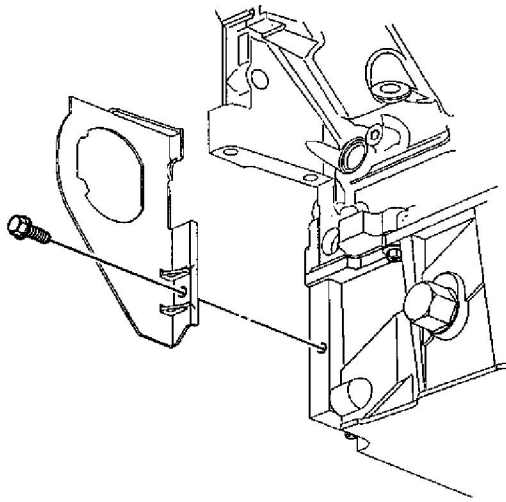


Crankshaft Balancer Replacement (6.2L)

Special Tools

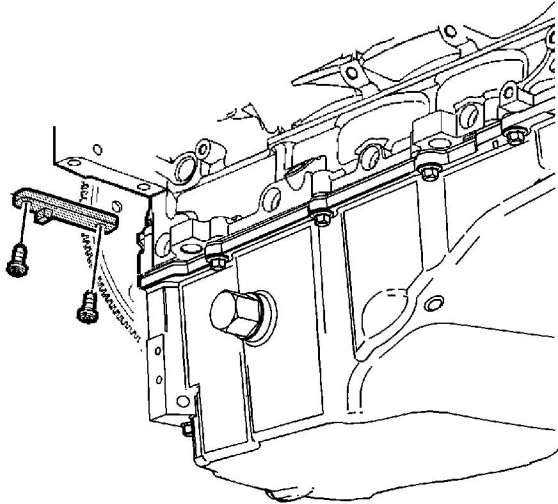
- [J 41816](#) Crankshaft Balancer Remover
- [J 41816-2](#) Crankshaft End Protector
- [J 42386-A](#) Flywheel Holding Tool
- [J 41665](#) Crankshaft Balancer and Sprocket Installer

Removal Procedure



1. Remove the air conditioning (A/C) drive belt. Refer to [Air Conditioning Compressor Belt Replacement](#).
2. Remove the power steering gear. Refer to [Steering Gear Replacement](#).
3. Remove the starter motor. Refer to [Starter Motor Replacement](#).
4. Remove the right transmission cover and bolt.

Caution: Refer to [Fastener Caution](#) in the Preface section.

**Note:**

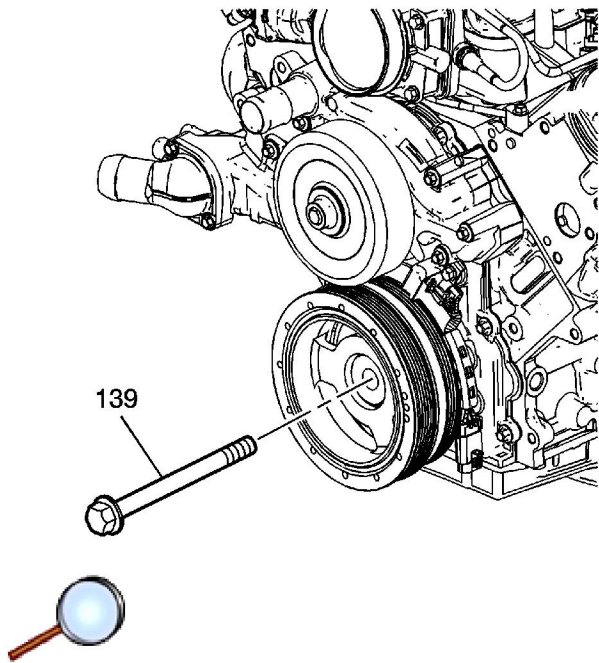
- For manual transmission applications, note the position of the crankshaft balancer before removal. The balancer does not use a key or keyway for positioning. Mark or scribe the end of the crankshaft and the balancer before component removal. The crankshaft balancer must be installed to the original position. If replacing the crankshaft balancer, note the location of any existing balance weights, if applicable. Crankshaft balance weights must be installed into the new balancer in the same location as the old balancer. A properly installed balance weight will be either flush or below flush with the face of the balancer.
- Do not use the crankshaft balancer bolt again. Install a NEW crankshaft balancer bolt during final assembly.

