Countries:	CANADA, UNITED STATES	**Document ID:**	IK1201493
Availability:	ISIS, NotSIR	**Revision:**	0
Major System:	ENGINE	**Created:**	4/3/2024
Current Language:	English	**Last Modified:**	5/22/2024
Other Languages:	NONE	**Author:**	Nick Zipadelli
Viewed:	199		

Less Info

Title: PSI 8.8L Engine Oil Pan Gasket Leaks

Applies To: All PSI 8.8L LPG and Gasoline Engines

Change Log

Please refer to the change log text box below for recent changes to this article:

05/22/2024 - Initial Article Release.

Description

The purpose of this article is to provide updated repair guidelines for the engine oil pan leak on all 8.8L gasoline and LPG engines. Engine oil can leak from the rear of the engine oil pan due to an excessive gap in the sealing area between the engine oil pan and the engine block.

Symptoms

Diagnostic Trouble Codes & Dashboard Indicator Lights:

DTC/Light	Description
No Faults or Warning Lights	None

Customer Observations or Concerns:

- Engine oil is on the lower oil pan, transmission, and bell housing inspection plate.
- Engine oil leak from the rear main seal area.
- The smell of burning engine oil.

Special Tools / Software

Tool Description	Tool Number	Comments	Instructions
Not Applicable			

Service Parts Information

Kit Description	Part Number	Quantity Required	Notes

RTV Silicon Rubber	1830858C1	1	
Engine Oil Pan Gasket		1	

Diagnostic Steps

Step	Action	Decision
1	**DIAGNOSTIC:** Confirm there are no other engine oil leaks that need diagnosing. **YES/NO QUESTION?** Are there multiple engine oil leaks from the engine?	**Yes:** Confirm the engine does not have excessive blow-by or the PCV system is restricted. Follow PSI diagnostics to find the root cause of the condition. **No:** Go to step 2

Step	Action	Decision
2	**DIAGNOSTIC:** Perform a visual inspection of the intake valley plate and confirm it is not leaking causing a false engine oil pan leak. See Figure 1 for an example of an intake valley plate leak. ****NOTE**** The intake manifold **DOES NOT** need to be removed to inspect the engine valley plate for an oil leak. **YES/NO QUESTION?** Is the engine valley plate leaking engine oil?	**Yes:** Repair engine oil leak at the valley plate. Clean the engine and retest for engine oil leaks. **No:** Go to step 3

Figure 1

Step	Action	Decision
3	**DIAGNOSTIC:** Confirm that the engine oil cooler, lines, and fittings are not leaking. **YES/NO QUESTION?** Are there any engine oil leaks from the engine oil cooler area?	**Yes:** Repair engine oil cooler leaks, clean, and then retest. **No:** Go to step 4.

