Plunger Pumps

In-depth sealing solutions

Introduction

FTL has been solving sealing problems in plunger pump applications for over 25 years.

Our introduction to plunger pump sealing was at the high pressure sealing interface. Back then, what was considered high pressure is significantly lower than today, where sealing systems now regularly perform at 3000bar and above.

In recent years, we have expanded our plunger pump solutions to include the latest innovations in low pressure and crosshead sealing systems. These developments have been made possible through a three-year programme of extensive in-house and field trial testing.

Optimising Performance

At FTL, we recognise the importance of optimising plunger pump performance through better performing sealing systems.

Our specialist sealing engineers know that ‘one size fits all’ solutions aren’t appropriate considering the broad range of industrial applications in which plunger pumps are used.

While we incorporate design influences, fully optimised proposals are provided that consider each individual application parameter in order to maximise sealing performance.

Continuous Innovation

FTL engineers posses a comprehensive working knowledge of the constantly changing operating characteristics and environments within which these pumps operate.

They understand how the changing pump orientation between horizontal and vertical has an impact on the performance requirements of the sealing system.

We’re no longer merely concerned about pumped media leaking, but we must also consider the negative impact of ingress into the crankcase.

Click here to find out more

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.

Define

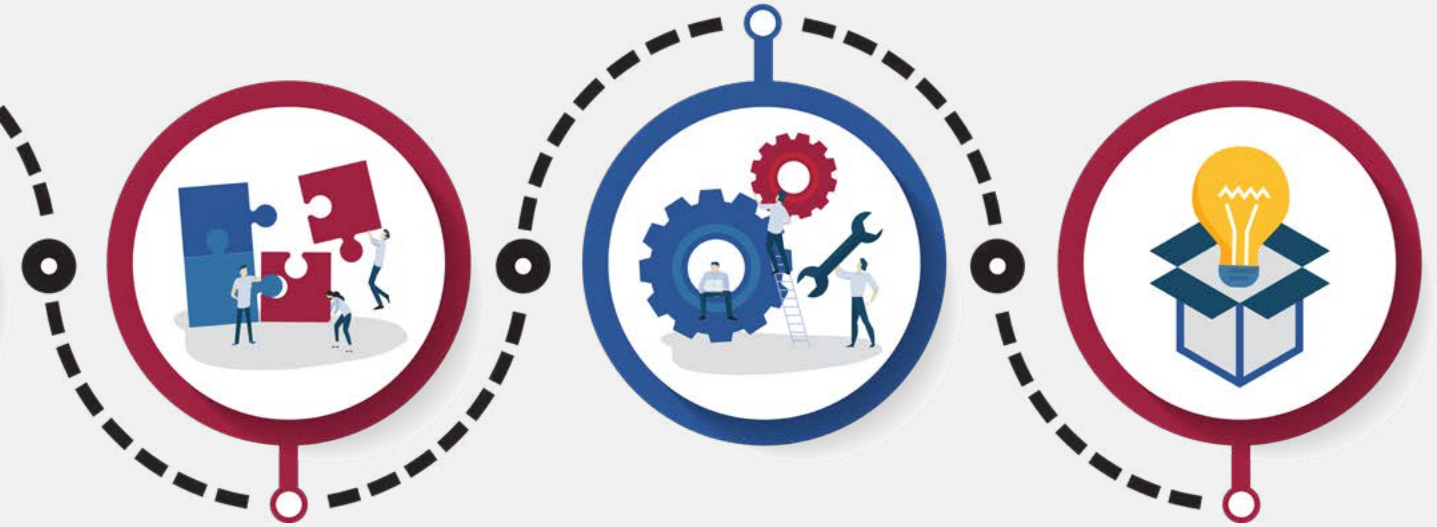
Defining and diagnosing challenges

Discover

Understanding customers' requirements and challenges

Develop

Validation and
performance testing



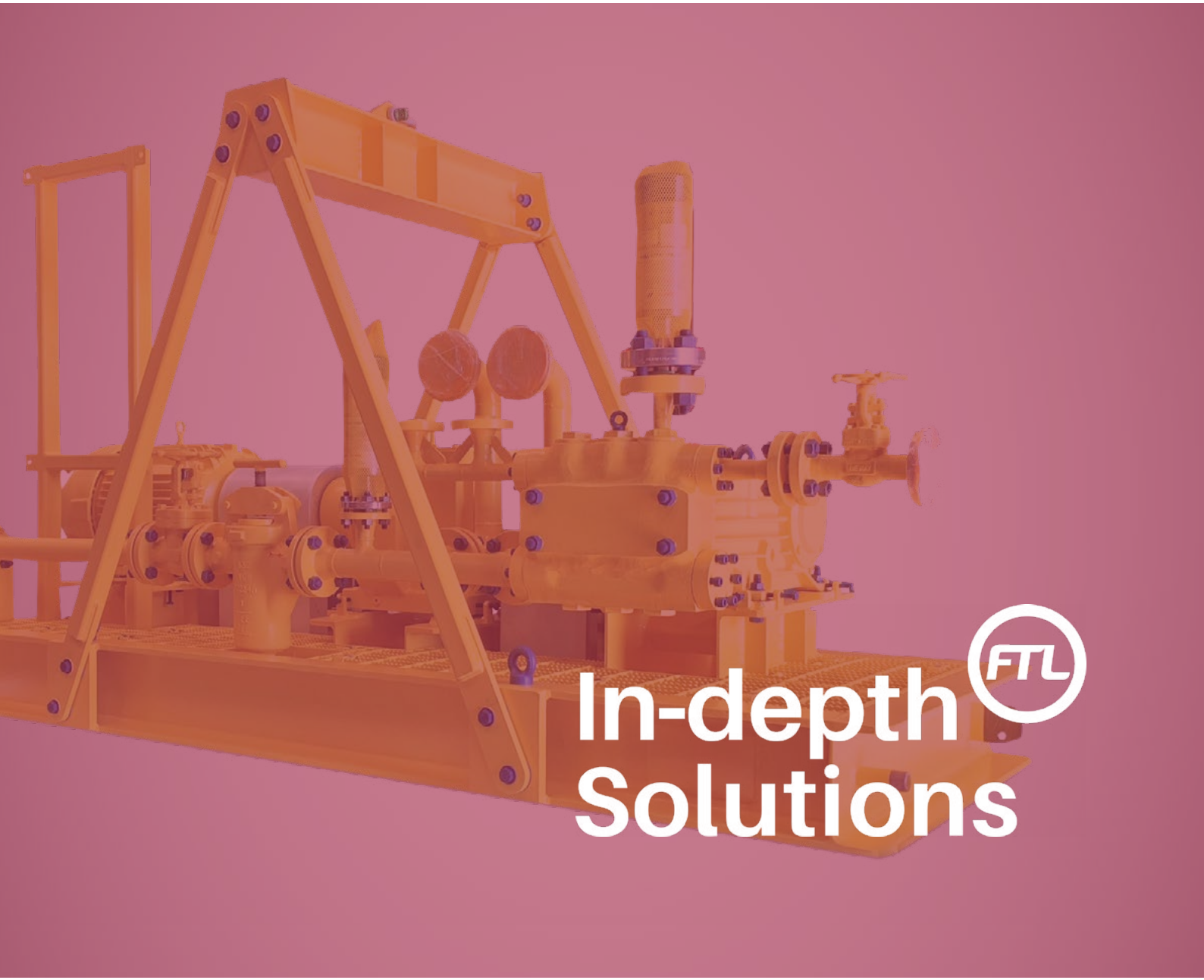
Design

Detailed design
programme

Deliver

Dedicated supply chain
management

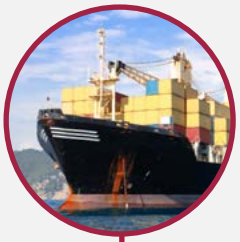
Click here to find out more


In-depth
Solutions

Applications

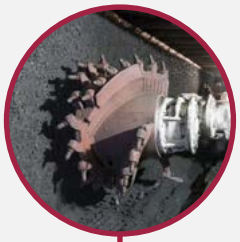
Fracking
Slop Pumps
Umbilical flushing
Hydrostatic flushing
Water blasting/descaling
Glycol/methanol injection

