

Design Win!



INTEGRAL SEAL™ FOR HYDRAULIC TRANSMISSION ASSEMBLY

Application

Customer supplies a hydraulic transmission assembly, primarily used in agricultural equipment, to multiple customers. The transmissions experiences temperatures that range from -15°F to 250°F with the fluid reaching a maximum of 50 psi. Due to the nature of the equipment this housing is subject to outdoor storage and exposure to natural elements, including rain and sub-freezing temperatures.

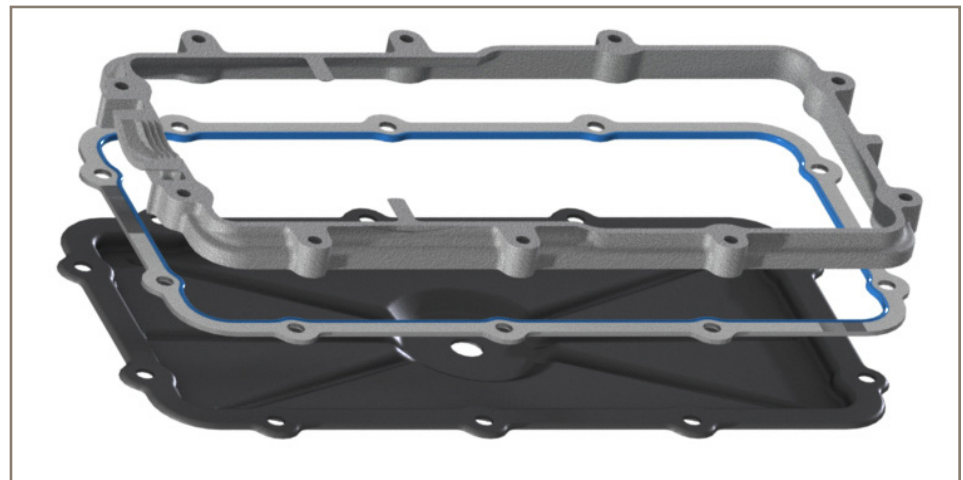
Problem

End user has observed leaks in the hydraulic assemblies located at the bottom cover gasket interface. Current sealing method utilizes a solid nitrile shape compressed between the transmission housing and the bottom cover.



Parker Solution

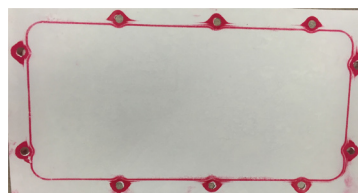
Parker CSS division engineered a customized integral seals solution using an aluminum retainer with a fluorocarbon sealing material allowing the rubber to maintain its elasticity after installation. The aluminum retainer matched the mating hardware for compatibility while also acting as a compression limiter to prevent over compression during installation. The resultant Fuji impression below for the new seal design confirmed an even distribution of sealing contact pressure against the mating hardware (in contrast to the previous customer's solution). Using a repeatable metal stamping process we were able to provide consistent bolt hole locations within .008" on our retainers eliminating misalignment during installation.



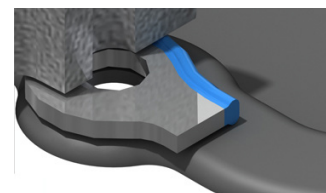
FEATURED PRODUCT: Integral Seal for Hydraulic Transmission

- Gasket is compressed between housing and cover by torquing 10 self tapping screws to 100-120 in/lb.
- Without the aid of a compression limiter, the gasket experiences over-compression leading to loss of original shape.
- Misaligned holes between the gasket and transmission housing caused the rubber to fray during installation.
- Solid nitrile bottom cover gasket is not distributing sealing pressure evenly across gasket housing interface.

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Fuji impression



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