

Positive Displacement Pumps

In-depth sealing solutions



Introduction

FTL are experts in providing sealing solutions for positive displacement (PD) pumps.

Positive displacement pumps are designed to move fluids or materials by trapping a fixed volume and displacing it into a discharge pipe. These pumps are driven by a cyclical pumping motion involving a series of pistons, gears or screws. With so many dynamic elements, effective sealing can be a serious challenge.

FTL specialise in developing sealing solutions which improve the reliability of both rotary and reciprocating PD pumps, extending service life and reducing total lifetime cost of ownership.

Our expertise and experience working with PD pumps has enabled us to design in-depth solutions to the key problems

faced by PD pump operators – across rotary seals, reciprocating seals and cartridge seals. We have a proven track record in finding the right answer to PD pump challenges.



The key challenges

A fully optimised PD pump sealing system is developed with three key challenges in mind.

- Minimising internal pump damage from high pressure, friction heat or viscous media
- Preventing leakage from the pump to the environment
- Preventing external ingress and contamination

Without proper sealing in place, the overall performance of the pump will be adversely impacted, with associated costs in MRO and loss of production.

Why FTL?

Decades of experience as PD pump specialists

- Direct contact with engineers focused on optimising performance, reliability, and efficiency

Bespoke design and technical support

- Innovative sealing solutions developed to meet the unique demands of your critical application

