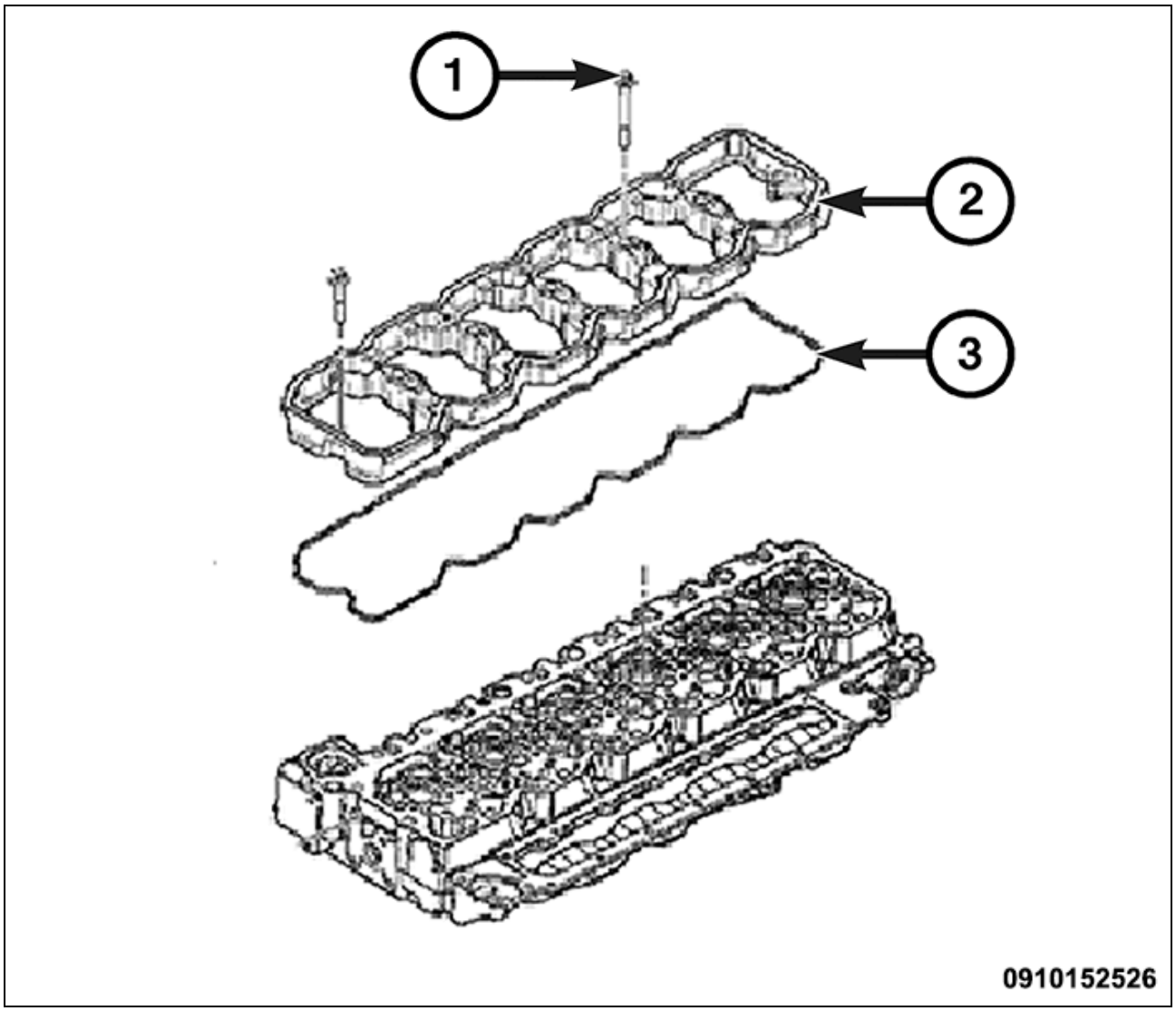

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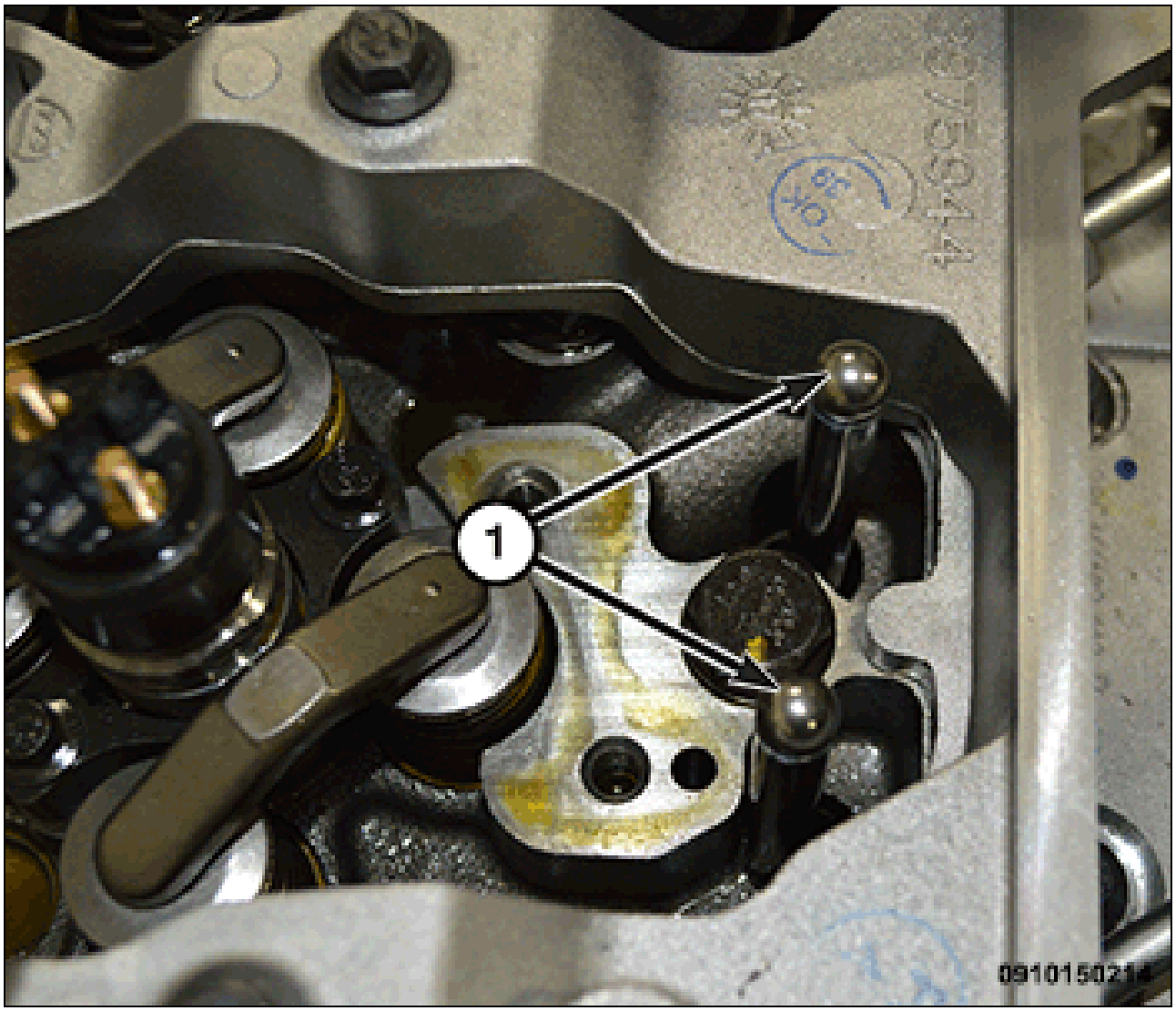
15. Install the rocker housing (2) and tighten the bolts (1) finger tight. Working from center out, tighten bolts (1) to proper specifications. Refer to TORQUE SPECIFICATIONS .



