



Water & Wastewater

# Flygt mechanical face seals

Genuine spare parts – No worries



*Engineered for life*



## What makes a pump a Flygt pump?

Reliability is no accident. It's a question of step-by-step improvements, component by component. By eliminating all the weak links in the chain, you get a pump you can really trust. We've been making seals ever since we launched the world's first submersible pump in 1948. Because the sealing system is the heart of a submersible, we make no compromises. Not only do we develop all seals ourselves, but we've even kept manufacturing strictly in-house.

**Genuine spare parts from ITT Water & Wastewater – No worries**

The result is a sealing system that gives you fewer problems and lower overall costs. In other words – no worries.

What makes a pump a Flygt pump? Read on and discover how we've eliminated every conceivable weak link to give you products that set the standard for reliability.

**The fastest parts delivery in the business?**

When you need a spare part, you want it fast. At ITT Water & Wastewater, we keep an exceptionally high number of spares in stock – and that means rapid delivery. We also have the expertise to help you match the right part with the special demands of your application.

# The heart of a pump

Depending on the specific application at hand, a pump is expected to withstand a wide range of formidable challenges, and the first line of defense is the face seal. ITT Water & Wastewater offers a comprehensive range of Flygt genuine seals – all developed and manufactured in-house to ensure outstanding performance, durability and every aspect of operational efficiency. For example, the new generation of small mechanical seals comes with an easy-to-use mounting tool.



## Wear, corrosion and aggressive media

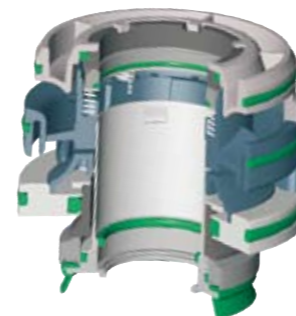
Together with metallurgists we have developed a unique tungsten carbide alloy that combines good corrosion resistance with high durability. The result is a surface material that provides long-term reliability under the toughest conditions, including corrosive environments, high pressures and poor lubrication. For seawater and low pH media, we also offer silicon carbide seal faces; almost as durable as tungsten carbide, they provide excellent resistance to acidic and chloride liquids.



The Active Seal™ efficiently pumps media from the drive-unit side to the buffer-fluid side of the inner seal. No liquid is allowed to penetrate the inner seal to the dry side. One vital feature of the new technology is the precision, laser-cut grooves. The high pressure at the tip of the grooves forces any liquid to flow to the outer circumference of the seal ring and back to the buffer fluid compartment.

## Staying flat

In most seals, high temperatures can make the seal surface slightly convex, reducing the sealing effect. Therefore, at ITT Water & Wastewater, we build a slight concavity into our seals – just a few fractions of a micrometer. Once pumps are running and the seals get warm, they become perfectly flat.



## Staying cool

In many applications the water level can get so low that air is sucked in together with the pumped liquid. Enclosed in a pocket of air, ordinary seals are no longer cooled by the water, which increases the risk of overheating and leakage. Flygt seals are designed differently; they transfer heat efficiently to the surrounding material, so the seals stay cool even when running dry.

## Active Seal™ ensures zero leakage

All mechanical face seals allow a certain minimal penetration of liquid between the seal faces to maintain lubrication and efficient sealing capacity over time. However, even minimal leakage may cause problems especially for pumps and mixers in continuous operation. We know that such accumulated and unattended leakage can lead to costly problems such as emptying the inspection chamber or the stator housing or in worst cases - machine failure. Active Seal™ technology minimizes the risk of this and ensures zero leakage. Trouble-free performance without unscheduled maintenance makes for significantly lower operating costs.

## Griploc™ – robust 20–35 mm seals in uniform design

All mechanical face seals in the Ø 20–35 mm range are wear, heat and clog resistant, ensuring trouble-free operation and extended life in challenging environments. Solid seal rings minimize leakage and a patented griplock spring is tightened around the shaft, providing axial fixation and torque transmission. Importantly, they share the same design, which facilitates learning and enables quick and correct assembling and disassembling. The only tool you need is included in the package and very easy to use.



## Plug-In™ seals – minimizing human error

Many seals fail because they are carelessly handled or incorrectly installed. Plug-In™ is a cartridge seal that eliminates the risk of mistakes. The inner and outer seals are factory-assembled, protecting the seal from any contamination that could cause leakage. And the integrated design prevents fibers from clogging up the springs that hold the seal together.





# Putting more Flygt in your pump

Building better pumps is a matter of constantly adapting to change and continuously improving our range. While ITT Water & Wastewater has a reputation as an innovator of new products, the work we do to improve existing models is less well known. Every day we meet customers, receive phone calls and e-mails, answering your questions and listening to your needs.

### Improvements big and small

Some of the improvements we make are small, some more comprehensive. Our mid-range pumps are a good example of a more extensive change. By developing an entirely new platform – including new motors, seals, hydraulics and bearing arrangements – users get a more robust pump that offers greater value for money than ever before.

A smaller improvement, of which many are unaware, is Spin-Out™. We found that sand and other abrasive solids have a tendency to find their way into the area behind the impeller, known as the seal chamber. There the particles rotate, wearing down the outer seal and the oil-house bottom. Spin-Out™ consists of a spiral groove in the oil-house bottom that spins all solids out of the seal chamber. The results have exceeded expectations: in some cases, seal lifetime has been increased by up to 50 percent. You won't be able to read about all the improvements we make in our literature – product evolution is second nature to us, so we don't make a big fuss about it. But next time you order a spare part or product, you will automatically receive the new improved version, benefiting from our constant striving to put more Flygt in your pump.





### What can ITT Water & Wastewater do for you?

Integrated solutions for fluid handling are offered by ITT Water & Wastewater as a world leader in transport and treatment of wastewater. We provide a complete range of water, wastewater and drainage pumps, equipment for monitoring and control, units for primary and secondary biological treatment, products for filtration and disinfection, and related services. ITT Water & Wastewater, headquartered in Sweden, operates in some 140 countries across the world, with own plants in Europe, China and North and South America. The company is wholly owned by the ITT Corporation of White Plains, New York, supplier of advanced technology products and services.

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