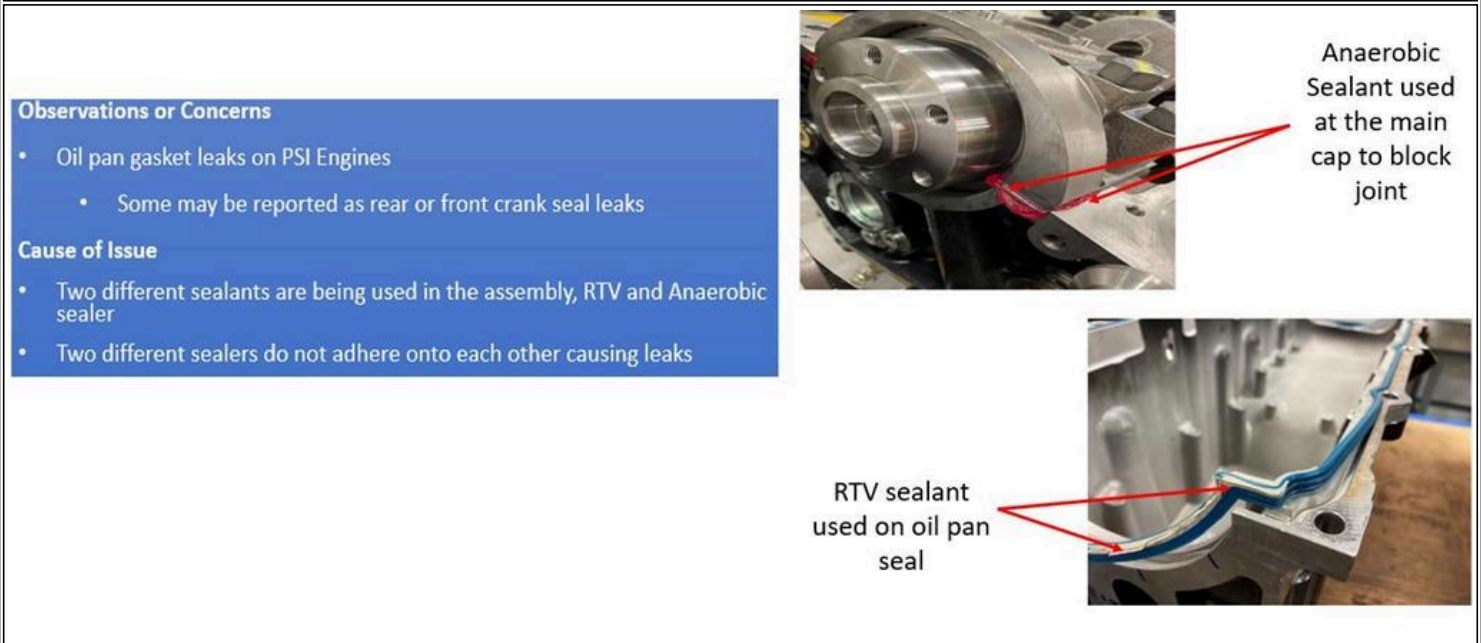
Step	Action	Decision
4	**DIAGNOSTIC:** Confirm that the engine oil dipstick tube is not leaking. **YES/NO QUESTION?** Is the engine oil dipstick tube leaking?	**Yes:** Repair engine oil dipstick tube leak. Confirm that the correct part number dipstick tube is installed per that style of engine oil pan. (front sump, flat bottom oil pan rear sump). Clean the area of oil and debris then retest for concern. **No:** Go to step 5.

Step	Action	Decision
5	**DIAGNOSTIC:** Confirm that the front crankshaft seal is not leaking. **YES/NO QUESTION?** Is the front crankshaft seal leaking?	**Yes:** Repair the front crankshaft seal outlined in the PSI 8.8L service manual, then retest for oil leak. **No:** Go to step 6.

Step	Action	Decision
6	**DIAGNOSTIC:** Remove the bell housing inspection plate. Inspect for leaking rear main seal using a boroscope or similar tool. **YES/NO QUESTION?** Is the rear main seal leaking?	**Yes:** Repair rear main seal, clean then retest. **No:** Go to step 7.

Step	Action	Decision
7	**DIAGNOSTIC:** Confirm that anaerobic sealant was not used when the original oil pan was installed. Please see attached figure 2 below. *****NOTE***** The transmission may need to be removed to better inspect for a leak. Verify with a boroscope that the engine oil leak is present inside the bell housing. **YES/NO QUESTION?** Was anaerobic sealant used with the factory engine oil pan installation?	**Yes:** Repair the engine oil pan with the procedure outlined in the repair section of this article. **No:** Go to step 8.

Figure 2



Step	Action	Decision
8	**DIAGNOSTIC:** Confirm that the engine oil pan is leaking. **YES/NO QUESTION?** Is the engine oil pan leaking?	**Yes:** Repair the engine oil pan with the procedure outlined below.
		No: Clean and retest for engine oil leak.

Repair Step(s)

WARNING! To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in either direction.

WARNING! To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

1. Remove the engine oil pan assembly.
    1. Be sure to clean all oil, RTV, and debris from the engine block and oil pan.
2. Inspect for leaks at the corners of the rear main cap.
    1. If a leak is present, remove the main cap, apply the correct amount of RTV, then torque to specification.
        1. ****NOTE**** Rear main bolts are not torque-to-yield (TTY) and can be reused.
3. Install the oil pan with a new engine oil pan gasket.
    1. Do NOT apply RTV yet.
    2. Torque the engine oil pan fasteners to 10lb-ft
4. Determine the oil pan gap.
    1. Using feeler gauges, measure the gap between the oil pan gasket and the rear main bearing cap. (**Figure 3**)
        1. ****NOTE**** If no gap is present, do not install any additional cork gasket. Proceed with installing the oil pan per the service manual.
5. Remove oil pan.
6. Using the measurement from step 4, determine which thickness gasket is needed. (1/8in or 1/16in.)
    1. Cut a strip of 1/8in or 1/16in cork gasket that fits along the rear main cap (**Figure 4**)
    2. Apply a Navistar-approved RTV to both sides of the cork gasket, then allow the RTV to become slightly tacky before installing it.
7. Apply RTV to the corners of the engine oil pan and rear main cap mating surfaces. (See service manual for application locations.)
    1. Allow RTV to become slightly tacky before installing the engine oil pan.
8. Apply the RTV-coated cork gasket to the rear main cap (Figure 3)
9. Install and torque the oil pan as described in the PSI 8.8L service manual. (The link to the manual is below)

