



Customer : A security, defence, transport and energy company
 Product group : O-rings
 Market : Transport, aviation and maritime
 Application : Viton® GLT O-rings

ERIKS MEETS CUSTOMER'S SPECIAL SEALING REQUIREMENTS IN TIME

Low temperature seal for aerospace



CHALLENGE

Design engineers of the customer were tasked with providing a sealing solution for a motor project. A series of O-rings and gaskets were required to seal the gearbox housing, oil feed/vent ports and terminal blocks. The motor would be exposed at high altitude to low temperatures of -50°C but warmed to -40°C prior to start up. Life expectancy of the motor was 10 years between overhaul.

A material was required that would offer resistance to an ASTM 903 grade oil at operating temperatures between 150°C and -40°C with excellent life expectancy. Initial drawings specified various O-rings of 1.78mm cross section in every location with a number of rather complex gaskets.

SOLUTION

ERIKS offered a Viton® GLT using a Solvay Solexis FKM compound with a TR 10 of -40°C. The compound is widely acknowledged as having the lowest temperature rating for Viton® and will still seal below this level to a glass point of approximately -50°C. Resistance to ASTM oil 903 is excellent and compression set is good but possibly the weak link in the chain.

On reviewing the drawings with the design team it was agreed that increasing the cross section of the O-rings where ever possible to 2.62mm would offer an improved seal at the lowest temperatures and improve longevity. Gaskets were simplified to reduce potential difficulties in moulding. All components were manufactured and samples were supplied to the customer to meet motor test schedules. After successful trials, production volumes were manufactured under considerable pressure from the customer to meet a very tight delivery date.

OTHER BENEFITS

- Solution met the customer's design requirements
- The product was quickly delivered to meet customer's tight deadlines

FURTHER COMMENTS

The customer was impressed with the level of technical support and the response times provided by the ERIKS team. The success of the project led to referrals to other parts of the customer group and ERIKS is now working on a new aerospace project.