



Technical Service Information

KIA A6MF2H HYBRID ENGINE STALLS IN DRIVE

COMPLAINT: A 2012 Kia Optima Hybrid equipped with a 2.4 Liter Engine and the A6MF2H Transmission has a complaint of the engine stalling as soon as the shifter is pulled into the drive position. When the transmission was disassembled for inspection, the engine clutch friction plates were found to be burnt and welded together, refer to figure 1.

The transmission was rebuilt with new engine clutch and line pressure control solenoids and installed back into the vehicle, it was then taken for three short road tests during which the transmission would slip and flare up upon engagement of the engine clutch. The transmission was removed once again and inspected only to find the engine clutch friction plates burnt again.

CAUSE: The oil pump sealing ring sleeve had shifted inward as seen in figure 2 causing sealing ring leakage and the failure of the engine clutch friction plates. The sleeve should be flush with the pump cover, it is not. If you look closely you can actually see two sets of sealing ring wear patterns, the second set was created after the sleeve moved. After the sleeve moved one of the three Teflon® sealing rings is not even riding in the sleeve refer to figure 3.

CORRECTION: A new oil pump was installed into the transmission with a new set of engine clutch friction plates. The vehicle was road tested and operated normally throughout the extensive road test.

SUMMARY: This Hybrid system uses an electric motor machine located in between the engine and transmission to start moving this vehicle from a stop (forward or reverse) to a speed of 12kms (7.5mph) then the engine starts and the transmission applies the engine clutch to take over. There is no torque converter in this vehicle, if the engine is running while the vehicle is stationary its charging the hybrid battery. The engine clutch must release while in drive at a stop. The clutches in the vehicle when it came into the shop were burned and welded together. This caused the car to stall aggressively when drive was selected (engine running only). If the engine was off during a start things would appear to be fine until you let off the brake pedal, then it would chug like a converter clutch was stuck on.

SERVICE INFORMATION:

Engine Clutch Disk Set.....45575 3D000

Many thanks to Carlos from Transmission technology for sharing his experience and photos with ATSG.

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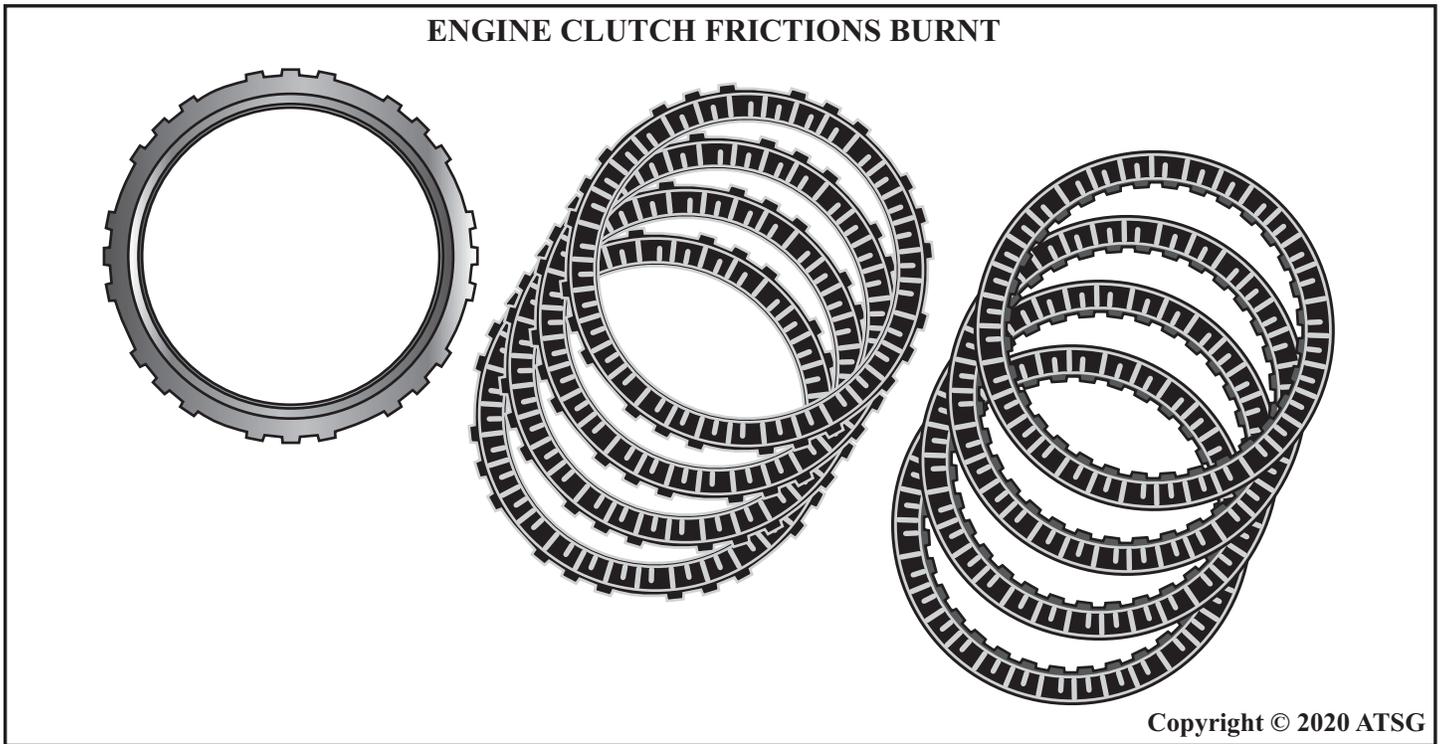


