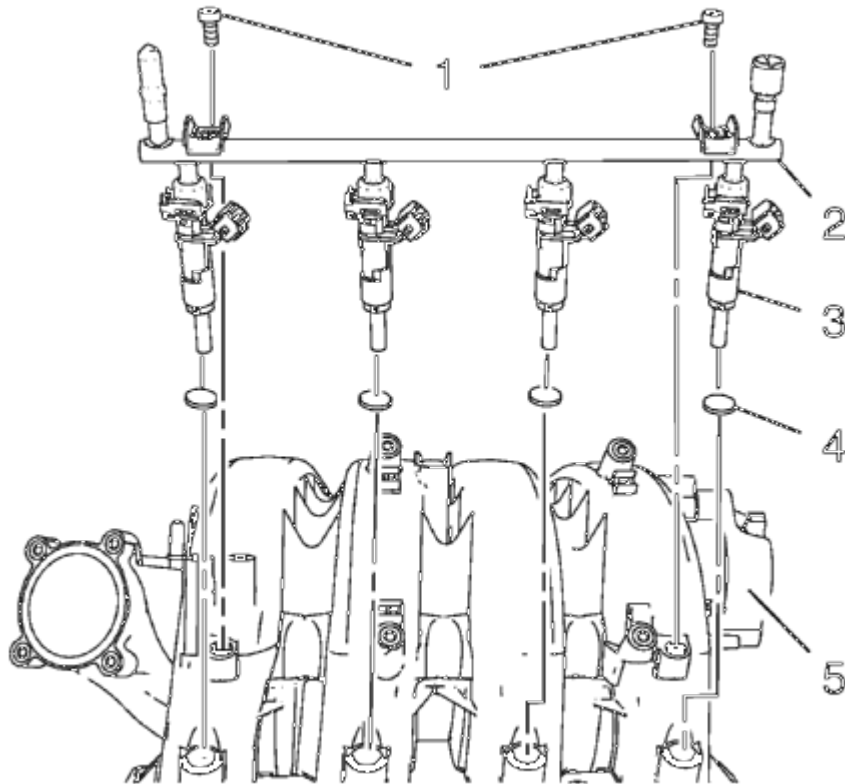


Fig. 37: Intake Manifold, Multiport Fuel Injection Fuel Rail, Fuel Injectors, Seals And Bolts
Courtesy of GENERAL MOTORS CORP.

8. Install the 4 multiport fuel injector seals (4).
9. Install the multiport fuel injection fuel rail (2) and the fuel injectors (3) to the intake manifold (5).
10. Install the 2 multiport fuel injection fuel rail bolts (1) and tighten to 8 N.m (71 lb in).

