Omniseal Solutions
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LIFE SCIENCE CASE STUDY

IN VITRO DIAGNOSTIC (IVD) PLUNGER PUMP

SAINT-GOBAIN

OMNISEAL® SPRING-ENERGIZED SEALS

In Vitro Diagnostic (IVD) Plunger Pump

Ronelle Decker July 2021

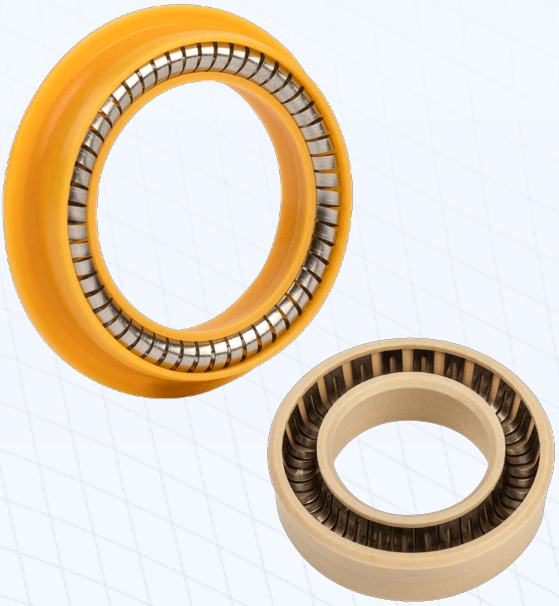
LIFE SCIENCE LONGER LIFETIME CHEMICAL RESISTANCE

Environment

The heart of global life science laboratory industry may well be in vitro diagnostics (IVD) equipment, which is used in the diagnosis of infectious and chronic diseases as well as preventative care and drug therapy monitoring. This equipment tests biological specimens such as blood, cells, urine, saliva and tissue. As point-of-care medical devices, IVDs must be safe, reliable and appropriately validated to uncover critical results that directly influence patient care.

Challenge

IVD systems are required to run faster and longer than previous generations, leading OEMs to seek low friction and chemically resistant materials that handle the various reagents used. OEMs also want technologies that are smaller, lighter weight, easier to use and reduce cost. IVD equipment manufacturers are looking to extend seal life for over 1 to 2 million cycles for improved maintenance.



Solution

Omniseal® 103 or 400 spring-energized seals can be used in IVD analyzer plunger pumps for Clinical Chemistry, Hematology, Immunoassay and Urinalysis sectors.

These spring-energized seals have successfully delivered on improved cycles for lifetime confidence. The Omniseal® provides longer maintenance cycles and lower overall cost of ownership due to the seal's chemical inert and heat resistant properties and precision fit.

Low friction, precision-loaded seals more than double the life of a poorly designed seal. The result? Longer maintenance cycles & lower overall cost of ownership.

Global engineering teams work closely with customers and research current solutions within the in vitro diagnostics market. Combining in house knowledge of low friction, chemically inert plastics with application expertise, the team successfully delivered the right material and spring that delivers longer cycle times and provide on cost savings for end-users.

The engineering team also completed in-house wear testing and compression ratio testing cycles to confirm the long cycle life of the seals.

Benefits

- In-house knowledge helps our team to co-develop and understand the requirements for an IVD plunger pump seal to achieve low friction, maintain precise flow rate, be chemically inert, be smaller and lighter weight and improve maintenance cycles that delivers on IVD end-user cost-efficiency.
- Other solutions offered in IVD equipment include our Rulon® wear pads and Meldin® composite material bearings for extended service life and low coefficient of friction.

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Design Expertise & Tailor-made Solutions for Your Critical Applications

Omniseal Solutions™ is a global engineering leader with over 65 years of historical legacy, relentlessly dedicated to the design and manufacture of precision sealing and material solutions that protect critical applications in the most demanding environments and passionately driven to push *Beyond the Boundaries of Possible*.

About the Author

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