Figure 1

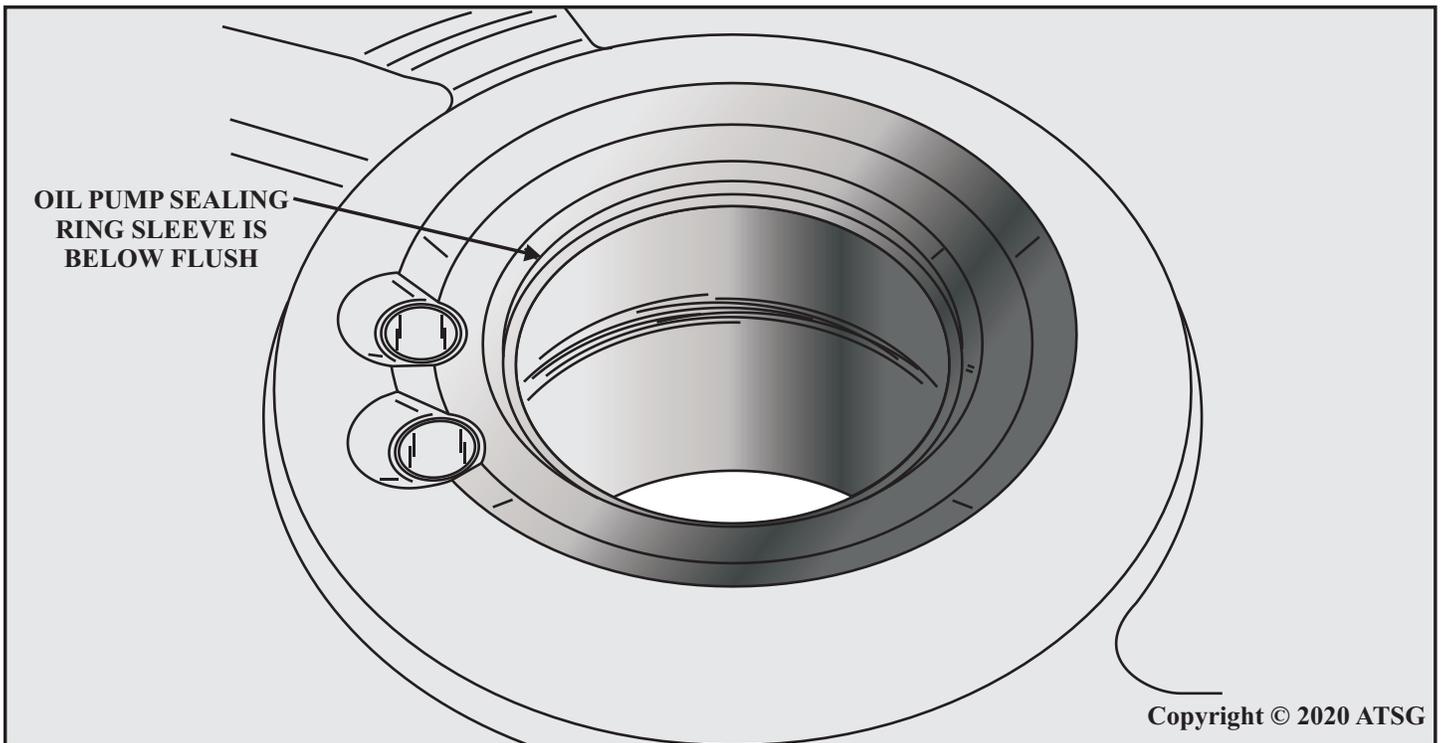


Figure 2

**KIA A6MF2H HYBRID