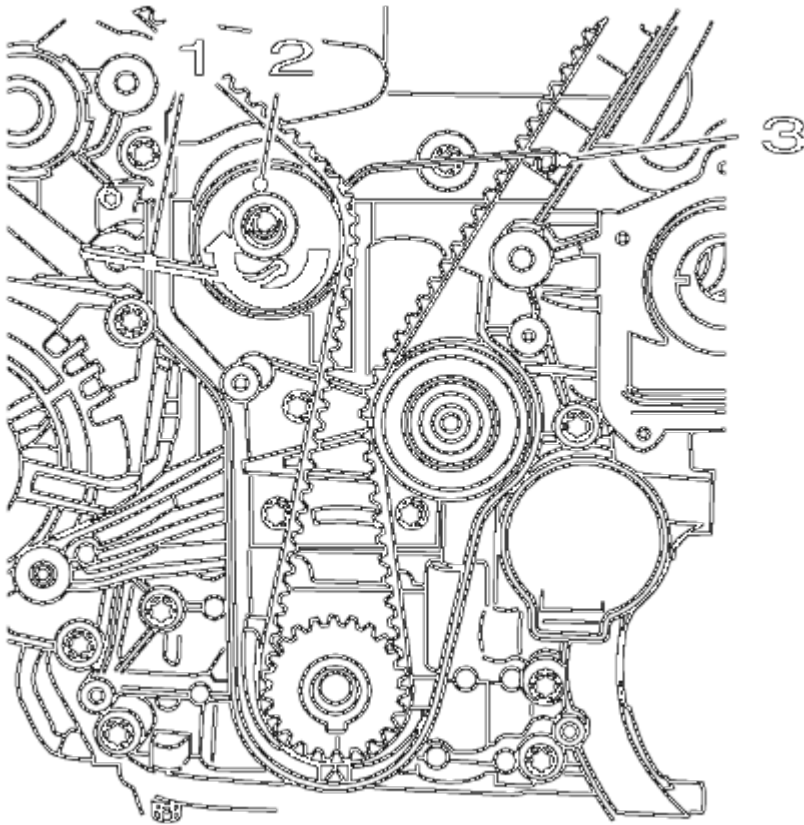


Fig. 52: Timing Belt Tension Roller, Allen Key And Special Tool
Courtesy of GENERAL MOTORS CORP.

8. Apply tension to the timing belt tensioner (2) in the direction of the arrow, using an Allen key (1).
9. Remove the **EN-6333**: locking pin (3).

NOTE: The timing belt tensioner moves automatically to the correct position.

10. Release tension on timing belt tensioner.

CAUTION: Refer to **Fastener Caution** .

11. Tighten the timing belt tensioner bolt to 20 N.m (15 lb ft).

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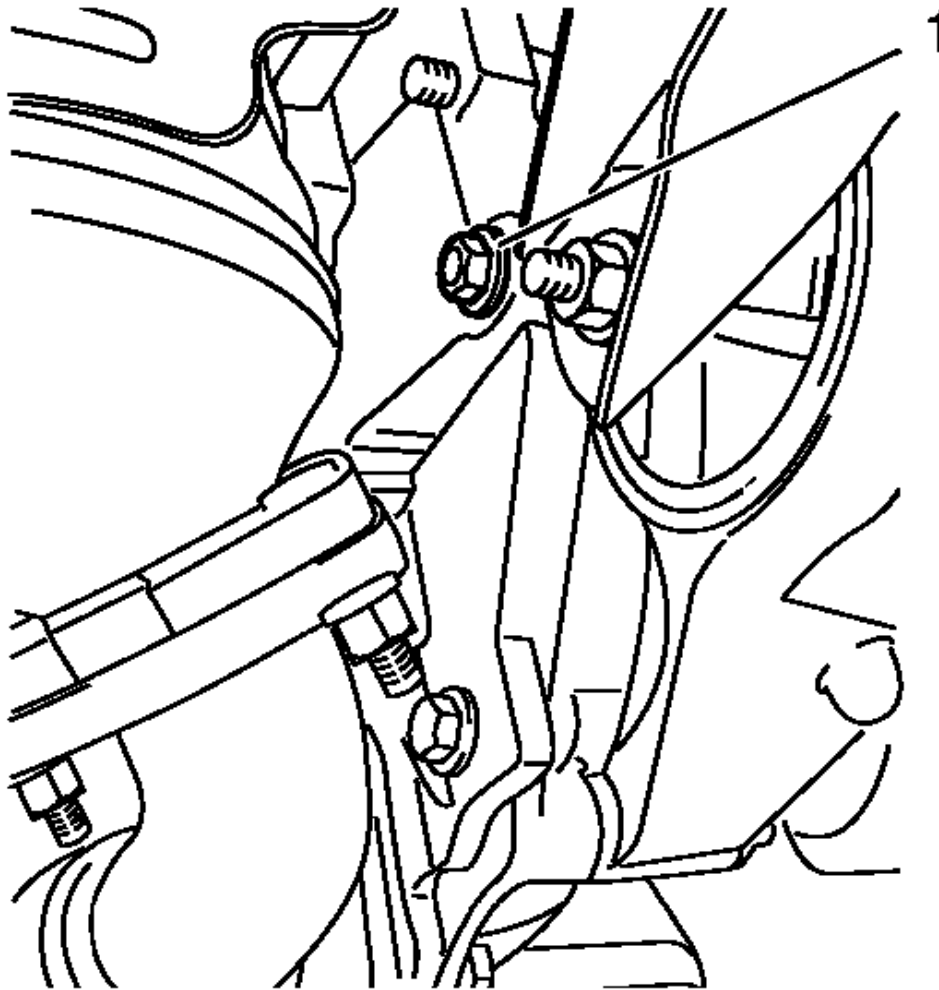


Fig. 66: View Of Bolt

Courtesy of GENERAL MOTORS CORP.