5. Install the [J 42386-A](#) and bolts.

Use one M10 - 1.5 x 120 mm and one M10 - 1.5 x 45 mm bolt for proper tool operation.

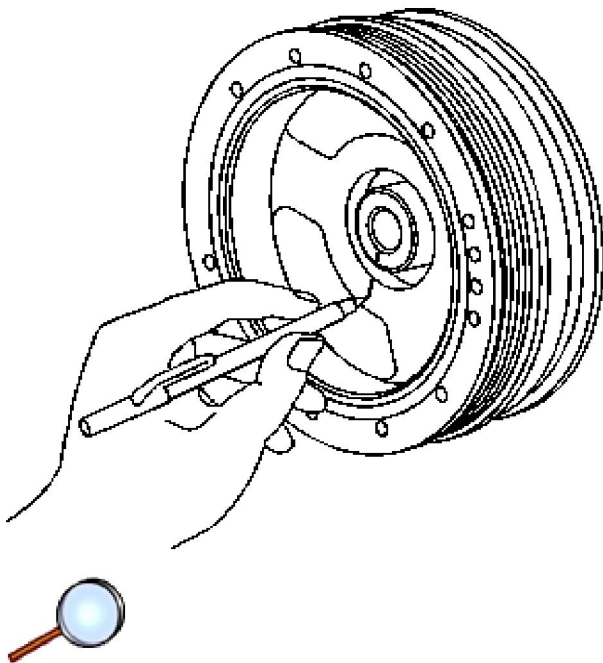
Tighten

Tighten the [J 42386-A](#) bolts to 50 N·m (37 lb ft).

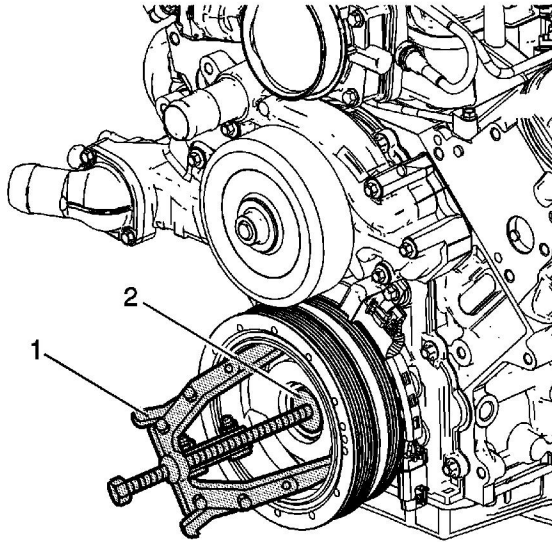


6. Remove the crankshaft balancer bolt (139).

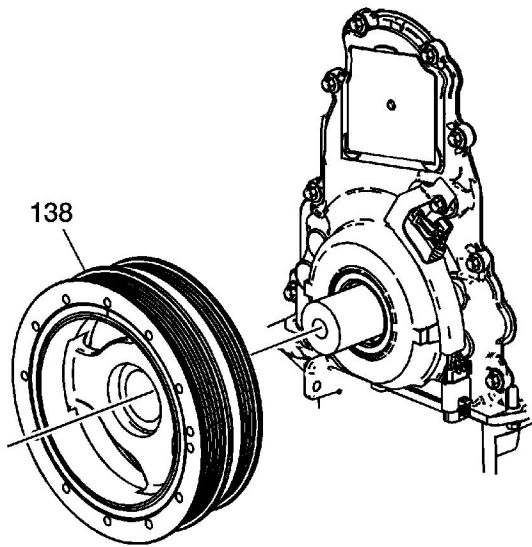
Do not discard the crankshaft balancer bolt. The balancer bolt will be used during the balancer installation procedure.



