Service Bulletin

File in Section: 06 - Engine
Bulletin No.: 14-06-01-002A
Date: December, 2014

TECHNICAL

Subject: **Crankshaft Rear Oil Seal — Oil Leak**

Models: **2012-2013 Buick Enclave, LaCrosse**
2012-2013 Cadillac CTS, SRX
2013 Cadillac ATS, XTS
2012-2013 Chevrolet Camaro, Captiva, Equinox, Impala, Traverse
2012-2013 GMC Acadia, Terrain
Equipped with 6 CYL, 3.0L — RPO LFW
Equipped with 6 CYL, 3.6L — RPO LFX or LLT

This Bulletin has been revised to add certain Model Year 2012 vehicles, change the Special Tool in Step 6 to GE-6125-1B, change the Special Tool in Step 18 to EN-45059-A and to remove the Build Breakpoint date. Please discard Corporate Bulletin Number 14-06-01-002.

Condition

Some customers may comment on an engine oil leak under their vehicle.

Upon inspection, the Service Technician may observe an engine oil leak between the engine and transmission mounting surfaces.

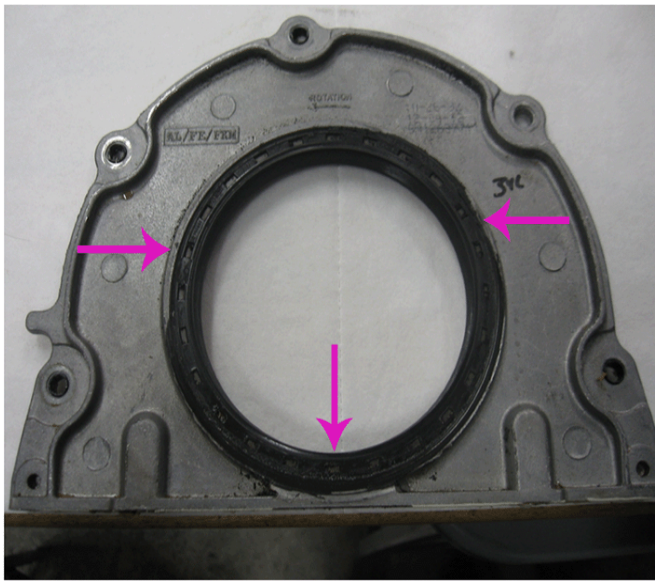
Cause

This may be caused by the crankshaft #3 thrust bearing wing separating from the thrust bearing, resulting in excessive crankshaft end play and damaging the crankshaft rear oil seal and housing.

Correction

The Service Technician can check for excessive crankshaft end play by removing the accessory drive belt and checking for excessive crankshaft movement. Use a pry tool on the crankshaft pulley/dampener, being careful not to damage the crankshaft front cover seal.

⇒ If excessive crankshaft end play is observed, the engine oil pan will have to be removed for further diagnosis of the crankshaft #3 thrust bearing. Go to Step 1.



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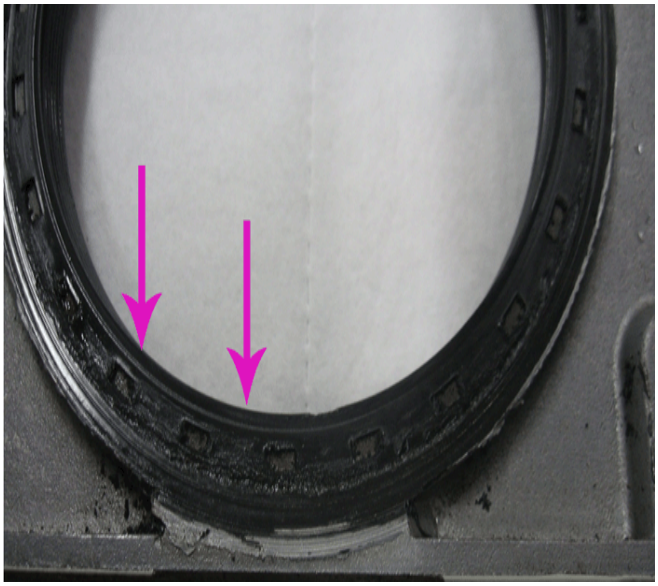