12. Remove the bolt (1).

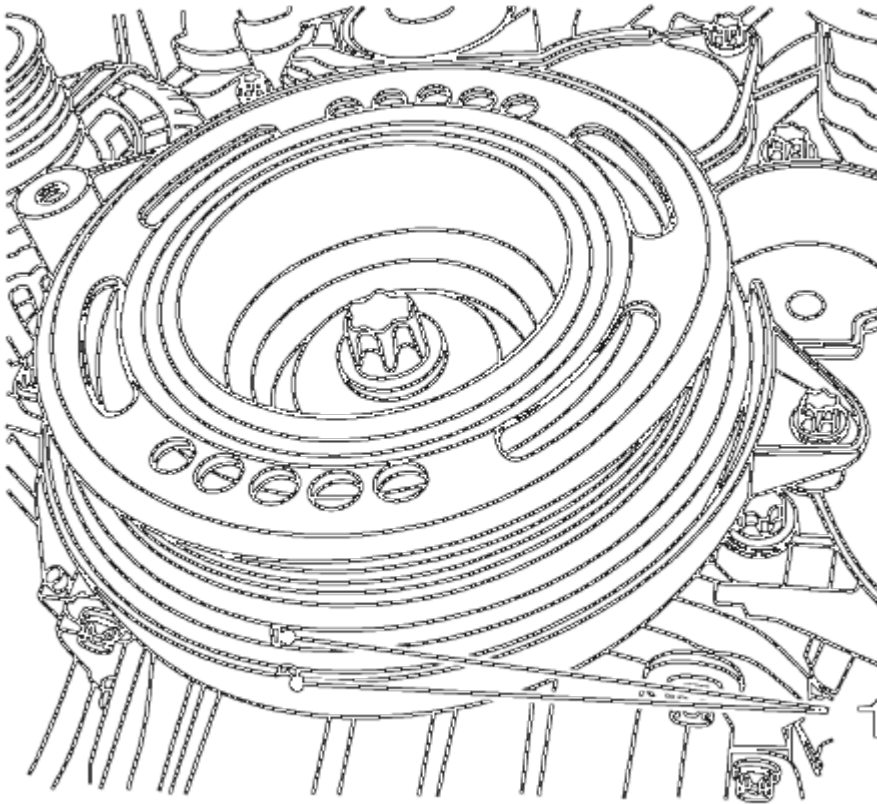


Fig. 75: View Of Crankshaft TDC Position
Courtesy of GENERAL MOTORS CORP.

NOTE: Note the marking at the crankshaft balancer and the cover.

17. Control the crankshaft balancer position.

Markings on torsional crankshaft balancer (1) and lower cover (1) must align.

18. Install the drive belt tensioner. Refer to **Drive Belt Tensioner Replacement**.
19. Install the front compartment splash shield. Refer to **Front Compartment Splash Shield Replacement**.
20. Lower the vehicle.
21. Remove the **EN-6340**: locking tool.
22. Install the timing belt upper front cover. Refer to **Timing Belt Upper Front Cover Installation (1.6L LDE, LXV, 1.8L 2H0, and LUW)**.
23. Install the air cleaner assembly. Refer to **Air Cleaner Assembly Replacement (1.6L LDE, LXV, and 1.8L 2H0)**.

TIMING BELT CENTER FRONT COVER REPLACEMENT

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For equivalent regional tools, refer to **Special Tools** .

