Timing Gear Plate, Inspection

V-212-001

(December 2022)

Valid for

All Volvo Powered Trucks 2017 to current

Case description

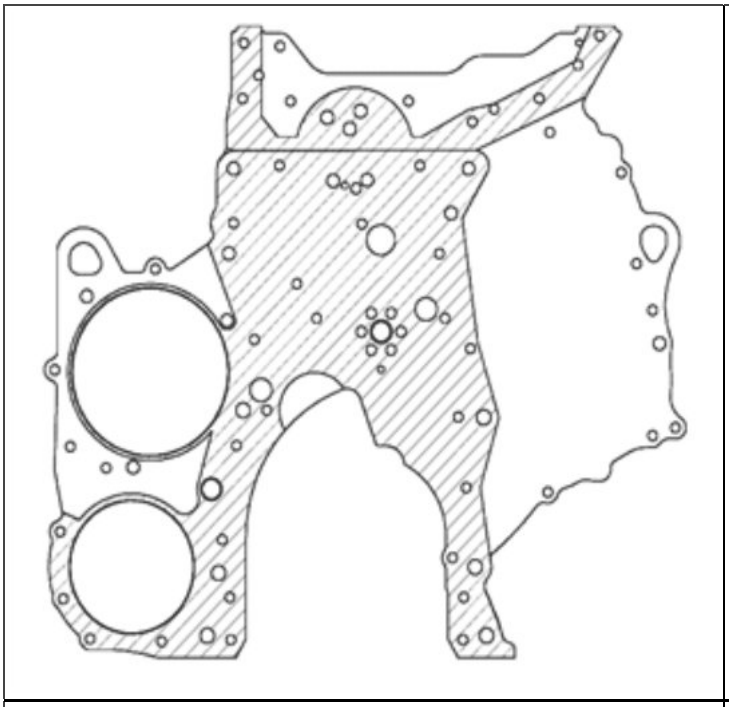
Volvo Trucks with an 11L and 13L engine utilize two types of timing gear plates. In some instances, the timing gear plates may show evidence of an oil leak or oil weep. The information in this publication describes the differences between the two types of timing gear plates used, the inspection criteria for determining an oil weep vs an oil leak, and the recommended best practices for how to properly diagnose a leak, and what is considered a valid repair.

Types of timing gear plates

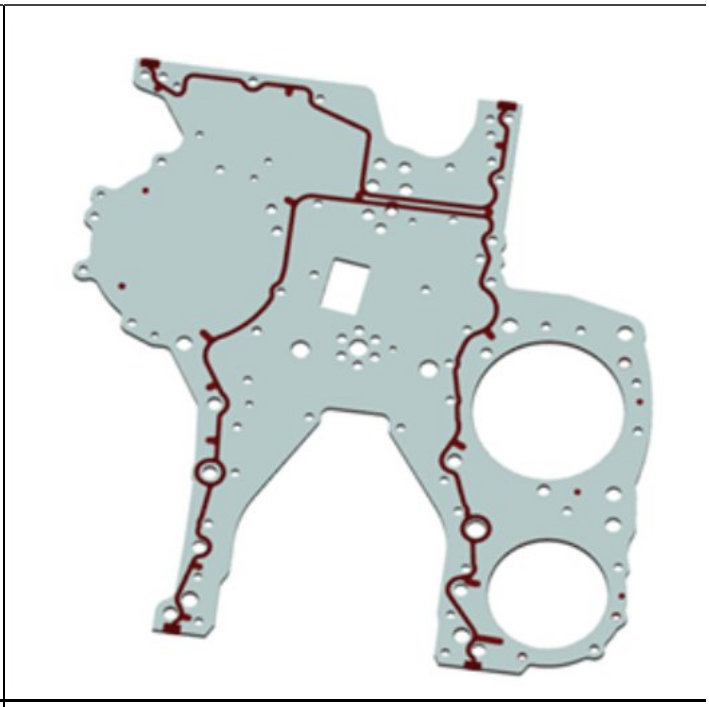
Wet seal plates are multiple time use and can be removed, cleaned and reinstalled with new sealant. Wet seal plates are used on 11L-13L engines from the start of production to current on the 11L and through April 2018 on the 13L VGT engines. The 13L turbo compound engine has never been built using the wet seal plate.

Important Note
13L Engine with a wet seal plate can be upgraded to the new integrated seal plate but will require additional components to be replaced. Refer toTPI 212-031, Timing Gear Plate for required parts list.

Integrated seal plates were introduced into production in 2017 models built with the 13L Turbo compound engine and 13L VGT engines built after April 2019. If a leak is found on an integrated seal plate or any damage is found to the integrated seal the plate must be replaced. The integrated plate is not repairable and must be replaced if any damage is found.