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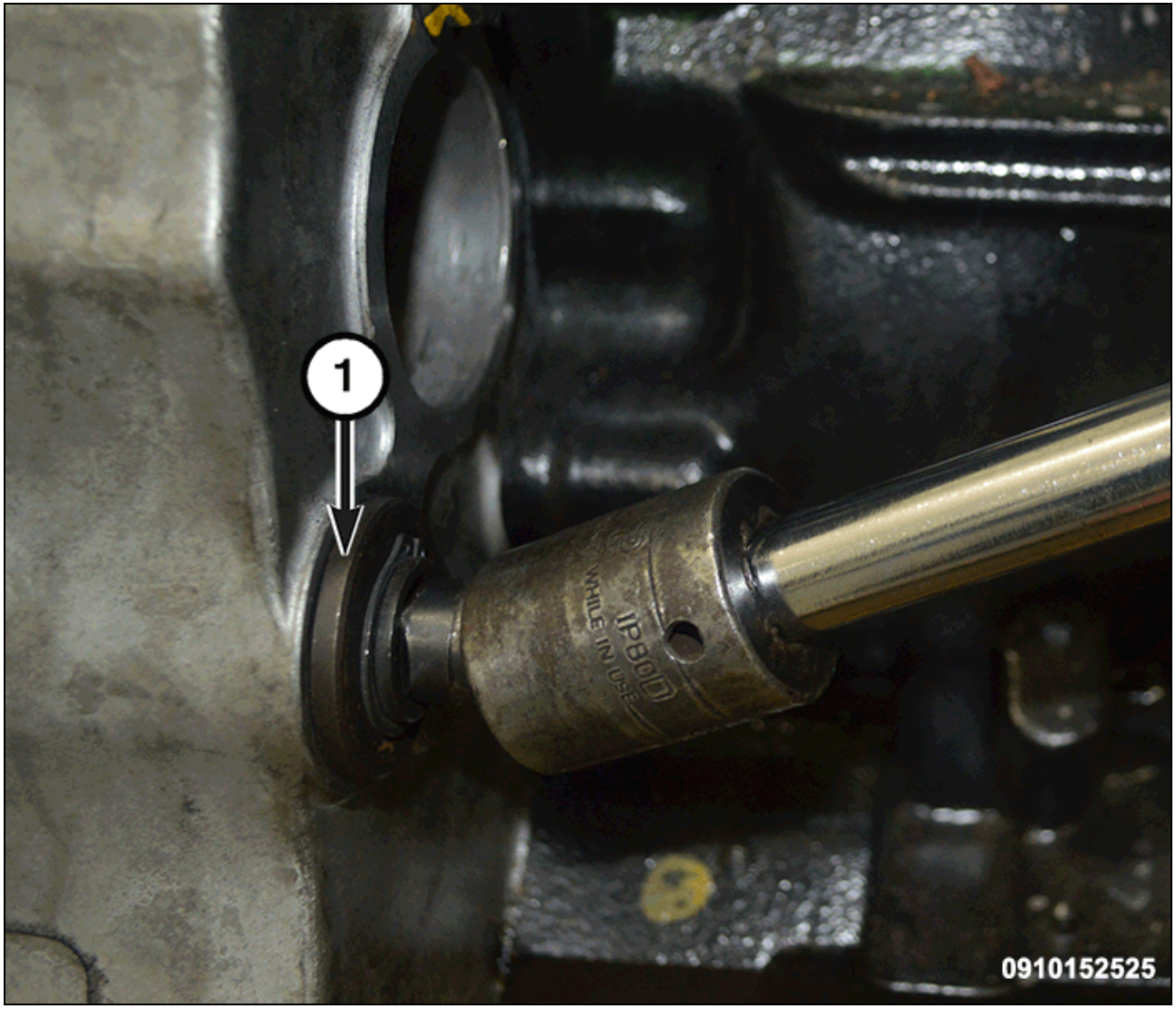
16. Lubricate the push rods (1) with engine oil and install in their original location. **Verify that they are seated in the lifters.**