REMOVAL PROCEDURE

1. Remove the camshaft. Refer to **Camshaft Replacement**.

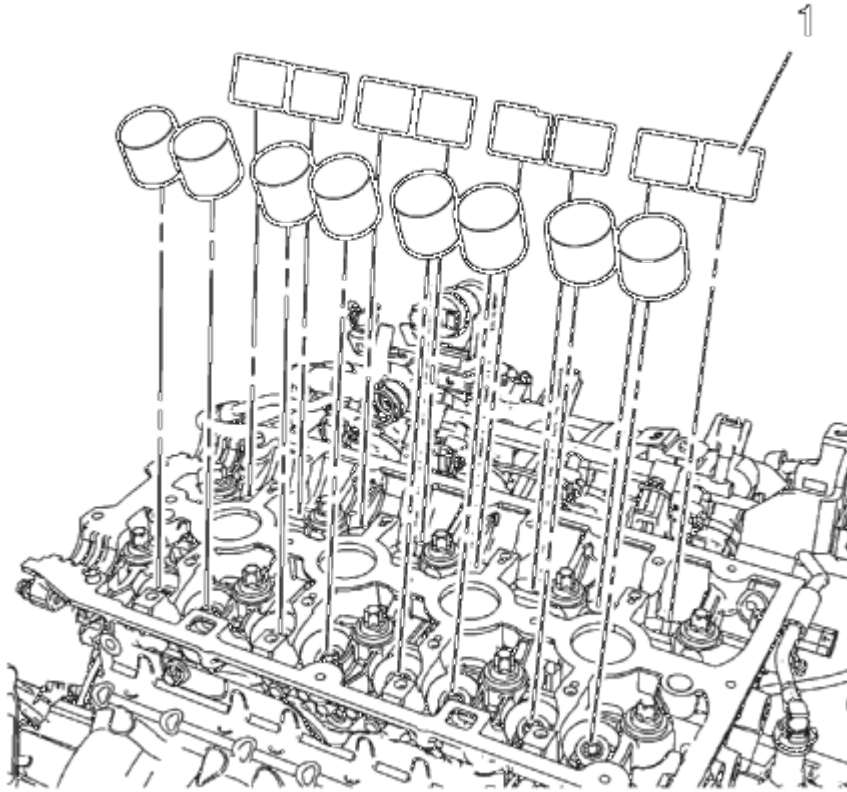


Fig. 89: Valve Lifters

Courtesy of GENERAL MOTORS CORP.

NOTE: Mark the assignments.

2. Remove the 16 valve lifter (1) use the **EN-845**: suction device.

INSTALLATION PROCEDURE

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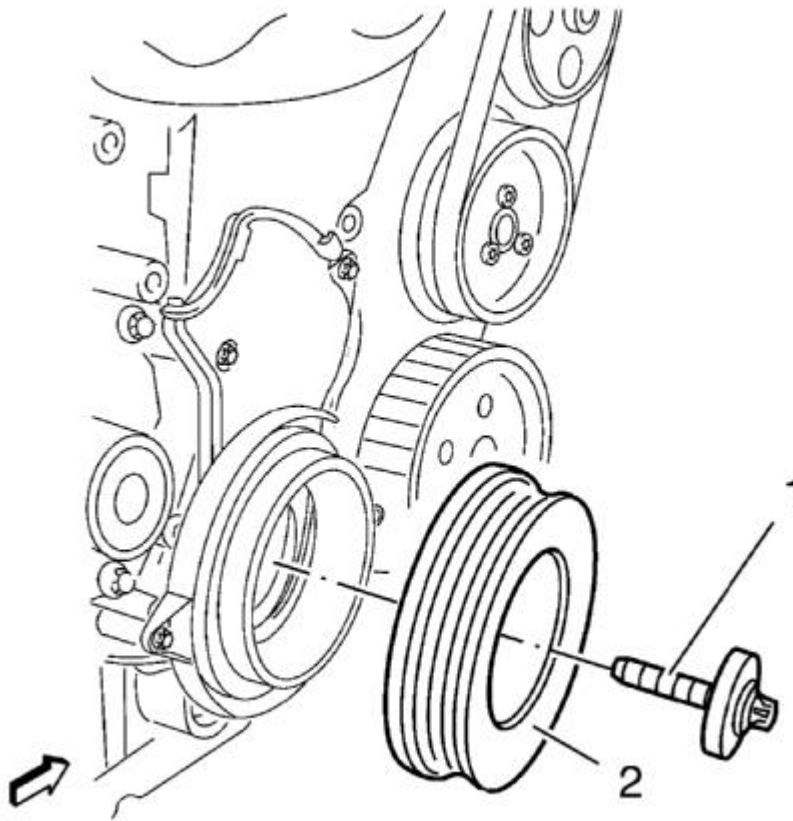


Fig. 100: Crankshaft Balancer And Bolt
Courtesy of GENERAL MOTORS CORP.