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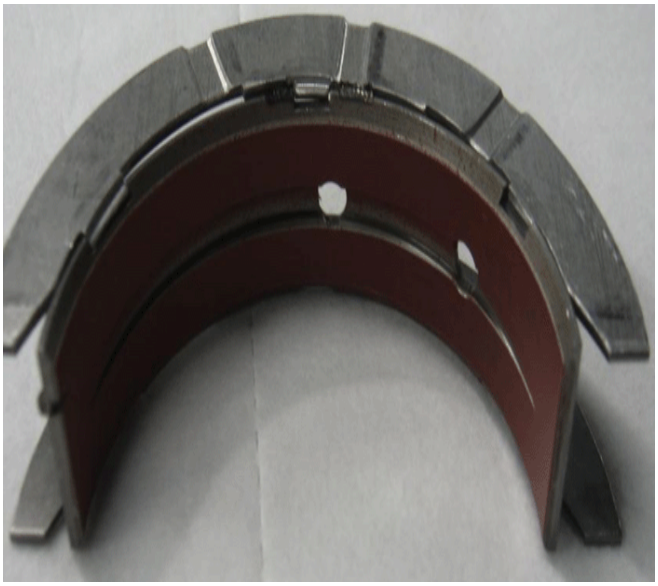
Another check that can be performed if the transmission has been removed for crankshaft rear oil seal and housing replacement, is to inspect the crankshaft rear oil seal and housing for friction rub marks.

⇒ If the crankshaft rear oil seal and housing display friction rub marks, the engine oil pan will have to be removed for further diagnosis of the crankshaft #3 thrust bearing. Go to Step 1.

Notice: **The Crankshaft Rear Oil Seal Housing Replacement, Engine Oil Pan Replacement, Engine Front Cover Replacement and Transmission Replacement procedures vary from vehicle to vehicle. It is critical that the Service Technician refers to the appropriate document and its related documents for that specific vehicle in SI.**

1. Perform the actions for the vehicle in order to remove the crankshaft rear oil seal and housing. Refer to Crankshaft Rear Oil Seal and Housing Replacement in SI.
2. Perform the actions for the vehicle in order to remove the oil pan. Refer to Oil Pan Replacement in SI.
3. Remove the bolts and the oil pan scraper from the oil pan and the oil pump suction pipe. Refer to Oil Pan Disassemble in SI.
4. Remove any gasket material or sealant from all oil pan and engine block gasket surfaces as needed, using the *EN 28410 Gasket Remover*. Clean the oil pan, oil pan scraper and oil pump suction pipe. Refer to Oil Pan Cleaning and Inspection in SI.



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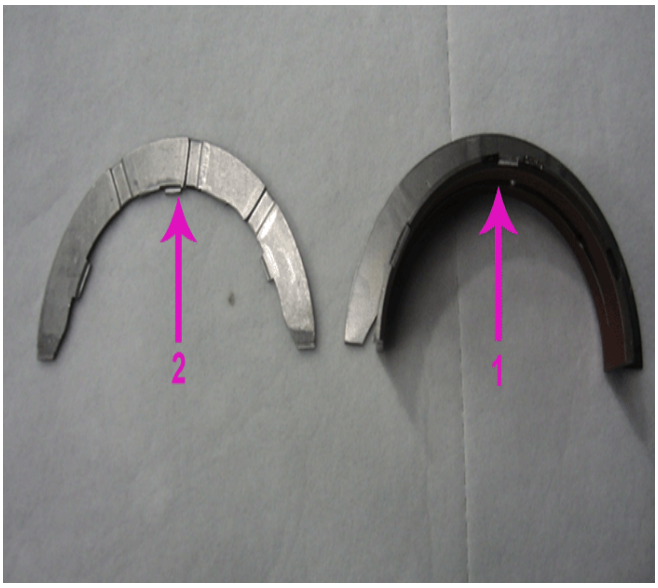