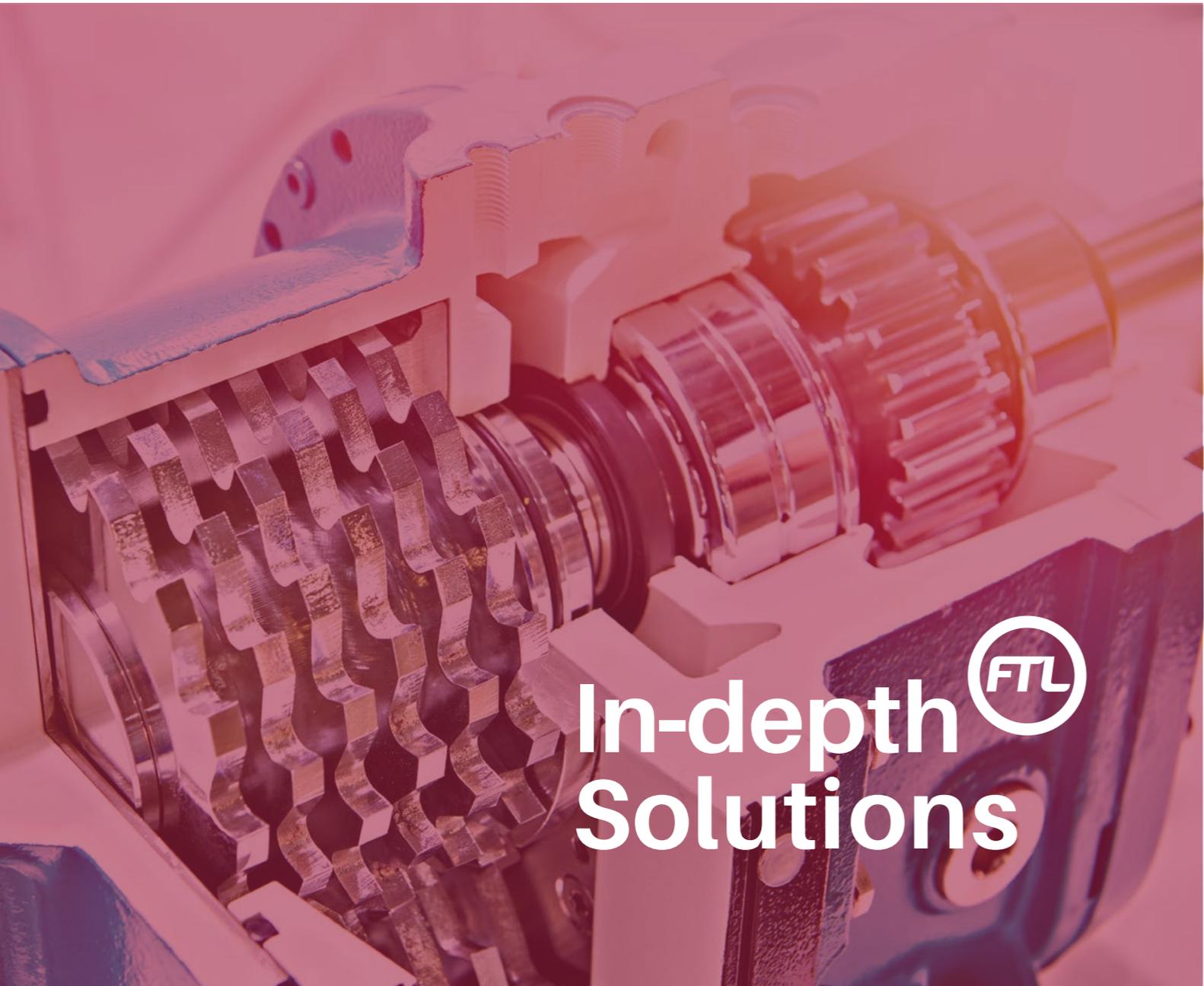
In-house seal testing and validation

- An R&D Centre of Excellence, for peerless testing of dynamic sealing technologies

Comprehensive supply chain management

- Reducing complexity from stock holding to OEM-branded packaging

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**In-depth
Solutions**

PD Pump Seal Solutions



Rotary Seals

Rotary seals are of vital importance to the design of rotary PD pumps because they keep fluids moving, while also preventing the ingress of contaminants such as water and mud.



Reciprocating seals

As a key design element in reciprocating PD pumps, these seals are used for high-pressure applications and are designed to withstand extreme temperatures and pressures, as well as environments involving challenging process media.