8. Remove the crankshaft balancer bolt (1).
9. Remove the crankshaft balancer (2).

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1. Open the hood.
2. Remove the oil dipstick.

NOTE: If the engine oil level is at maximum, some oil may emerge when drawing out the oil dipstick guide tube.

3. Place collecting basin underneath.

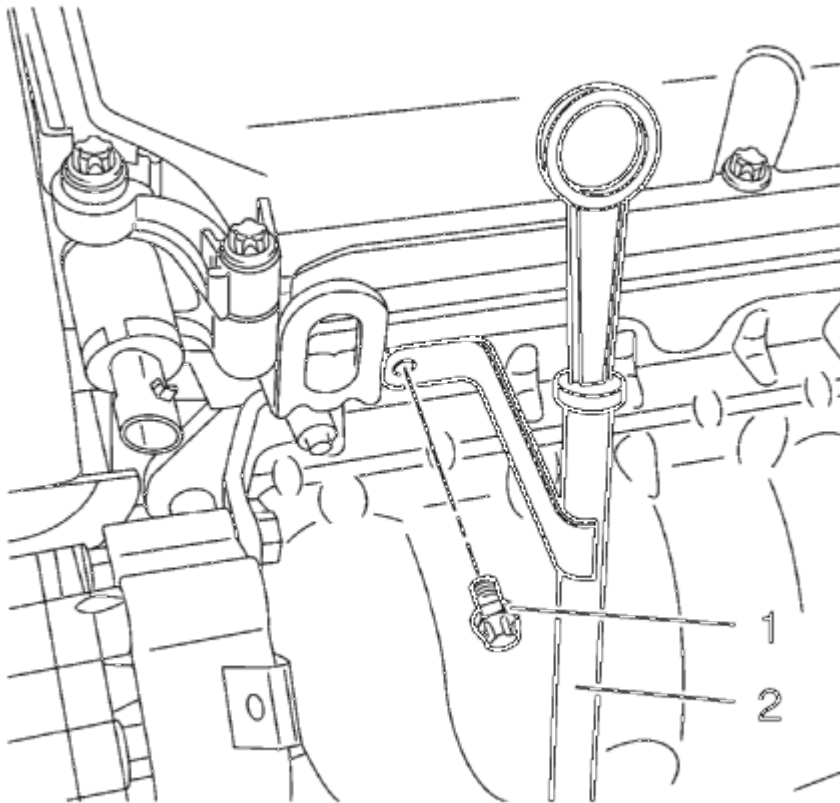


Fig. 114: Oil Level Indicator Tube
Courtesy of GENERAL MOTORS CORP.

4. Remove the oil level indicator tube bolt (1).
5. Remove the oil level indicator tube (2) and the oil level indicator seal.

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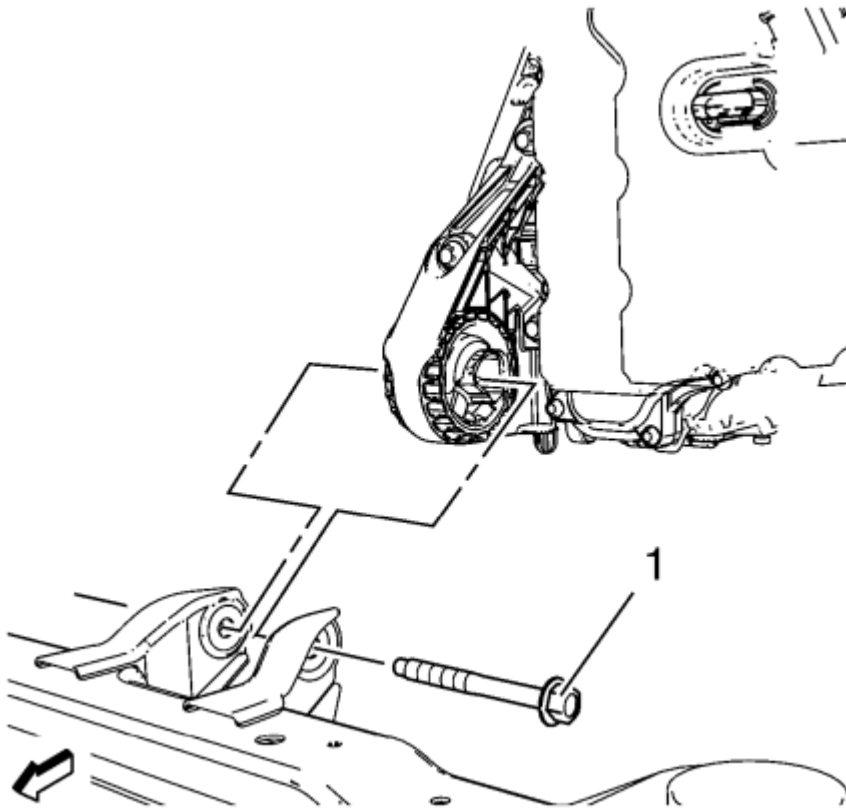