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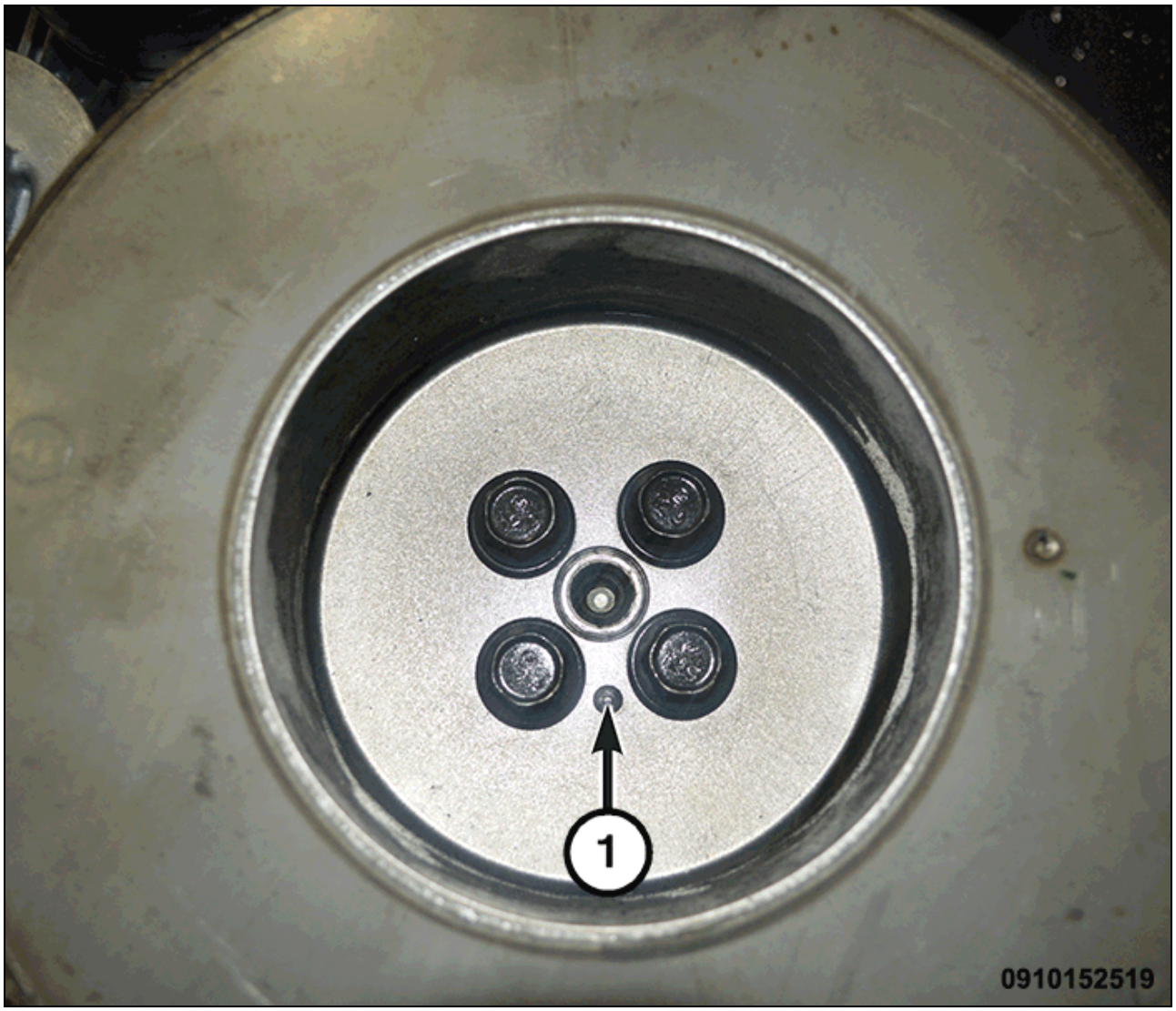
17. Using the Barring Tool (special tool # 7471B, Barring Tool) (1) or equivalent, rotate the crankshaft until the engine is at Bottom Dead Center (BDC).