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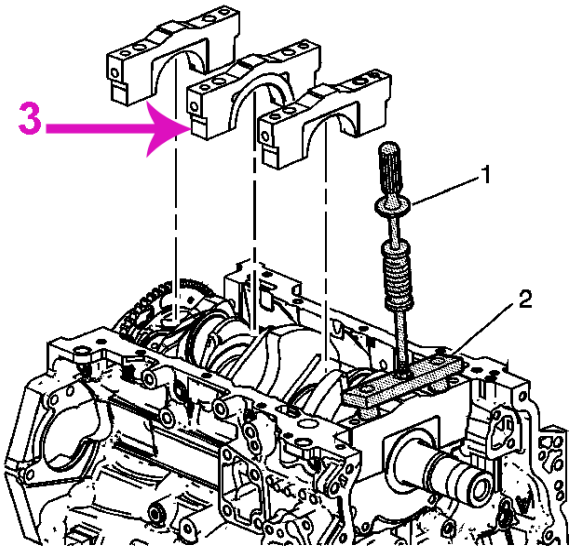
5. Typical view of a good crankshaft #3 thrust bearing with both thrust wings in place and a view of the crankshaft #3 thrust bearing (1) with one wing (2) broken off. The thrust bearing wing (2) is usually found in the engine oil pan, sometimes under the oil pan scraper. Ensure the failed thrust bearing wing is removed from the engine oil pan.



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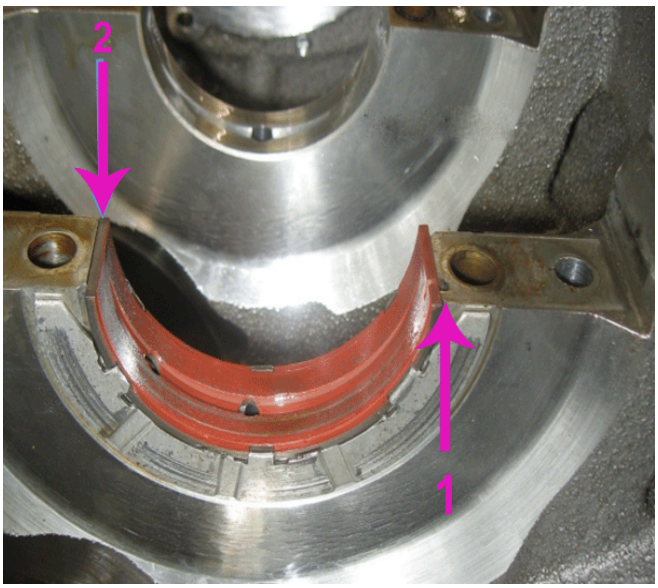
6. The crankshaft does not have to be removed to replace the #3 thrust bearing. Remove the inboard, outboard and short/inner side bolts of the main bearing cap. Remove the crankshaft #3 main bearing cap (3) using the *GE-6125-1B* (1) and the *EN 49102 Crankshaft Bearing Cap Remover* (2).
7. Discard the lower thrust bearing half.



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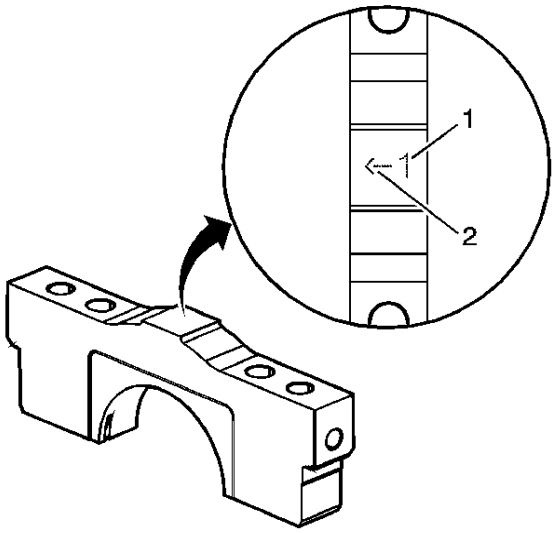
Notice: **The crankshaft is removed in this graphic in order to provide a clear view for this Step.**