Figure 3

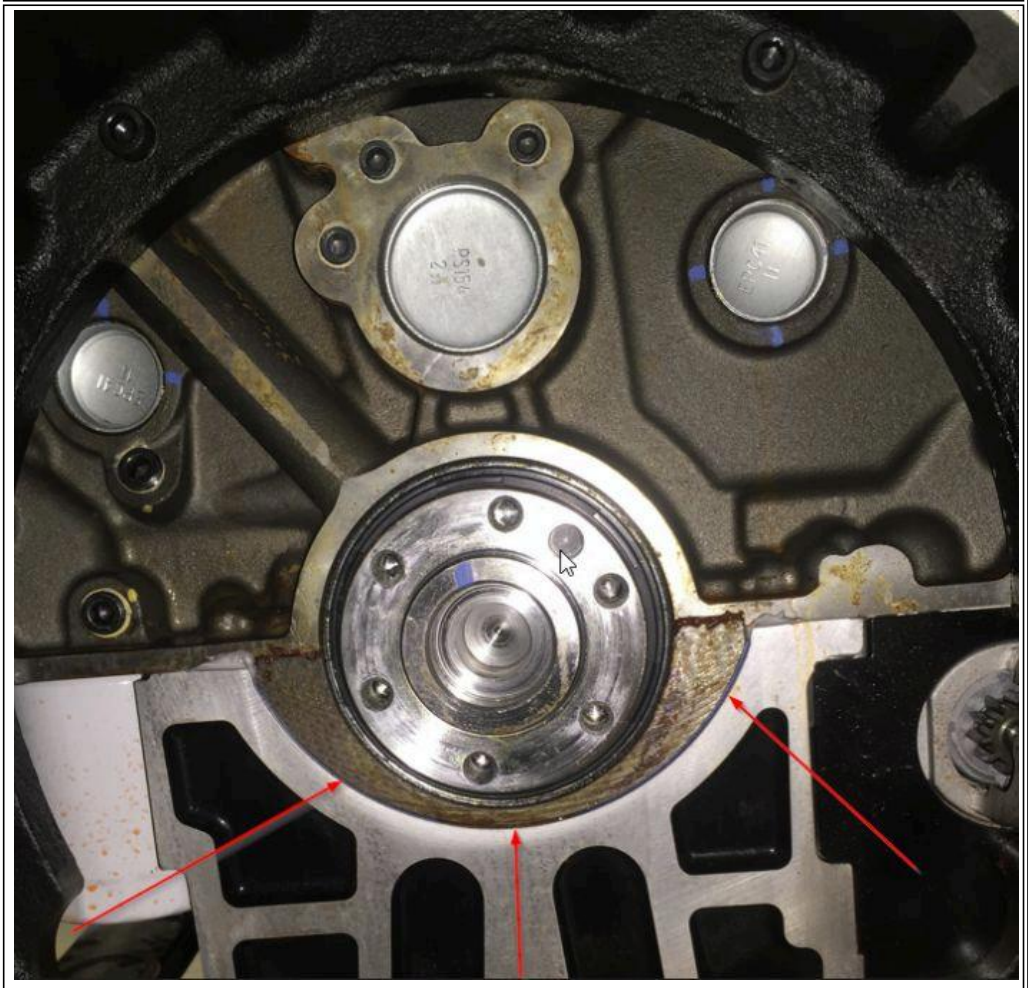


Figure 4 Cork installed with RTV on rear main bearing cap

Supporting Information:

1. PSI 8.8L Propane and Gasoline Engine Service Manual - https://evalue.internationaldelivers.com/service/SVCDOCS/Navistar/SVCMANPDF/7610016.pdf

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Warranty Information

Warranty Claim Coding:

Refer to the Warranty Coding Manual for Group and Noun Codes.

Standard Repair Time(s):

Refer to the SRT Manual for Repair Times

Other Resources

Master Service Information Site

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