

Cheshire Seals.

Case Study: Redesign and Build of Piston System for Delivery of Chemicals.

Purpose.

The customer presented CS&C with a problem application of a double-acting piston design that was suffering with repeated failures of a single piston composite seal dealing with aggressive chemical fluids. The repeated failures on a high speed operation were giving short lived service intervals and wear on moving parts.

Solution.

- Piston and gland for the connecting rod were both redesigned by CS&C with the customer.
- The old design of piston with two wear strips and one piston composite seal was replaced by a single wear strip and two seals selected for chemical compatibility.
- In the CS&C machine shop the original seal channel was machined out and replaced with a wider wear strip of glass-filled PTFE.
- The former wear strips were removed and grooves machined in their place for a pair of single-acting Veriseals machined from PTFE at CS&C.
- A new gland was made at CS&C as the feed-through for the connecting rod, incorporating a longer wear strip for increased stability.

Outcome.

- Longer life of seals and bearings by a factor of five.
- Reduced wear.
- Less downtime and maintenance costs.
- Greater accuracy in dispensing measured chemical quantities.
- Higher productivity.