

# Parts for Flygt N-technology

Flygt N-pumps take on the toughest applications to get the job done. Every component is designed and manufactured to deliver sustained high efficiency.

Thanks to the patented N-technology with its innovative self-cleaning impeller, Flygt N-pumps deliver the highest total efficiency, while lowering your energy bills and reducing unplanned maintenance costs. That adds up to total peace of mind – and big savings over time.



## Resistant materials secure consistent performance

### Hard-Iron™ for the toughest wastewater challenges

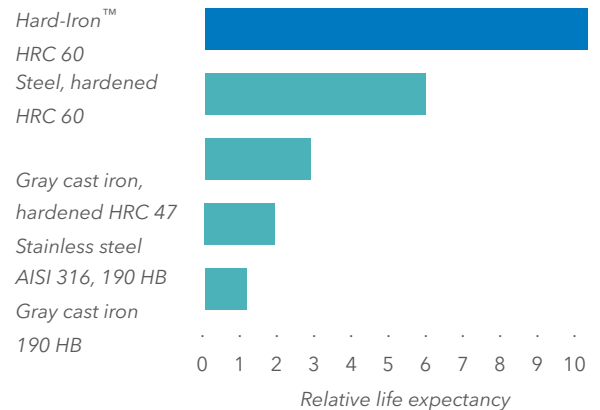
With its 25% chrome content, Hard-Iron™ is a unique alloy with superior hardness for the toughest wastewater applications. A more durable alternative than conventional or hardened cast iron, Hard-Iron offers higher wear and erosion-corrosion resistance, higher sustained efficiency and longer impeller lifetime than any other alternative on the market. The relative impeller lifetime with Hard-Iron is approximately 10 times longer than gray cast iron and three times longer than hardened gray cast iron, which is used for standard Flygt impellers.

Hard-Iron is recommended for wastewater applications with high oxygen content, such as aerated zones in treatment plants, wastewater with chloride content greater than 500 ppm and applications with abrasive particle content.

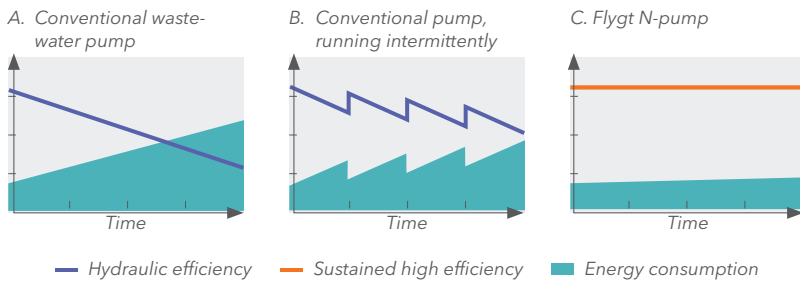
Accelerated wear tests prove that Hard-Iron hydraulic components keep on working efficiently with minimal wear even when pumping water with a very high concentration of coarse sand.

### Cast iron impeller with hardened edges

Standard Flygt impellers in gray cast iron with induction-hardened edges provide high hardness (HRC 47), high wear resistance and long lifetime. In fact, their relative life expectancy is two to three times longer than conventional non-hardened cast iron impellers.



## Sustained pumping efficiency



At Xylem, we have developed our own design programs and engineering tools that iterate against CFD simulations in order to get the highest possible efficiency without compromising self-cleaning performance or minimized power consumption.

## Self-cleaning design

The swept leading edge of the impeller, in combination with the relief groove in the insert ring, provides effective self-cleaning performance. If an object gets caught on the leading edge of one of the vanes, it is swept towards the perimeter of the inlet. The object will slide along the tip of the impeller vane, inside the relief groove. The guide-pin arrangement pushes all types of solids away from the center of the impeller, thereby preventing blinding of the inlet.



## Cutting groove



### Seal protection

Fibrous and stringy objects can wind around rotating cylindrical surfaces, such as the shaft. Flygt N-pumps are therefore designed with a tight gap and induction-hardened cutting groove between the impeller and the seal housing cover, which prevents objects from entering the space above the impeller thereby reducing the risk of seal failures.

## Tight tolerances

### Secure high pumping performance

Thanks to reliable, high-precision manufacturing processes, the Flygt N-impellers are supplied with machined gap surfaces that ensure delivery of the required pump performance. These machined gap surfaces result in much tighter tolerances compared to cast surfaces.



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## Well-balanced design

### Reduced bearing loads and minimized risk of vibrations and hydraulic imbalance

The unique two- or three-bladed impeller design minimizes radial forces because it is hydraulically balanced during manufacture. This complex balancing technique requires design knowledge as well as specialist equipment.

Use of a repaired or re-engineered impeller that is incorrectly balanced can increase the risk for clogging and hydraulic imbalance, causing high bearing loads.



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## Easy clearance adjustment and impeller disassembly



The impeller sleeve unit facilitates tight tolerances and easy adjustment of the clearance between the impeller and insert ring, which is very important to ensure high efficiency.

Adjustment only requires standard tools, and the impeller can easily be disassembled with a hexagon bit adapter. Tightening of the sleeve unit screw creates a pressure on the shaft end, which lifts the impeller away from the sleeve.

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## Flexible, modular design

Flygt N-technology allows the hydraulics to be tailored to meet the requirements of virtually any application. Choose the induction hardened gray cast iron version (HRC 47) for typical wastewater applications, the Hard-Iron™ version (HRC 60) for abrasive and corrosive applications, and the chopper ring version for cutting long fibers or solids in wastewater.

Gray cast iron



Hard-Iron

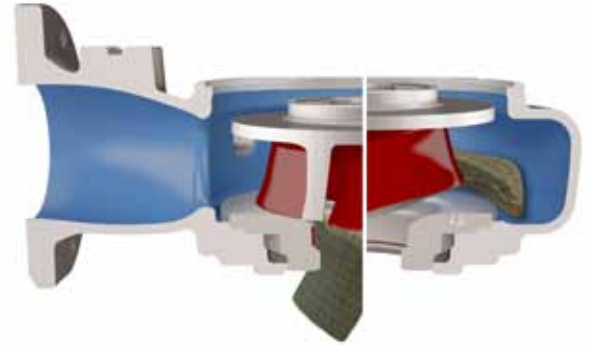


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## First Flygt N-technology, now the revolutionary Adaptive N

In addition to self-cleaning N-technology, Xylem has developed Adaptive N-hydraulics, which further improves clog-free, energy-saving pump performance. Adaptive N-hydraulics enhances the self-cleaning characteristics of N-technology for continuous, trouble-free pumping. This is achieved through the unique axial movement of the Adaptive N-impeller.

The Adaptive N-impeller is designed to move axially upwards when needed, enabling the most bulky of rags and toughest of debris to pass through smoothly. When the impeller is free of debris, hydraulic pressure returns the impeller to its original position. The axial movement reduces stress on the shaft, seals and bearings, thereby extending their lifespans. Ultimately clog-free performance requires little to no maintenance. All in all, the Adaptive N-hydraulics assure highly economical and reliable pumps that give you peace of mind.



*The Adaptive N-impeller enables axial movement, allowing bulky material and tough debris to pass through.*

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## Flygt N-pump upgrading kits



### **Competitively priced upgrade kits for easy handling**

These kits include all the hydraulic parts required to convert Flygt C-pumps to N-technology.

Available for Flygt pumps 3085, 3102, 3127, 3140, 3152, 3170, 3201 and 3300.