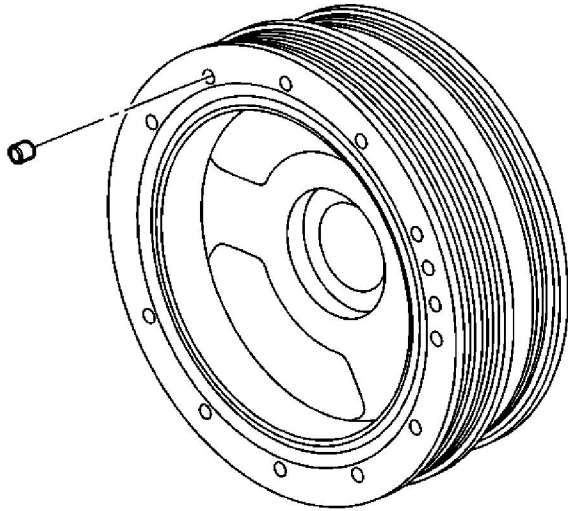
7. Mark or scribe the crankshaft balancer and the end of the crankshaft.



8. Use the [J 41816](#) (1) and the [J 41816-2](#) (2) in order to remove the crankshaft balancer.

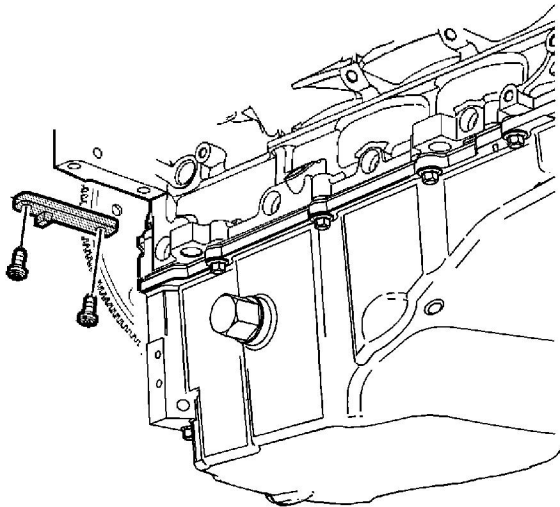


9. Remove the crankshaft balancer (138).



10. Note the position of the crankshaft balance weights, if applicable. Refer to [Engine Balancing](#) and [Crankshaft Balancer Cleaning and Inspection](#).

Installation Procedure



Note:

- For manual transmission applications, note the position of the crankshaft balancer before removal. The balancer does not use a key or keyway for positioning. Mark or scribe the end of the crankshaft and the balancer before removal. The crankshaft balancer must be installed to the original position. If replacing the crankshaft balancer,

note the location of any existing balance weights, if applicable. Install new balance weights into the new crankshaft balancer, if applicable. Crankshaft balance weights must be installed into the new balancer in the same location as the old balancer. A properly installed balance weight will be either flush or below flush with the face of the balancer.

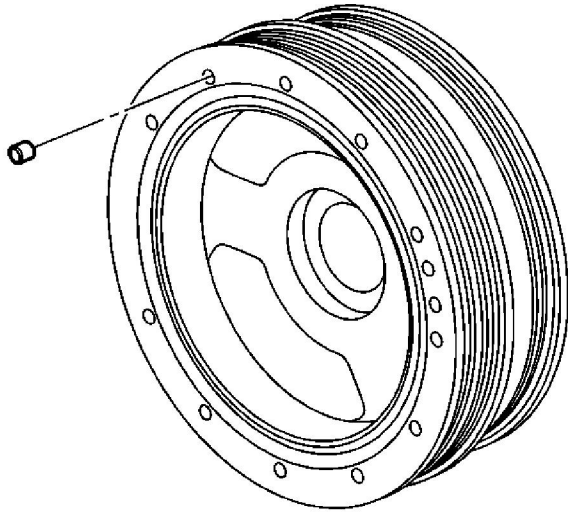
- The crankshaft balancer installation and bolt tightening involves a four stage tightening process. The first pass ensures that the balancer is installed completely onto the crankshaft. The second, third and fourth passes tighten the NEW bolt to the proper torque.
- The used crankshaft balancer bolt is used only during the first pass of the balancer installation procedure. Install a NEW crankshaft balancer bolt and tighten as described in the second, third and fourth passes of the balancer bolt tightening procedure.

