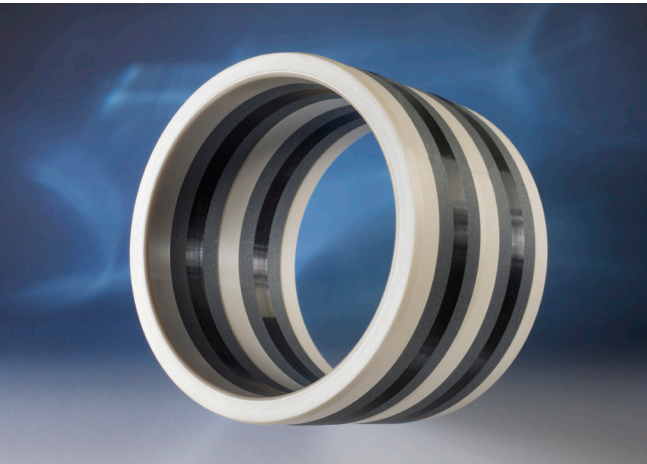




Nonelastomeric Seal Stack

Solutions for High-Pressure Condensate Pumps



- Cost savings by eliminating lubrication costs
- Increases seal life four fold
- Provides zero leakage and ability to run dry

Equipment

Condensate pump on a gas platform in the southern North Sea.

Existing Seals

Braided packings with virgin PTFE backups.

Problem

The condensate was leaking, and lubrication was required to prevent any contamination of the condensate. Neither the pump manufacturer nor the existing seal supplier offered help with the problem.

Solution

After visiting the platform and gathering data, Greene Tweed designed a solution that removed the need for expensive lubricants. Greene Tweed's solution involved a new seal stack capable of running without lubrication, removing the requirement for a complicated delivery system as well as creating considerable cost savings.

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Seal Configuration

Female-End Adapter

This component acts as a backup for the seal stack, preventing extrusion of the softer primary seal materials and providing a stable base for the seal stack to rely on during higher loading.

Manufactured from a proprietary Greene Tweed material, Arlon® 1000, the female-end adapter has very tight tolerances, enabling it to act as a bearing surface to prevent concentricity problems.

V-Ring

This component, manufactured from a proprietary filled PTFE, gives the sealing redundancy within the stack, offering support to the primary seal ahead of it and helping to create the column mechanical load throughout the stack.

MSE® (Metal Spring Energized) Lip Seal

This primary seal consists of a wholly machined jacket of proprietary PTFE energized by a single metallic finger spring. The MSE® offers low friction coefficient, excellent wear rate and full fluid compatibility.

Hat Ring

Manufactured from Arlon® 1000, the hat ring protects the sealing lips of the MSE® from any unforeseen damage during reciprocation of the plunger by preventing the sealing lips from slamming against the groove wall.

Greene Tweed

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