Forging and extrusion
Drain and sewer cleaning



Ship and submarine descaling
Tank and vessel cleaning
Cleaning subsea structures

Descaling during hot rolling
Coke oven cleaning
Fire resistance fluids

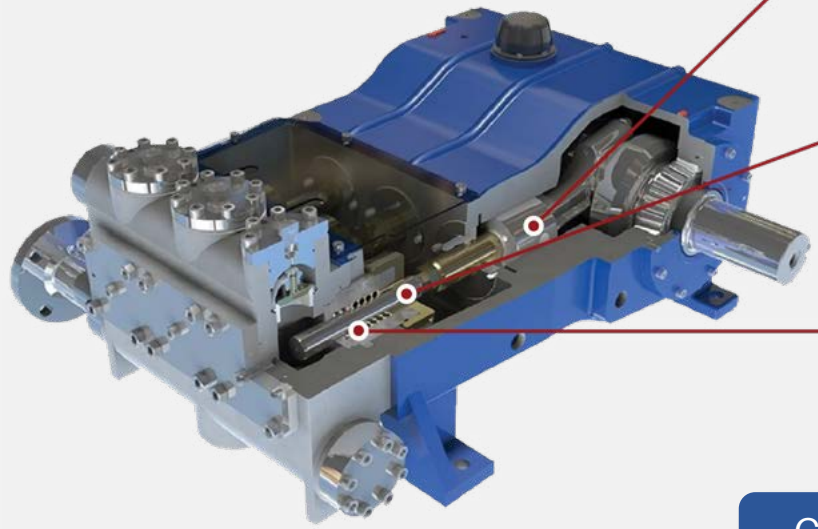


Long wall systems
(Mining supports)

Optimising Performance

Plunger Pumps Solutions

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



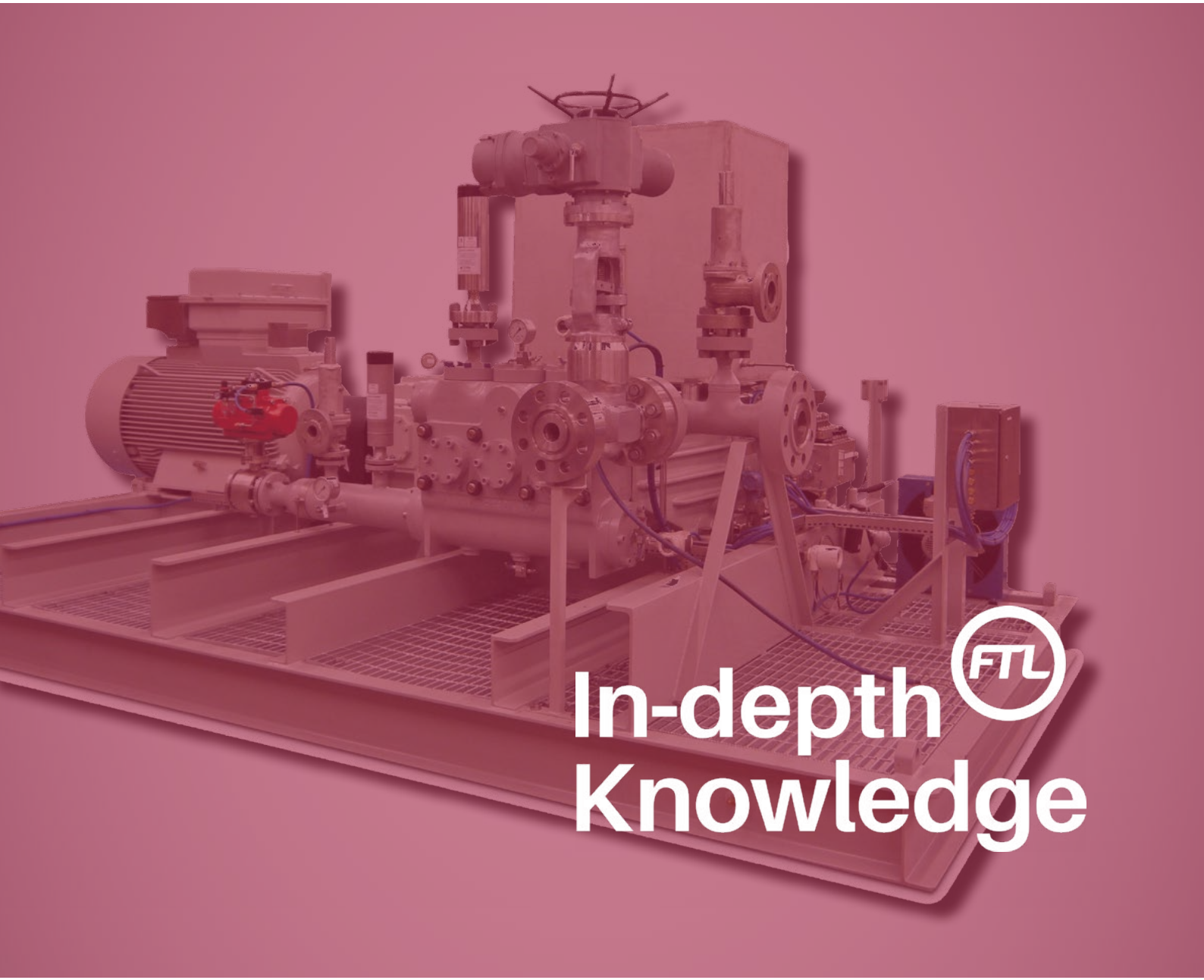
Crosshead seal

Low pressure seal

High pressure sealing

Click here to find out more

Features	Advantages
Self-lubricating	• Longer service life • Dry running • No additional lubrication needed
Low friction	• Reduced power consumption
Dry running	• No additional lubrication needed
Live loading	• Reduced low pressure leakage • Controlled wear loss
Spiral wound design	• Ease of install • Reduced leakage path • Fewer joints
Cartridge assembly	• Ease of installation


