

CASE STUDY

Customer: A leading global automotive manufacturer and their tier 1 supplier

Industry: Automotive, Light Vehicle

Application: Front and Rear Axle Cover Pan for Light-Duty Trucks

Fluid: Gear lubricant

Solution: Select-A-Seal®

Select-a-Seal gaskets provide a robust engineered sealing solution for weight-reduced axles

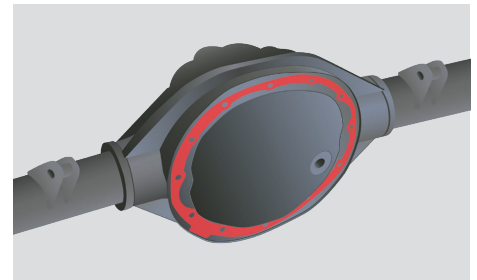
CHALLENGE

The OEM replaced cast iron drivetrain components with new weight-reduced aluminum drivetrain components on the global truck platform of their half-ton, light-duty trucks. Although this type of upgrade improves fuel economy, it can come with the penalty of reduced component stiffness which may cause seal failures due to increased gapping and flexing of joint members. The OEM was completing their Design Validation Phase when a leak was discovered. The leak was caused by cracks in the RTV seals of the front and rear axle cover pans. This could have negatively impacted production launch with failures in the field leading to elevated warranty claims.



SOLUTION

Lydall Performance Materials designed, manufactured and supplied two different sized Select-A-Seal gaskets—one for each axle cover pan. The Select-A-Seal gaskets passed all of the OEM's tests including Thermal Cycle, Beaming, Max Torque, Axle and Vehicle Durability and the System FEA which confirmed the whole axle unit could exceed the specified loading condition.



RESULTS

Select-A-Seal provided a successful and durable seal which allowed the OEM's production to commence for the half-ton, light-duty truck. Select-A-Seal provided a robust engineered sealing solution for the weight-reduced axles by accommodating the mechanical flexing and gapping in the joints, as well as differential thermal expansion rates of steel covers on aluminum housings. In addition, the OEM's assembly time improved since Select-A-Seal was a drop-in gasket in a single station vs. the extended production time RTV requires. This success eventually led to gasket approvals on multiple axle platforms.

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Form A-5842
Effective 02/25
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