8. Use a 0.40 in feeler gauge or an equivalent tool to push down on the thrust bearing on the opposite side (2) of the bearing notch tab (1) that is seated in the engine block bulk head notch relief. This action will push the thrust bearing out far enough to grab and remove it. If the bearing does not rotate far enough to grab it, turn the crankshaft until the bearing moves completely out of the block.
9. Discard the upper thrust bearing half.
10. Clean all oil from the backside of the new thrust bearing halves. Apply crankshaft prelube or clean engine oil to the upper and lower bearing surfaces. Refer to Adhesives, Fluids, Lubricants and Sealers for recommended lubricant in SI.

Notice: **Ensure that the upper bearing insert contains the oil transfer hole and groove.**

11. Install the upper half of the thrust bearing by rotating it back into position, turning the crankshaft if necessary. The bearing notch tab **MUST** engage in the engine block bulk head notch relief. The bearing must fit flush with the upper crankcase.
12. Install the lower half of the bearing into position in the main bearing cap. The bearing must fit flush with the bearing cap.



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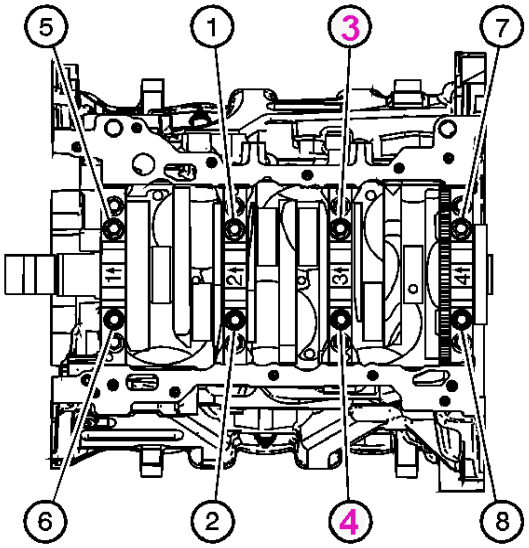
13. Install the main bearing cap with the arrow pointing towards the front of the engine.

Caution: This vehicle is equipped with torque-to-yield or single use fasteners. Install a NEW torque-to-yield or single use fastener when installing this component. Failure to replace the torque-to-yield or single use fastener could cause damage to the vehicle or component.

14. Loosely install the **2 NEW** inner main cap bolts.
15. Loosely install the **2 NEW** outer main cap bolts.
16. Tap the main bearing cap with a soft-faced hammer.
17. Loosely install the **2 NEW** short/inner side main cap bolts
18. Tighten the main bearing cap bolts using the *EN 45059-A Angle Meter* in the following sequence:



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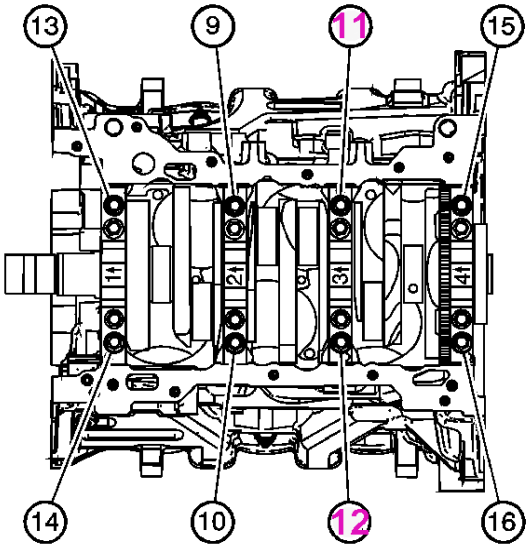
19. Tighten the inboard main cap bolts (3 and 4) first, in two passes.
    19.1. Tighten the inboard bolts to **20**N•m **(15 lb ft)** on the first pass.
    19.2. Tighten the inboard bolts an additional **80 degrees** on the second pass.