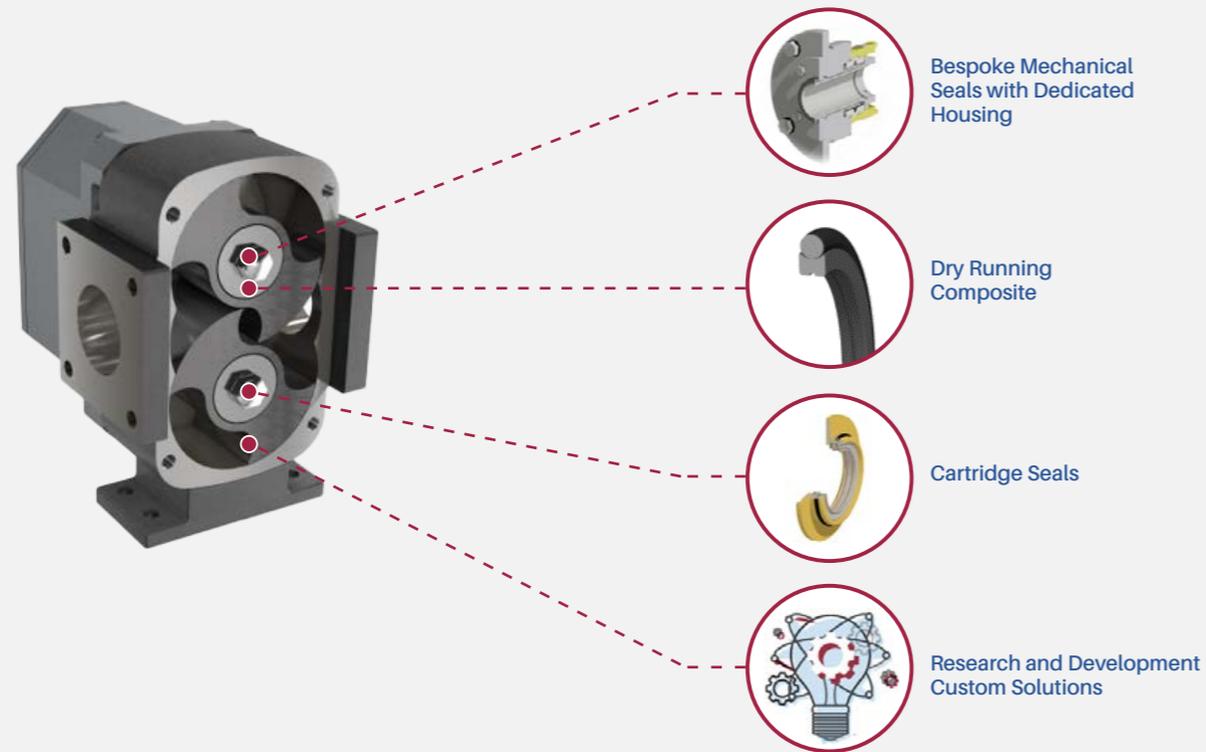
Cartridge seals

Cartridge seals offer an alternative to more traditional PD pump seals. They are self-contained units consisting of a shaft sleeve, seal and gland plate and are designed to reduce the risks commonly associated with seal failure.

Optimising Performance

Positive Displacement Pumps

FTL engineers work extensively on the challenges faced by positive displacement pump manufacturers and have developed solutions to address issues in these areas:



Key Features

Improving product reliability with pioneering sealing solutions

Solving problematic applications through bespoke designs

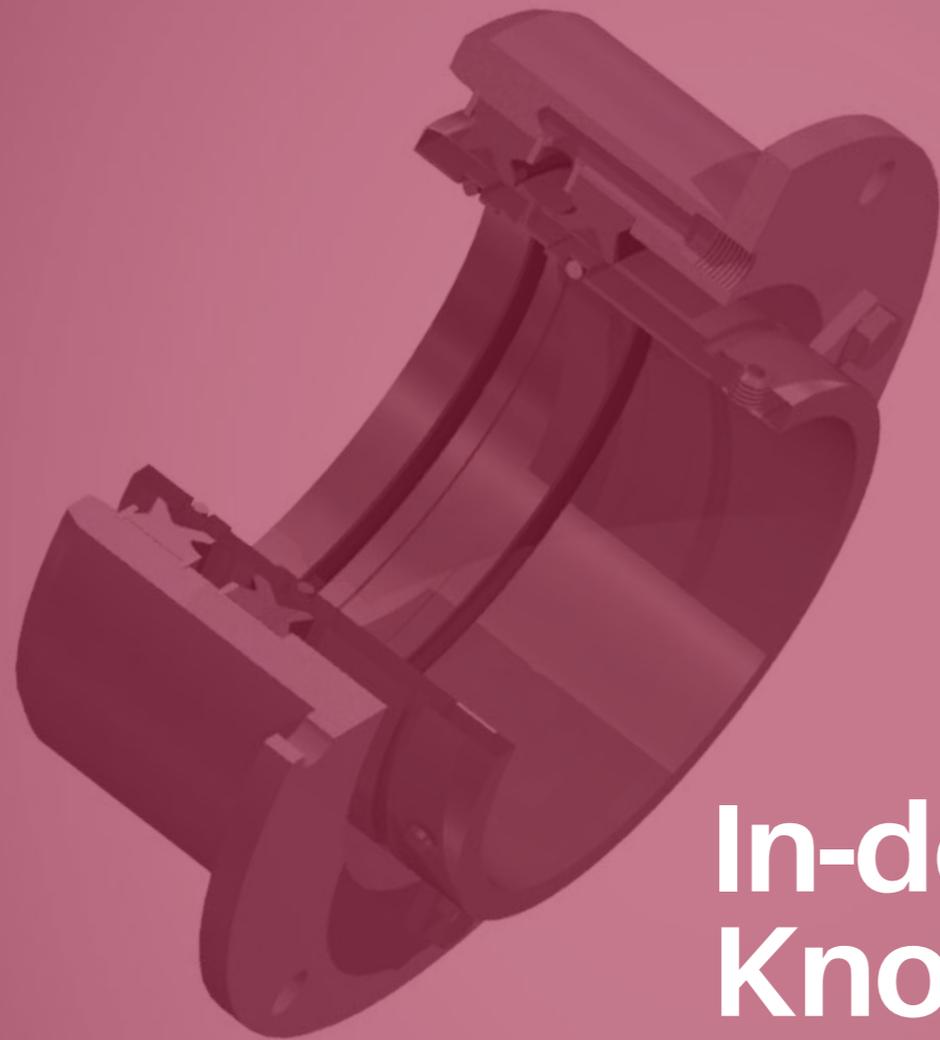
Reducing maintenance costs by extending the life of wear parts