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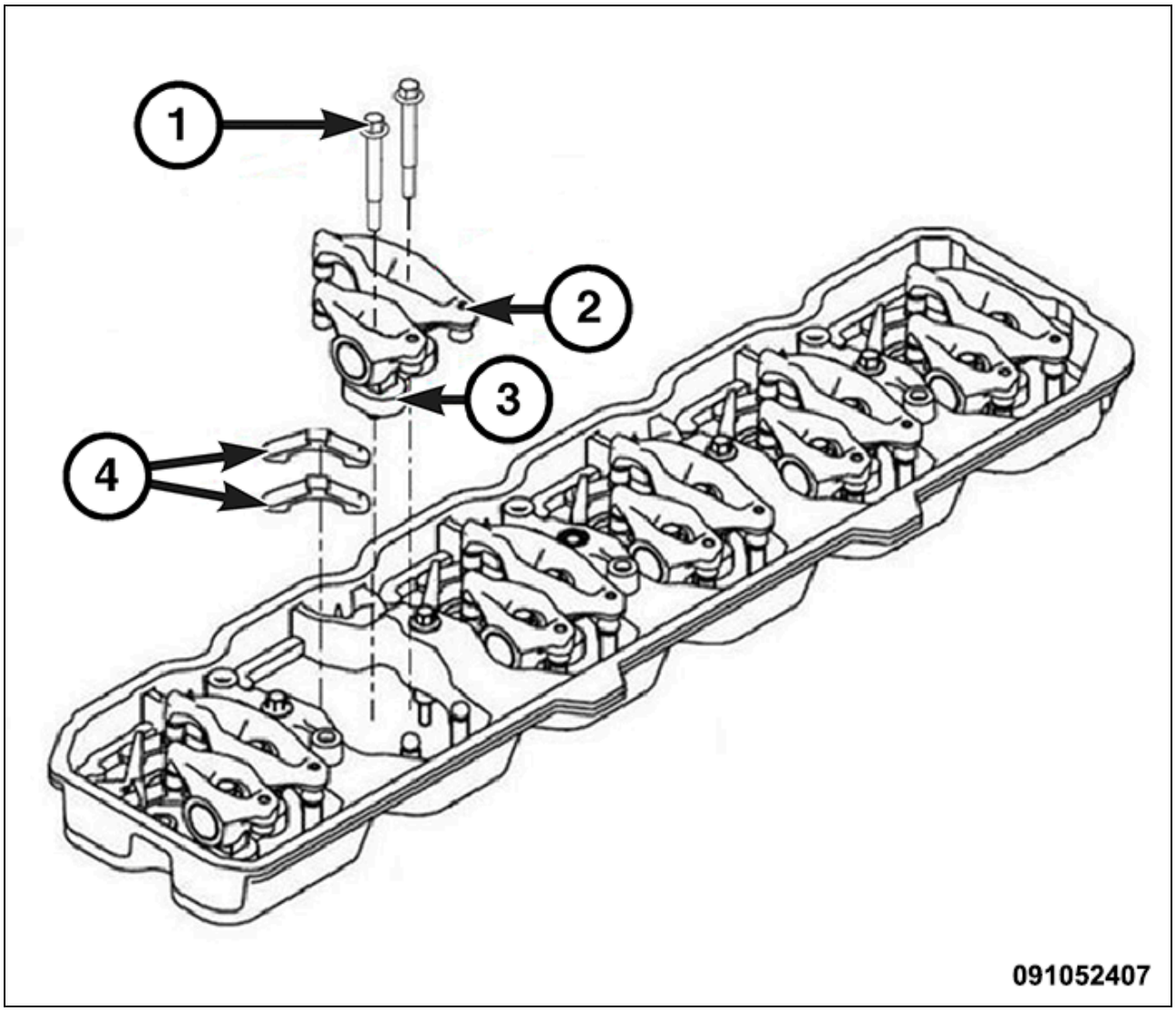
18. The engine is at BDC when the Top Dead Center (TDC) mark on the damper is aligned to the 6:00 o'clock position and is visible from underneath the vehicle or the alignment pin (1) is at the 6:00 o'clock position.

CAUTION: *Before installing the rocker arms, the engine must be at bottom dead center (BDC). Failure to rotate the engine to bottom dead center will result in valve to piston contact when the rocker arms are installed.*

CAUTION: *The rocker arm pedestal mounting bolts must be torqued down in stages to allow adequate time for the hydraulic lifters to bleed down before performing the final installation torque. Failure to allow the lifters to bleed down before applying the final installation torque on the rocker pedestals will cause the valve springs to coil bind, which will weaken the springs and result in valve spring failure.*



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19. Lubricate the valve tips with engine oil and install the crossheads (4) in their original locations.
20. Lubricate the top crossheads (4) and push rod balls and install the rocker arms (2) with pedestals (3) in their original locations.