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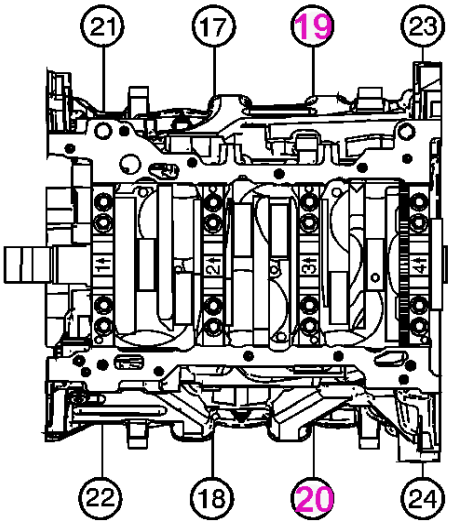
20. Tighten the outboard main cap bolts (11 and 12) second, in two passes.
    20.1. Tighten the outboard bolts to **15**N•m **(11 lb ft)** on the first pass.
    20.2. Tighten the outboard bolts an additional **110 degrees** on the second pass.



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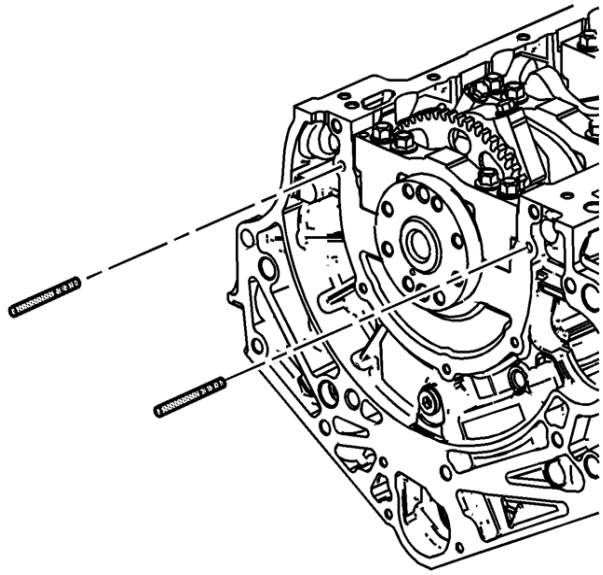
21. Tighten the short/inner bolts (19 and 20) third, in two passes.
    21.1. Tighten the short/inner bolts to **30** N•m **(22 lb ft)** on the first pass.
    21.2. Tighten the short/inner bolts an additional **60 degrees** on the second pass.
22. Ensure that the crankshaft turns without binding or noise.



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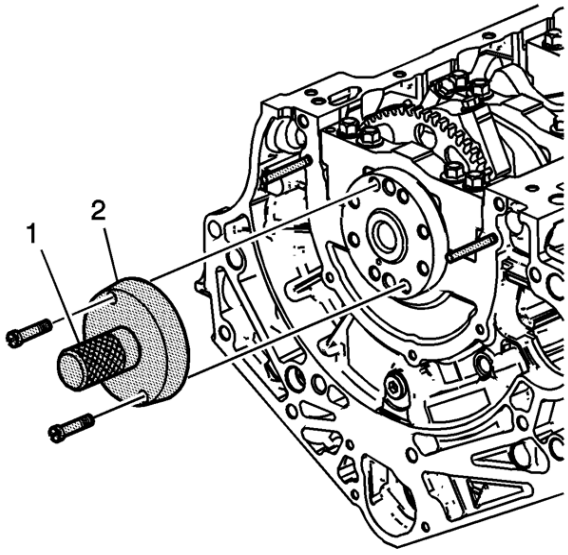
23. Install the 6 mm (0.236 in) guides from the *EN-46109 Guide Pin Set* into the 2 crankshaft rear oil seal housing corner bolt holes of the engine block.