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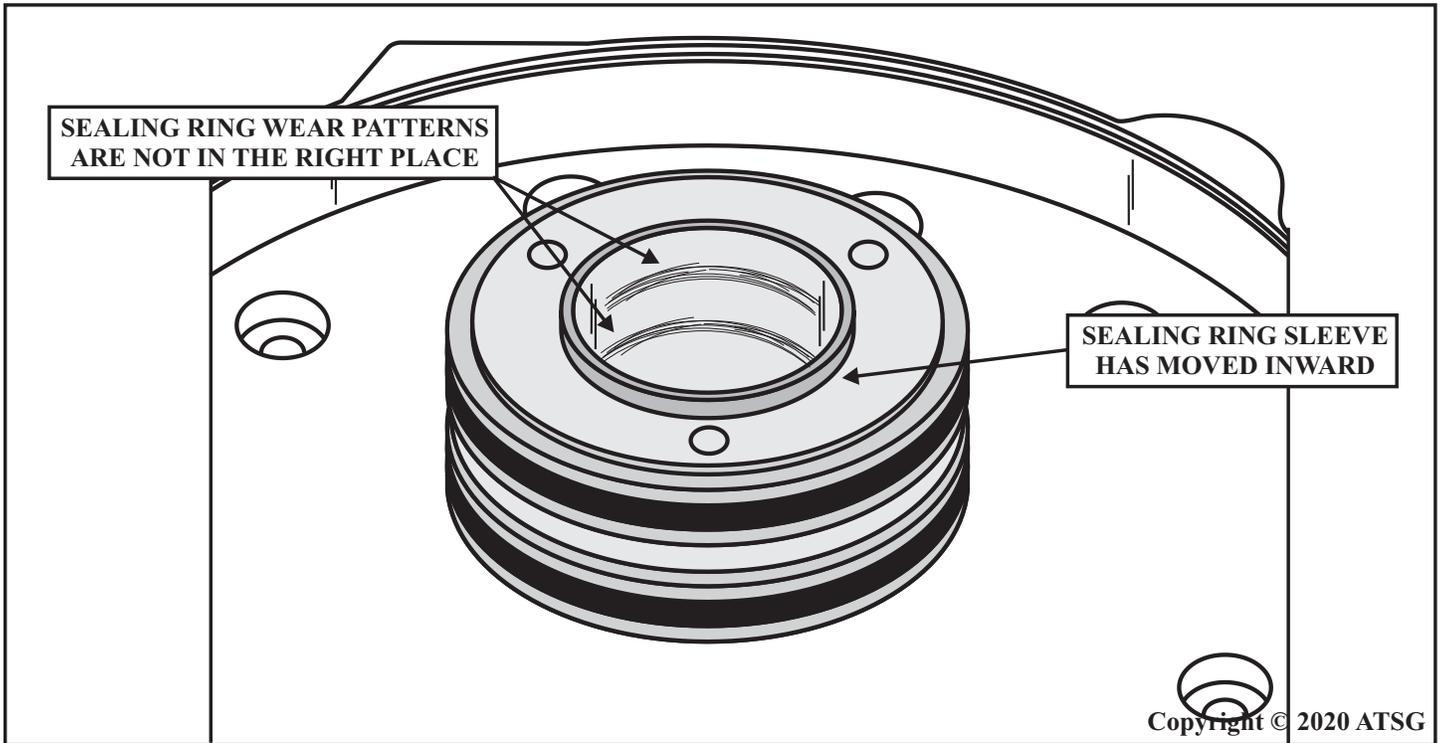


Figure 3