1. Check service information to determine the specified procedure and special tools needed to inspect and replace the timing chain(s), gears, actuators, guides, and tensioners. List the special tools needed:

Evaluation (Enter number from 4, 3, 2, 1) :\_\_\_\_\_\_\_\_\_

Meets ASE Task: A1 – B-6 – P-1

Time on Task:\_\_\_\_\_\_\_\_\_\_\_\_\_

Make/Model/Year:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

VIN:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**VVT Inspect and Replace Timing Chain(s) and Gears**

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2. Remove the engine front cover following the manufacturer’s procedures.

3. Using the original crankshaft bolt, rotate the engine until the crankshaft gear is in the desired location.

4. Verify the timing marks on the variable cam actuators are in the correct location.

5. Inspect the chain(s), gears, actuators, guides, and tensioners for wear.

6. Based on the inspection, what components need to be replaced?

7. Install the replacement timing chain(s), gears, actuators, guides, and tensioners. Check that the timing marks align.

8. Reassemble the front of the engine and torque all fasteners to factory specifications.

![Diagram, engineering drawing

Description automatically generated]()