Supporting next generation product design

Enhancing assembly with easy to fit sealing solutions and housing arrangements

Compliant to 3A and FDA requirements

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In-depth 
Knowledge

Dry Running & Chemical Resistant Rotary Composite Seals

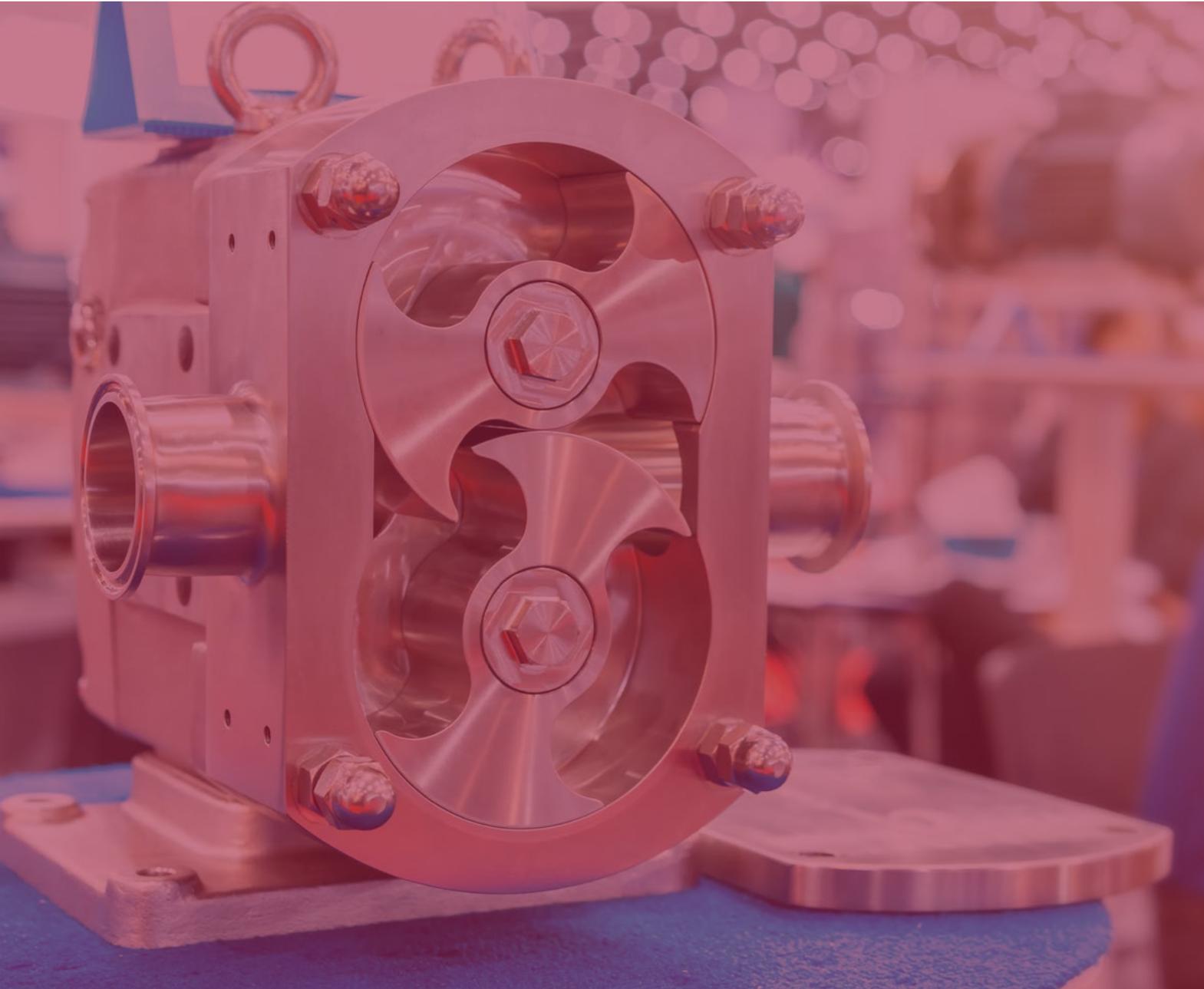
The FTL 0212 Series Dry Running Seal is a double acting rotary composite seal and is distinguished by minimal break-away and dynamic friction and is therefore also suitable for pumping low-lube products. The design enables fast reaction in rotary seal applications where pressure peaks are seen.