1. Install the [J 42386-A](#) and bolts.

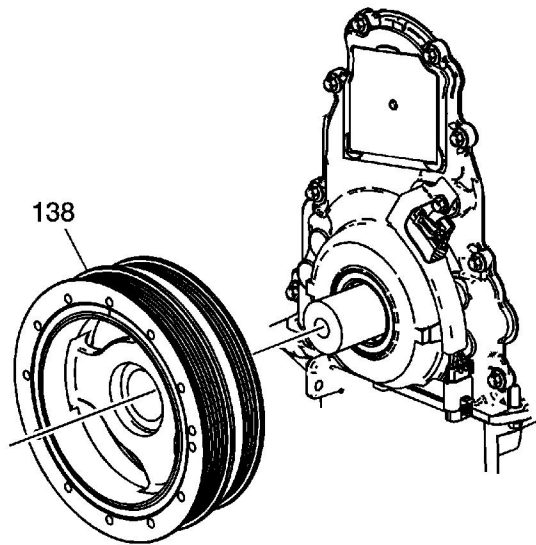
Use one M10 - 1.5 x 120 mm and one M10 - 1.5 x 45 mm bolt for proper tool operation.

Tighten

Tighten the [J 42386-A](#) bolts to 50 N·m (37 lb ft).

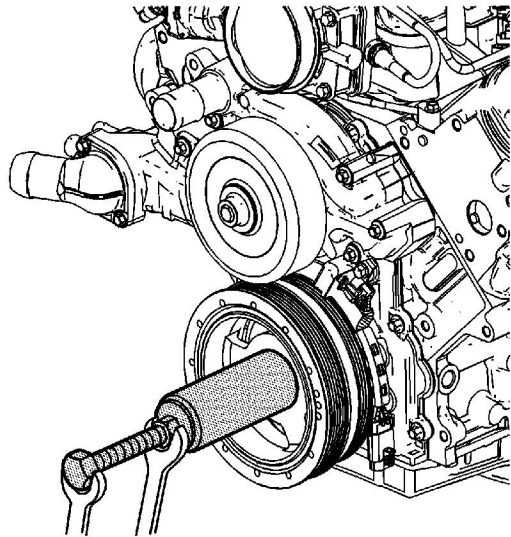


2. Using the old balancer as a reference, mark or scribe the new balancer in the same location, if applicable.
3. Install balance weights into the new balancer, if applicable. Refer to [Engine Balancing](#) and [Crankshaft Balancer Cleaning and Inspection](#).

**Note:**

- The balancer should be positioned onto the end of the crankshaft as straight as possible prior to tool installation.
- A thin washer has been added to the LS2 engine. If the washer is present it does not need to be replaced. If no washer is present, one should be added. (P/N 12598247).

4. Position the balancer (138) onto the end of the crankshaft.



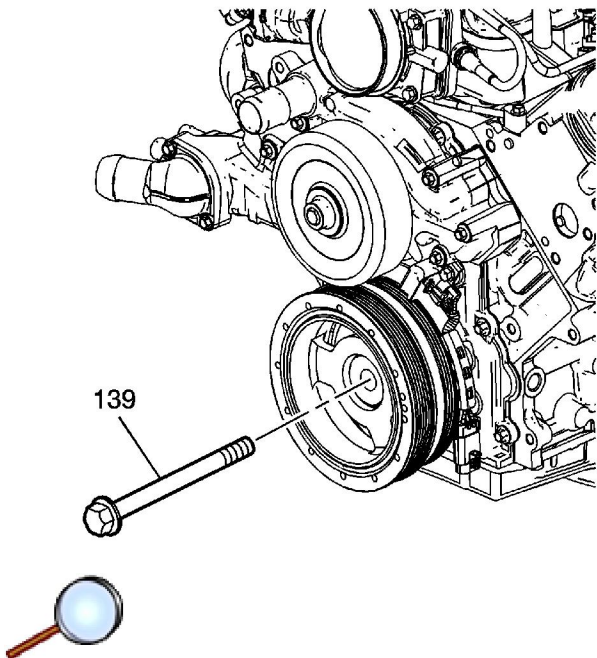
5. Use the [J 41665](#) in order to install the balancer.
 - 5.1. Assemble the threaded rod, nut, washer and installer.