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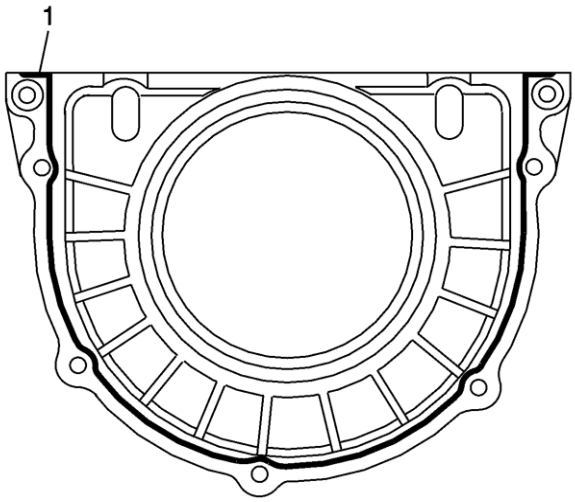
24. Install the *EN-47839 Crankshaft Rear Oil Seal Installation Tool* and the *EN-42183 Handle* (1, 2) onto the rear of the crankshaft flange.



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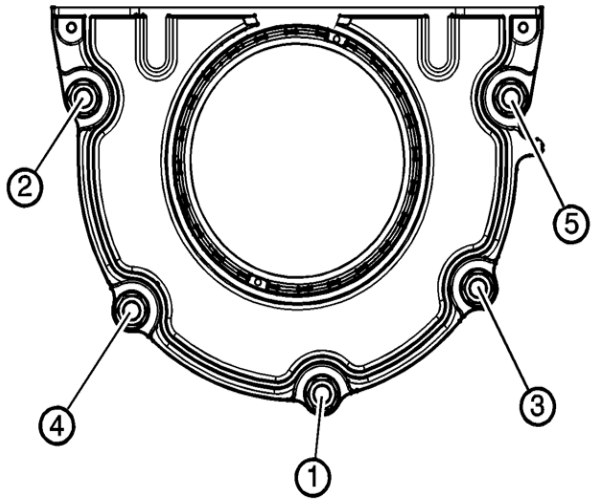
25. Apply a 3 mm (0.118 in) bead of RTV sealant (1) to the **NEW** crankshaft rear oil seal housing.

Notice: **DO NOT allow any engine oil on the area where the crankshaft rear oil seal housing is to be installed.**

26. Install the crankshaft rear oil seal housing to the engine block.
27. Remove the *EN-46109 Guides* from the engine block.
28. Install the crankshaft rear oil seal housing bolts.



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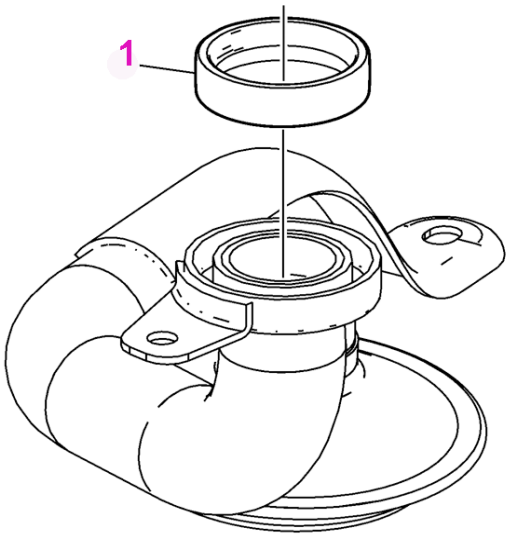
29. Tighten the crankshaft rear oil seal housing bolts in the sequence shown to 10N•m (89 lb in).
30. Remove the *EN-47839* and *EN-42183* from the crankshaft flange.