NOTE: *The push rod balls must be fully seated in the rocker arm cups and hydraulic lifters prior to starting the pedestal bolt torque procedure. This can be verified by slowly rotating the push rod - it should rotate smoothly without binding or excessive force required.*

NOTE: *Engine temperature must be above 50°F (10°C) to perform the rocker torque procedure.*

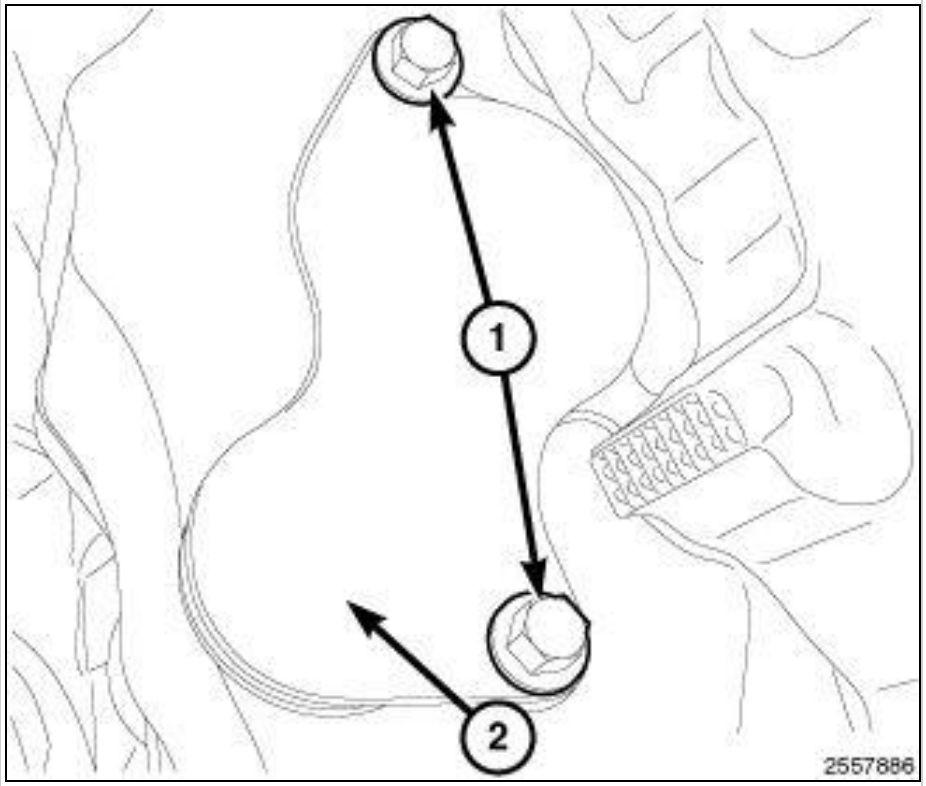
21. Tighten the pedestal bolts (1) as follows:
    1. Tighten the bolts to 7 N.m (62 in. lbs.).
    2. Allow the hydraulic lifters 15 minutes to initially bleed down. During this time frame, do not rotate the crankshaft or perform any further tightening on the pedestals.
    3. Tighten the bolts to 36 N.m (27 ft. lbs.).
    4. After performing the final torque, allow the hydraulic lifters 45 minutes to finish bleed down before rotating or starting the engine. The remaining items that were removed can be installed during this time period.
22. Using the Barring Tool (special tool # 7471B, Barring Tool) (1) or equivalent, rotate the crankshaft two revolutions (720 degrees). If the hydraulic lifters are sufficiently bled down, the crankshaft will rotate freely. If the crankshaft does not rotate freely, verify that the stepped rocker torque procedure (step 21) was followed correctly and sufficient hydraulic lifter bleed down time was allowed.

CAUTION: *Valve to piston contact will occur if the hydraulic lifters are not properly bled down before the engine is rotated or started.*

CAUTION: *To prevent damage to valve assemblies, do not run the engine above idle until all hydraulic lifters have filled with oil and*

have become quiet.

NOTE: *The hydraulic lifters will make noise until they have filled with oil.*



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23. Install the bell housing access cover (2) and tighten the bolts (1) to the proper specifications. Refer to TORQUE SPECIFICATIONS .
24. Install the cylinder head cover. Refer to COVER (S), CYLINDER HEAD, REMOVAL AND INSTALLATION, 6.7L .