Insert the smaller end of the installer into the front of the balancer.

- 5.2. Use a wrench and hold the hex end of the threaded rod.
- 5.3. Use a second wrench and rotate the installation tool nut clockwise until the balancer is started onto the crankshaft.
- 5.4. Remove the tool and reverse the installation tool.

Position the larger end of the installer against the front of the balancer.

- 5.5. Use a wrench and hold the hex end of the threaded rod.
- 5.6. Use a second wrench and rotate the installation tool nut clockwise until the balancer is installed onto the crankshaft.
- 5.7. Remove the balancer installation tool.

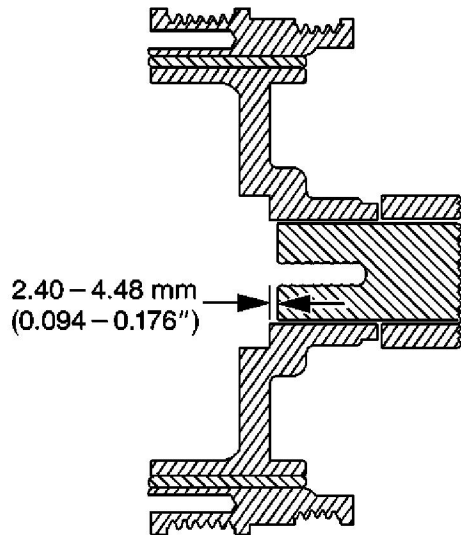


6. Install the used crankshaft balancer bolt (139).

Tighten

Tighten the crankshaft balancer bolt to 330 N·m (240 lb ft).

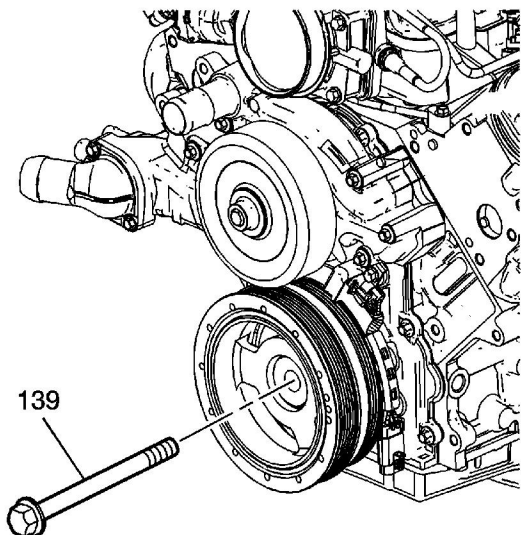
7. Remove the used crankshaft balancer bolt.



Note: The nose of the crankshaft should be recessed 2.4-4.48 mm (0.094-0.176 in) into the balancer bore.

8. Measure for a correctly installed balancer.

If the balancer is not installed to the proper dimensions, install the [J 41665](#) and repeat the installation procedure.



9. Install the NEW crankshaft balancer bolt (139).

Tighten

1. Tighten the crankshaft balancer bolt a first pass to 50 N·m (37 lb ft).
2. Tighten the crankshaft balancer bolt a second pass to 140 degrees using the [J 45059](#) .
10. Remove the [J 42386-A](#) .
11. Install the starter motor. Refer to [Starter Motor Replacement](#).
12. Install the power steering gear. Refer to [Steering Gear Replacement](#).
13. Install the A/C drive belt. Refer to [Air Conditioning Compressor Belt Replacement](#).
14. Perform the crankshaft position (CKP) system variation learn procedure. Refer to [Crankshaft Position System Variation Learn](#).