1. Remove all coolant and engine oil from the engine. Clean the engine with degreaser and/or a pressure washer. Install the engine on an engine stand.

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

Meets ASE Task: A1 – C-3 – P-2

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

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

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

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

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

**Engine Disassembly**

2. Remove the exhaust and the intake manifolds.

3. Remove the cylinder head(s) being certain to follow the torque table backwards starting with the highest number and working toward the lowest number to help prevent warping the cylinder head.

4. Remove the harmonic balancer and timing chain cover.

5. Remove the timing chain and camshaft.

6. Remove the oil pan (replace all pan bolts back into the block rails to prevent loss if possible).

7. Remove the oil pickup and pump (if in the oil pan).

8. Mark the connecting rods if not already marked from the factory or during a previous service.

9. Remove the ridge:

1. Install the tool into the cylinder and position the piston properly so that enough threads will be above the tool to cut the entire ridge.
2. Expand the tool to the proper bore size.
3. Locate the cutter blade slightly below the ridge and tighten the lock screw.
4. Apply the spring tension to the cutter blade.
5. Cut the ridge.
6. Stop cutting as soon as the ridge has been removed to avoid tapering the top of the bore.
7. Remove the chips from the cylinder.

10. Remove the pistons and the rods (keep the rod caps together).

11. Remove the crankshaft.

12. Clean the engine block and all other parts.