Wet Seal Plate (silicone seal)



Integrated Seal Plate

Repair criteria

Oil leak can be classified into two different categories, a weep, or an active leak.

Oil Weep is determined by the appearance of a thin accumulation of oil on the exterior of a part. The area will look like a dark stain or look damp in appearance (but not wet or dripping) and will likely collect dust and dirt.

Note: An oil weep is a normal condition seen around mechanical joints and does not require a repair.

Oil Leak is determined by the identification of oil actively accumulating on the exterior of a part. The area will be visibly saturated, can be seen actively accumulating and running from the area.

Note: An active leak is the only leak that is considered a valid warrantable repair.

Use the images below for a visual reference of the leak categories. If farther assist in needed determining the leak category, please follow normal support procedures.

Note: If an integrated seal plate is leaking or if damage is found to the seal, it must be replaced with a new one. It cannot be repaired using silicone.

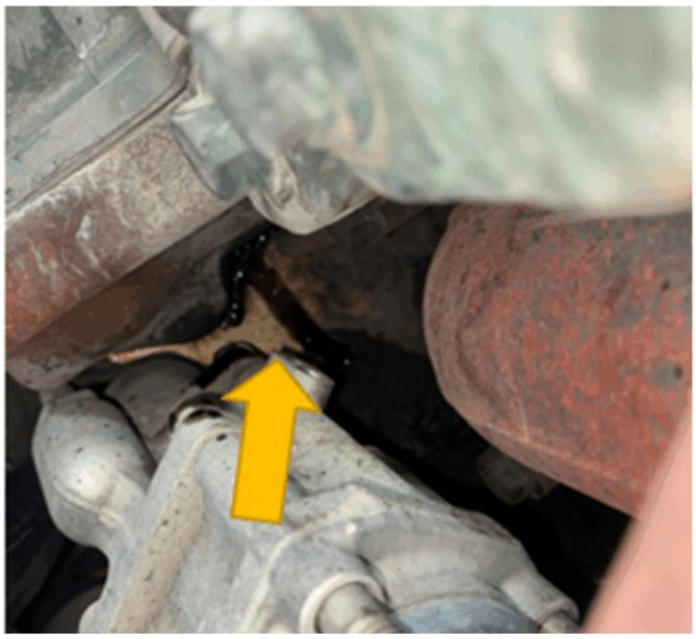
Reference images of an oil weep (not a valid warrantable repair)

Dark spot or stain

Collection of dirt and dust (not active)

Reference images for an oil leak (valid warrantable repair)

Oil actively leaking



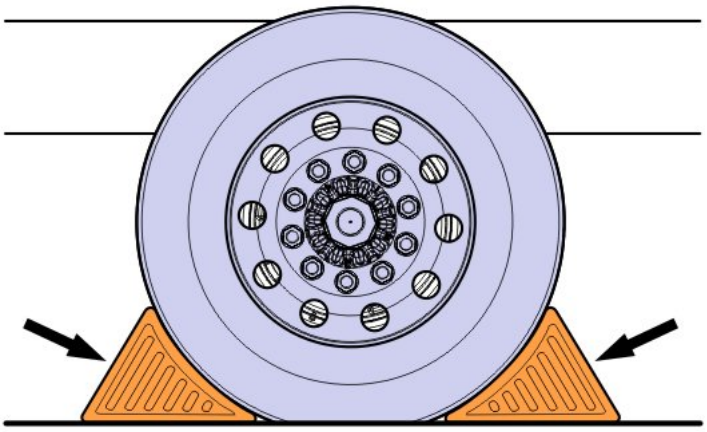
Oil actively running down joint

Oil Accumulating

11L-13L Engine Oil Leak Diagnose

Note: When diagnosing a suspected timing gear plate leak, it is important to understand the difference between a weep and a leak.

1. Park the vehicle on a level surface.
2. Apply the parking brake.
3. Place the gear lever in neutral.
4. Install the wheel chocks.



5. Unlatch and raise the hood.
6. Visually inspect the Timing Gear Plate (TGP) for an active leak.
    1. If a **weep** is found (dark stain/dust and dirt) no further diagnostics is needed. Release truck back into service.
    2. If a **leak** is suspected, follow the steps below to properly diagnose and repair the leak.

    When diagnosing a TGP leak

    A. Prior to cleaning the engine, document the suspected leak with pictures that clearly shows the accumulation of the oil leak as well as pictures of the suspected area.

    B. Thoroughly clean the suspected area.

    C. Load the engine (road test/regen) to get coolant and oil up to operating temperature.

    D. Verify oil is actively leaking.

    E. Document the oil leak with clear pictures of the active leak and the origin point.

Important Note
If further assistance is needed determining a leak request support using the normal process.

7. Once a leak is determined and documented with pictures, follow Impact repair instruction in function group 2152.

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