In-depth
Knowledge

High Pressure Sealing

High Pressure Solutions

For high and ultra-high pressure sealing, FTL utilises bespoke packing sets produced from some of the most innovative materials available.

A high performance seal is integrated into a comprehensive sealing assembly that considers existing geometry and pump design and compliments them by taking into account the plunger guidance and housing tolerances – all manufactured based upon the exact operating characteristics of your equipment.

Benefits Include:

- Lower running costs
- Lower set up costs
- No cross contamination
- Predictive maintenance
- Reduction of installation errors
- Longer seal life
- Reduced leak path of sealing element
- Reduced downtime
- Easier installation
- Improved low pressure and static leak performance
- Can be provided in Kit form and/or OEM packaging
- Does not require post start up adjustment

Low Pressure Sealing

Low Pressure Solutions

Low pressure seals, sometimes referred to as bypass or wash-off seals, are designed to compliment the performance of the high pressure seal. FTL has a proven range of seal designs in a variety of materials, optimised by our sealing experts to suit the specific demands of your application.

Benefits Include:

- Dry running capabilities
- Sealing at low pressure and high speeds
- Safeguards performance of high pressure sealing system
- Condition monitoring of high pressure seal
- Prolongs life of high pressure seal within a cooling system
- Reduced lubrication requirements
- Elastomer seals available to help

Cross Head Sealing

New Technology

Crosshead seals in traditional elastomers have been in FTL's portfolio for many years. However, evolving technologies and the demand for faster running pumps, as well as changes in pump orientation from horizontal to vertical, have driven a need for a range of seals to meet these challenges.

In response, FTL engineers have strengthened the plunger pump seal portfolio with new seals from low friction materials, along with specially designed seals to protect the pump crankcase from both oil leakage outwards, and ingress from process or environmental fluids.

Benefits Include:

- Zero leakage
- Elimination water ingress into the crank case
- Asset protection
- Longer seal life
- Optimise pump performance
- Reduced downtime
- Keeps oil in the crank case
- Wipers available to prevent envirnomental ingress (dust and dirt)
- High linear velocity elastomer seals available facilitating easier installation.
- Seals can be produced to suit existing groove dimensions.

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 Plunger 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, temp (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.

Click here to find out more

The advantages of utilising FTL's test facility include:

- Supporting next generation product development with in-house testing and validation.
- Enhancing customers environmental impact through sealing design.
- Increasing market position through partnership and innovation.
- Eliminating fluid ingress into the crankcase – preventing catastrophic failures to the crankcase.
- Improving product reliability through validation and customer specific test programmes.
- Reducing costs through oil capture within the drive end of High Pressure Pumping systems.

Customer Testimonials

"I have known some of the sales and design engineers at FTL for 25 years or more. Their level of expertise has been maintained. The help and assistance when we are looking at sealing arrangements is invaluable, and they are always quick to respond. We use FTL's solutions for all pump assembly sealing requirements, for both rotary and dynamic applications associated with oil lubrication and water hydraulics.

I have no hesitation in recommending FTL to our customers and contacts when the occasion arises, and there is always good feedback. They have excellent customer facing engineers with a dedication to making sure the customer gets a product that will work - particularly in relation to heavy industry in the UK."

Engineering Project Manager,
Global High Pressure Systems OEM

" I have no hesitation in recommending FTL to our customers and contacts. "

"As a company we have worked with FTL for a number of years, if not over a decade. I myself have had the pleasure of working with them on behalf of the Supply Chain team.

One of the great benefits of working with FTL are the stock holding agreements we have in place. This makes it easier for us to know the stock is ready when needed, and for FTL to be able to plan production. Once a SHA is running low we will always be notified and asked if a new agreement is required.

All the team are helpful, always provide a great level of service and respond in a timely manner. I would highly recommend FTL."

Engineering Project Manager,
Global High Pressure Systems OEM

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W: ftl.technology
E: sales@ftl.technology
T: 0113 252 1061

IDEX
SEALING SOLUTIONS