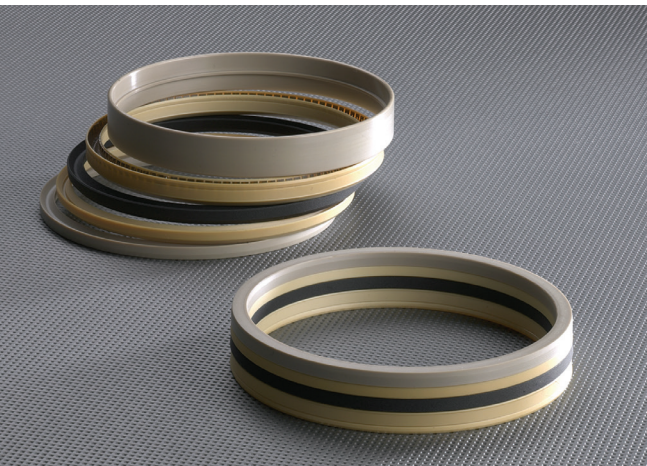




# Nonelastomeric Seal Stack

## 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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