

Exhaust Manifold Seals

Heavy Duty Diesel Engine Air Duct Seals



Parker Solution:

Parker's single piece air duct seals are proven to reduce leakage by up to 80% when compared to leak rates of traditional labyrinth piston ring seals.

The air duct seal is engineered to fit tightly into the mating hardware to greatly reduce leak paths. Its hourglass design eliminates the need for costly machining of grooves and is easy-to-install.

The design is further enhanced with TriCom-HT™, Parker's proprietary high-temperature anti-wear coating. TriCom-HT™ extends seal life by providing superior wear resistance that protects the air duct seal from the detrimental effects of engine vibration and thermal cycling.



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Product Features:

- Easy to install
- Single piece, metal design
- TriCom-HT™ anti-wear coating
- Lower leak rates than traditional labyrinth piston ring seals
- High temperature resistance
- High corrosion resistance
- Vibration resistant
- Long life

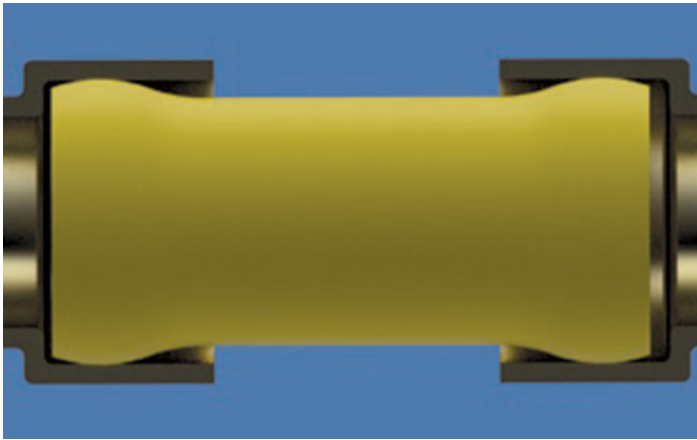


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Application

Most heavy duty diesel engines can reach exhaust gas temperatures upwards of 700 °C (1292 °F) while subjected to constant vibrations. These engine vibrations can cause havoc when a seal needs to be maintained on the exhaust line. Vibrations from the engine cause rotation, cavity offsets, pivoting, and reciprocation which become difficult to seal against.

Movement, pressure cycling and thermal cycling require an engineered solution to maintain a seal under extreme application conditions. With the use of custom engineering and advanced analysis techniques, Parker is able to create custom solutions for our customers' most difficult applications.

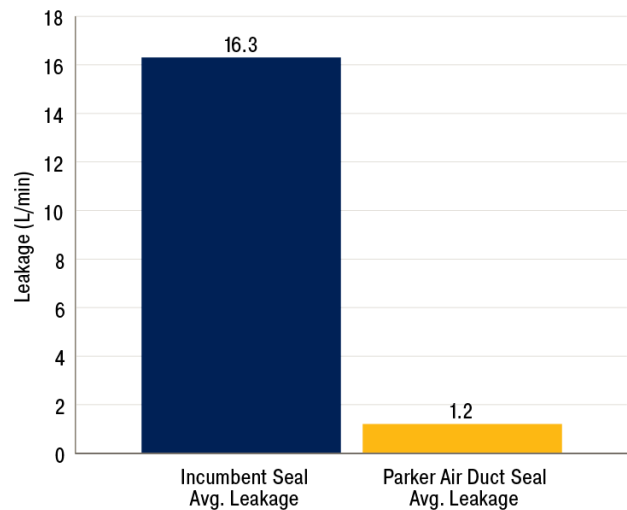


Cross section of air duct seal installed in an exhaust system.

Problem

Increased emission restrictions are requiring engine manufacturers to conform to Euro 6 and Tier IV regulations to reduce exhaust leakage 80% or more. In order to achieve these new standards, engines with extreme temperatures coupled with a high amount of vibrational movement, need to have highly engineered sealing solutions.

Applications with predetermined mating components cannot always be changed, so the need for a sealing solution with a similar coefficient of thermal expansion is needed.



Average leakage observed at temperatures up to 700 °C and 20 psid

Where Used:

- Multiple component assemblies
- Gas turbines
- Vibration isolation applications
- Exhaust connection between:
 - EGR
 - EGR cooler
 - Exhaust pipes
 - Turbo charger
 - Exhaust manifold