Particularly well suited for sealing applications in Positive Displacement Pumps, aggressive chemical applications and applications that involve dry running scenarios.

Benefits Include:

- ✓ Excellent sealing performance for rotary applications
- ✓ Ability to allow dry running of pumps
- ✓ Broad chemical compatibility
- ✓ Suitable for applications with pressure peaks
- ✓ Ideal for limited axial space applications
- ✓ Accommodates pump shaft deflection
- ✓ Excellent wear characteristics
- ✓ Simple installation
- ✓ Customisable to suit existing housing

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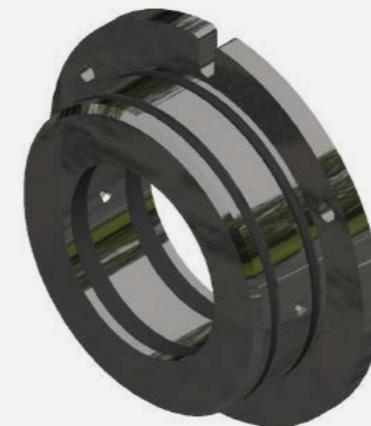
Sealing Solutions for Viscous Media

Our expertise has enabled us to develop a unique seal solution for positive displacement pumps which are used to distribute viscous media.

Our high performance seal systems have a proven track record of service on Rotary Lobe and gear pumps where mechanical seals fail to deliver.

Benefits Include:

- ✓ Excellent sealing performance for rotary applications
- ✓ Non-clogging / Non-sticking in viscous medias
- ✓ Materials development to provide excellent chemical resistance
- ✓ Suitable for applications with pressure peaks
- ✓ Ideal for limited axial space applications
- ✓ Excellent wear characteristics
- ✓ Customisable to suit existing housing
- ✓ Predictable seal life and wear characteristics



Research & Development Centre of Excellence

FTL's Research & Development Centre of Excellence is a cutting-edge dynamic testing facility for validating reciprocating sealing solutions developed for PD Pump applications.

This unique testing facility can run for a minimum of 500hrs and simulate working application parameters such as running speeds, pressures, media, surface conditions, temperature (to a degree), shaft misalignment, atmospheric conditions (Dirt, Sand etc) in order to deliver accurate test results.

A comprehensive consultancy service, combined with component design and development, all backed up by state of the art in-house testing, measurement and, R&D centre of excellence for rotating and reciprocating sealing applications, enables FTL to support the next generation of product designs.



The advantages of utilising FTL's test facility include:



Supporting next generation product development with in-house testing and validation.



Reduced assembly complexity, optimising seals for critical applications.



Enhancing customers environmental impact through sealing design.



Improving product reliability through validation and customer specific test programmes.



Increasing market position through partnership and innovation.



Close collaboration between our engineers and you, at every stage in the process.