Fig. 131: Automatic Transmission Mount Bracket Through Bolt
Courtesy of GENERAL MOTORS CORP.

33. Remove the transmission front mount through bolt (1).
34. Using suitable straps or chains, secure the front of vehicle to the hoist arms.

NOTE: Use the engine support fixture to slightly raise the powertrain assembly to aid in the removal of the engine and transmission mount bolts.

35. Use the engine support fixture to slightly raise the powertrain assembly to aid in the removal of the engine and transmission mount bolts.

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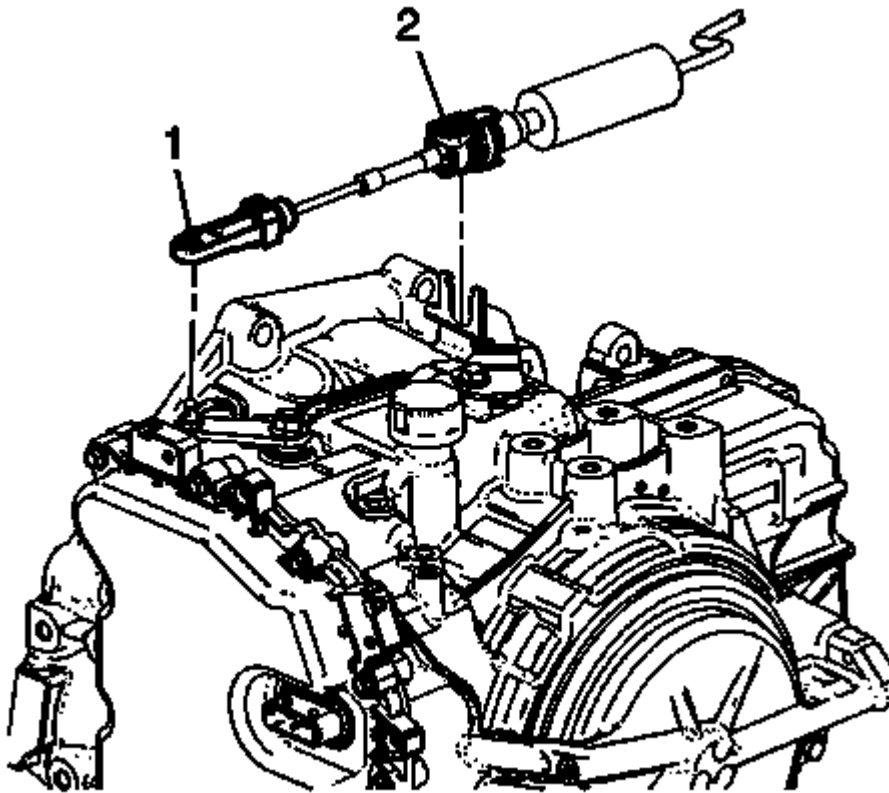


Fig. 142: View Of Transmission Range Selector Lever & Cable Connection
Courtesy of GENERAL MOTORS CORP.

27. On vehicles equipped with a automatic transmission, connect the transmission range selector lever cable terminal (1) to the transmission manual shift lever pin.
28. On vehicles equipped with a automatic transmission, press the locking tabs outward in order to lock the transmission range selector lever cable (2) to the cable bracket.