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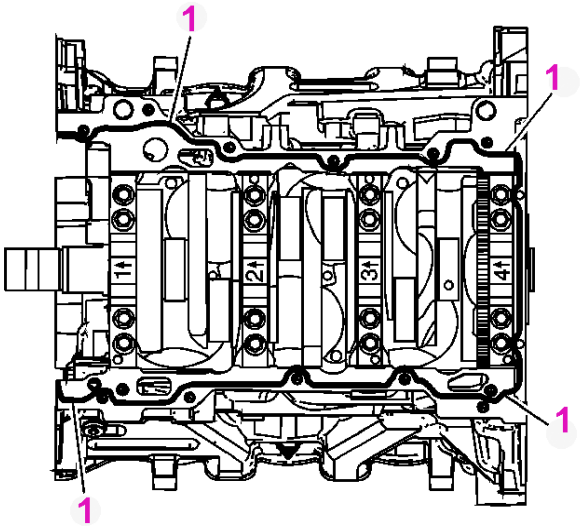
Notice: **DO NOT reuse the old oil pump suction pipe seal.**

31. Install a **NEW** oil pump suction pipe seal (1) on the oil pump suction pipe.
32. Install the oil pump suction pipe and tighten the bolts to 10 N•m (89 lb in).
33. Install the oil pan scraper and tighten the bolts to 10 N•m (89 lb in).



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34. Apply the proper size bead (1) of RTV sealant on the block pan rail, the crankshaft rear oil seal housing and the engine front cover as specified for that vehicle. Refer to Oil Pan Replacement in SI.
35. Install the oil pan and tighten the oil pan bolts in the specified sequence to the proper torque. Refer to Oil Pan Replacement in SI.
36. Assemble and install any remaining parts and fluids as needed to complete the repair.

Parts Information

Part Number	Description	Quantity
12643668	Bearing Kit - Crankshaft Thrust	1
12637710	Seal, Crankshaft Rear Oil	1
12566837	Seal, Oil Pump Suction Pipe	1
11609410	Bolt - Crankshaft Bearing Cap	2
12560272	Bolt - Crankshaft Bearing Cap	2
11518861	Bolt - Crankshaft Bearing Cap	2

Warranty Information

For vehicles repaired under the Bumper-to-Bumper Coverage, in Canada the Base Warranty Coverage, use the following Labor Operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Model	Labor Operation — Description	Labor Time
ATS (AWD - RWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	17.4 hrs** (Equipped with R-134a A/C System) OR 17.6 hrs** (Equipped with R-1234yf A/C System)
Acadia, Enclave, Traverse (AWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	13.9 hrs**
Acadia, Enclave, Traverse (FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	13.8 hrs**
Camaro (Automatic Transmission)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	13.0 hrs**
Camaro (Manual Transmission)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	13.6 hrs**
Captiva (VIN L) (AWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	13.3 hrs**
Captiva (VIN L) (FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	12.6 hrs**
CTS (AWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	17.2 hrs**
CTS (FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	15.3 hrs**
Equinox, Terrain (AWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	13.3 hrs**
Equinox, Terrain (FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	12.6 hrs**
LaCrosse (AWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	17.7 hrs**
LaCrosse (FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	17.3 hrs**
Impala (FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	12.8 hrs**
SRX (AWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	17.1 hrs**
SRX (FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	15.8 hrs**
XTS (AWD & FWD)	4080658* — Crankshaft Rear Oil Seal Housing Replacement	15.0 hrs**

*This is a unique labor operation for bulletin use only. It will not be published in the Labor Time Guide.

**This time includes as applicable to the vehicle: Base, Bleed Power Steering System, Clean Opposite Sealing Surface When Reinstalling Original Part, Remove Broken Thrust Bearing Wing, Clean Oil Pan, Install New Oil Pump Suction Pipe Seal, Install New Crankshaft Bearing, Fill Cooling System, Recover and Recharge A/C System.

For those vehicles requiring Wheel Alignment Measurement after performing the Crankshaft Rear Oil Seal Housing Replacement, refer to Labor Code 8070032 in GLC in SI.