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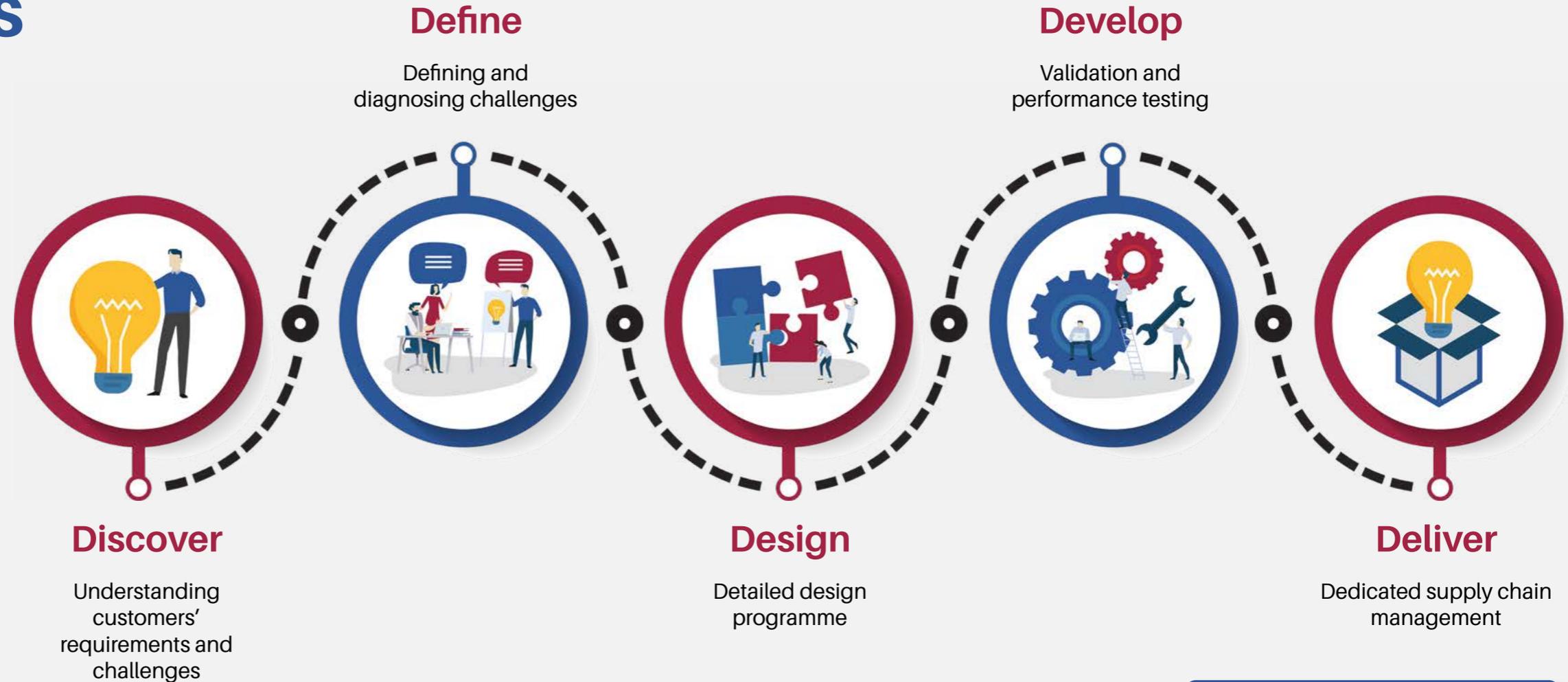
Our Process

FTL partner with you from initial concept to commercial reality.

We provide a collaborative consultancy service for any sealing requirement, from a single custom seal component to a complete complex sealing system.

Our business model is designed to meet fast-changing customer needs, working with customers to identify opportunities for improvements in formulations, production processes and operation infrastructure.

We draw upon a breadth of industry knowledge to provide dynamic and effective sealing solutions, that deliver revenue and results for customers across the globe.



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