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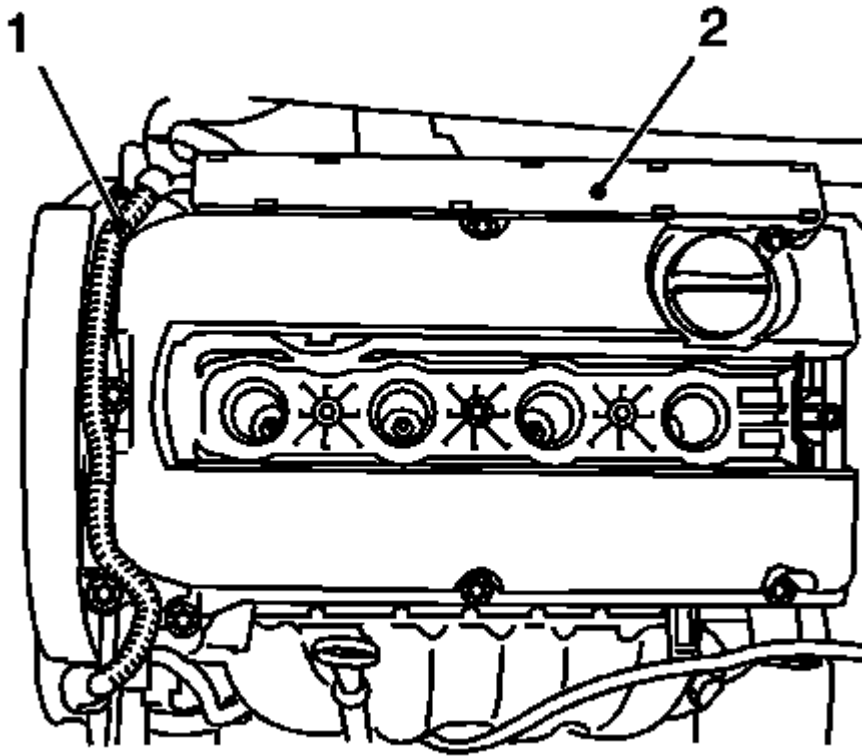


Fig. 158: View Of Wiring Harness And Wiring Trough
Courtesy of GENERAL MOTORS CORP.

4. Clip in the ECM wiring harness guide (1) to the cylinder head cover.
5. Connect the wiring guide (2).
6. Install the ignition coil. Refer to **Ignition Coil Replacement** .
7. Close the hood.

CAMSHAFT POSITION ACTUATOR ADJUSTER REPLACEMENT

Special Tools

- **EN-6340:** Camshaft Adjuster Locking Tool
- **EN-6628-A:** Camshaft Locking Tool
- **EN-45059:** Angle Meter

For equivalent regional tools, refer to **Special Tools**

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25. Attach the **EN-6086-7:** lever arm.

1. Insert the valve springs and valve head.
2. Insert the valve wedges in the **EN-889-2:** assembly head.

NOTE: Insert the valve cotters with the tapered end toward the valve.

-
- Push the plastic clamping sleeve toward the lever arm mounting.
- Push the plastic clamping sleeve toward the valve.

NOTE: Assembly head must stand vertically above the valve stem. Valve cotters must engage audibly.

3. Attach the assembly head to the lever arm.

NOTE: Do not make 2nd attempt without inspecting that both valve cotters are seated in the assembly head.

4. Carefully push the valve spring down using the **EN-889-12:** lever arm.

26. Inspect installation position.

Inspect seating of the valve keepers (visual inspection).

27. Transfer the **EN-6086-15:** pneumatic adapter.

1. Interrupt the compressed air feed.
2. Remove the adapter from cylinder number 1.
3. Install the adapter to cylinder number 4.
4. Apply compressed air to cylinder number 4.

28. Replace the valve stem seal of cylinder 4 by analogy with step 14 - 21.

29. Remove the **EN-6086-15:** pneumatic adapter.

1. Interrupt the compressed air feed.
2. Remove the adapter from cylinder number 4.

30. Raise and support the vehicle.

31. Remove **EN-6625:** holder.

32. Set the crankshaft to ignition TDC of cylinder 3.

NOTE: Alignment marking on toothed belt drive wheel must align with marking on rear toothed belt cover.

33. Turn crankshaft evenly by 180°.

34. Block the crankshaft.