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TECHNICAL BULLETIN		Mfg:
	March 2009	Model:
	TB 2516	Liter:
		V I N:
		Year:

Turbocharger Failure On
2001-2009 GM 6.6L Duramax Diesel Engines

The AREA Technical Committee offers the following considerations while diagnosing turbocharger failure on 2001-09 GM 6.6L Duramax diesel engines. The engines affected are identified by engine VIN codes D, 1, 2, 6 with production codes RPOs LBZ, LB7, LLY and LMM.

It is important to Note: Before installing a new turbocharger, clean any debris or excessive oil from the charge air cooler and intake system in order to prevent damage to the new turbocharger or an engine over-speed condition.

If a turbocharger performance concern is thought to be caused from a deficiency of engine oil, the camshaft bearing should be checked. The number 4 camshaft bearing bore feeds the turbocharger engine oil supply hose. If this camshaft bearing spins or moves in the bore, the turbocharger will be deprived of engine oil. This will cause a great performance concern with the turbocharger. Incorrect diagnosis of this condition will result in a repeat performance concern with the turbocharger.

Camshaft Bearing Inspection

If the turbocharger has to be replaced, perform the following procedure in order to verify the condition of the number 4 camshaft bearing before installing a new turbocharger.

1. Remove the turbocharger.

Turbocharger Replacement.

2. Remove the turbocharger oil supply hose.
3. Visually inspect for correct alignment of the number 4 camshaft bearing oil hole (Refer to illustration callout 4) through the turbocharger oil supply hole in the block (Refer to illustration callout 1). The camshaft journal oil groove (Refer to illustration

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callout 3) should be visible through the camshaft bearing oil hole (Refer to illustration callout 4).

4. Turn the engine over by hand a 1/2 turn. The camshaft journal oil groove (Refer to illustration callout 3) should still be visible through the camshaft bearing oil hole (Refer to illustration callout 4) as the engine is turned.

5. If the camshaft bearing has spun (Refer to illustration callout 2), the camshaft bearing oil hole (Refer to illustration callout 4) will either not be visible at all or it will be misaligned with the turbocharger oil supply hole during the inspection procedure. In the event of a spun camshaft bearing, the engine must be repaired.

Restricted Turbocharger Oil Supply Hose

If a lack of oil is suspected, the turbocharger oil supply hose should also be checked for damage. The turbocharger oil feed line is a high pressure plastic tube that is protected by a stainless steel braided covering. If it is twisted at all or bent too far during turbocharger removal, the plastic line may fold and kink. The kink may cause an oil flow restriction. If the plastic pipe does kink, it will not return back to its normal size and shape. The damage may not be obvious upon inspection because the braided steel covering will hide the deformity. Be sure to check the Turbo oil return passages to make sure it is fully open with no restrictions back to the oil pan.

LB7 Turbocharger Replacement

During turbocharger removal on the 6.6L LB7 engine, the turbocharger oil feed line can be pulled directly away from the turbocharger body in a perpendicular fashion. Care must be taken to avoid excessive bending of the line.

LBZ, LLY or LMM Turbocharger Replacement

During repairs on the 6.6L LBZ, LLY or LMM engine, the EGR cooler does not allow enough perpendicular movement of the line to clear the turbocharger for removal. However, the line can be pushed straight forward of the turbocharger with less risk of kinking the line. Assistance may be required to keep the lines clear of the turbocharger during removal or installation.

Notice: Do not twist the turbocharger oil supply line. Twisting of the line will result in the collapse and deformation of the plastic line, restricting oil flow and causing turbocharger performance concerns.

The AERA Technical Committee

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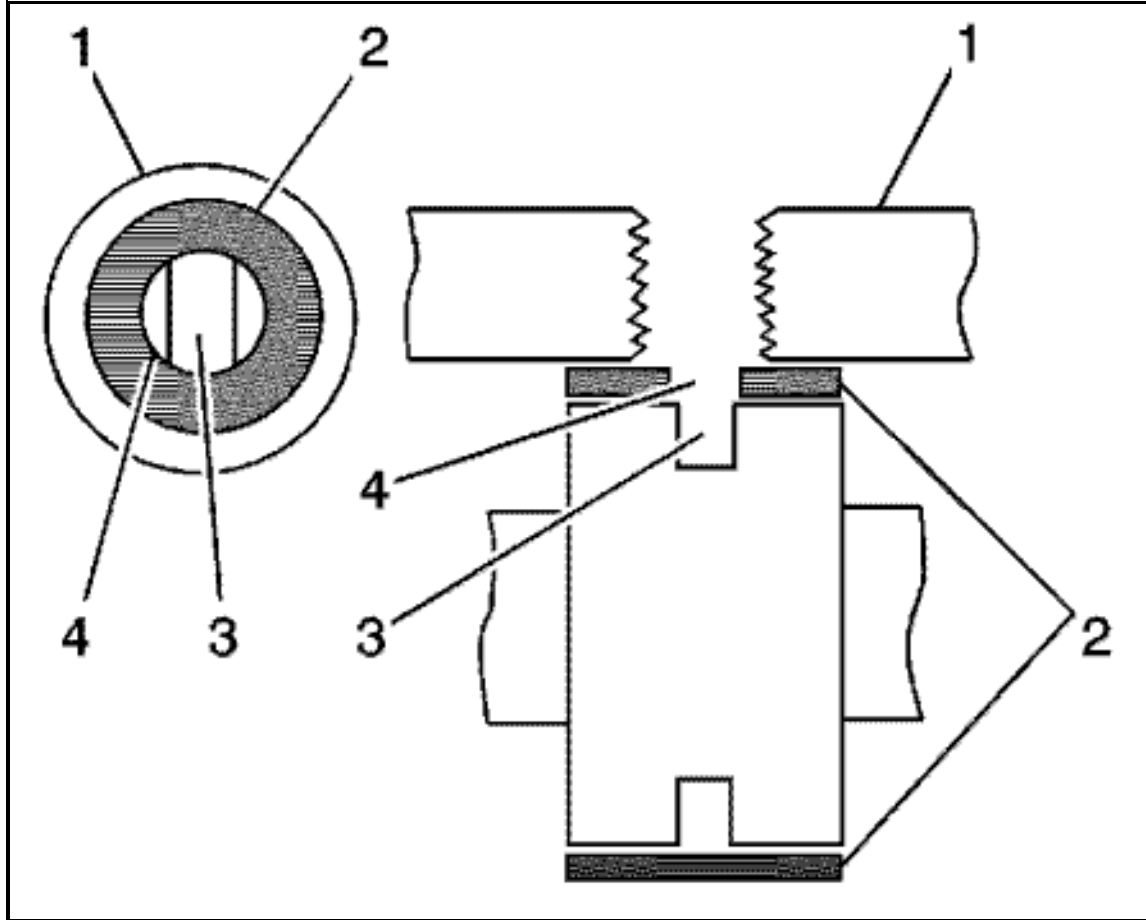
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Bulletin Diagram: FIGURE 1. CAMSHAFT BEARING OIL HOLE ALIGNMENT
#4 - CYLINDER BLOCK



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