FLYGT

a xylem brand

Genuine Flygt Parts

Quality. Reliability. Total peace of mind.

Genuine Flygt Parts – Total Peace of Mind

- Superior quality
- Only the best materials
- Innovative technology
- Specifically developed, or carefully selected, to work perfectly with Flygt products
- Ensure a trouble-free operation

Avoid the risk of unplanned downtime and costly damage to your Flygt equipment – use Genuine Flygt Parts only!

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100 % Flygt – Forever!

- Your Flygt pump or mixer will work at its optimal performance level only with Genuine Flygt Parts.
- Make sure that your Flygt pump or mixer stays 100% Flygt, use Genuine Flygt Parts!

FLYGT a xylem brand

Griploc™ seals

Robust design. Quick and secure mounting.

FLYGT a xylem brand

Highlights

- Resistant to heat
  - Reliable high-temperature performance with heat-resistant FPM elastomers
- Resistant to clogging
  - Open external coil spring housing
- Resistant to wear
  - Suitable for abrasive applications
- Outstanding leakage prevention
  - Seal faces maintain their flatness to prevent leakage

Highlights

- Patented Griploc™ functionality
  - Secure locking to shaft
  - No rubber friction, no grub screws & no shaft damage
- Reduced handling costs
  - Fewer versions reduces cost for spare part inventory
- Easy to use
  - Five seal dimensions - one installation procedure
  - Mounting tool included in each package for quick and secure mounting
- Active Seal™
  - Active Seal™ functionality minimizes risk of stator & bearing failure*

*included in selected Griploc™ variants

Highlights

Xylem is now introducing the complete range of Griploc™ mechanical face seals for Flygt products. The Griploc™ seal assortment includes seals for shaft dimensions Ø20-35 mm.

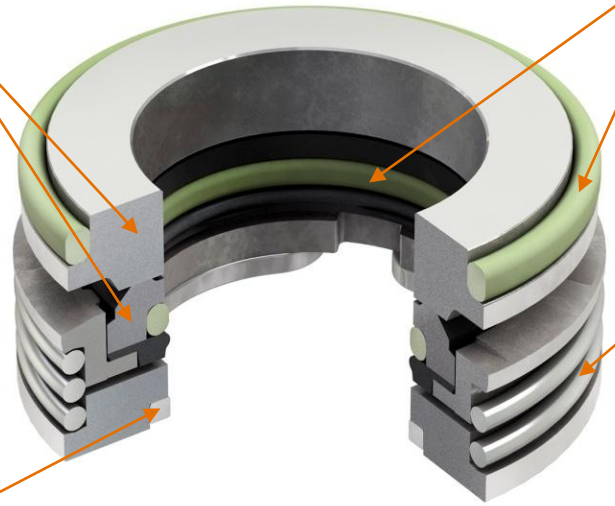
In addition, Active Seal™ functionality is applied to selected seal variants*

*Active Seal™ is currently being introduced for shaft sizes Ø25 mm and Ø35 mm.

Features

Solid seal rings
in corrosion resistant cemented carbide, aluminum oxide and reaction bonded silicon carbide.

Heat resistant materials only
Fluorocarbon rubber (Viton) for high temperature performance.



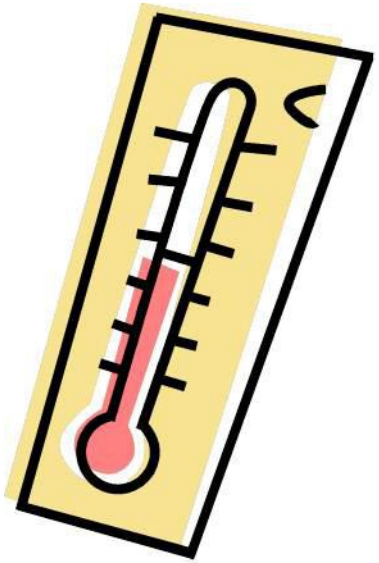
External coil spring
Clog resistent thanks to the open spring housing.

Patented Griploc™ functionality
Secure locking to the shaft. No rubber friction, no grub screws, no shaft damage.

Wear resistant torque drivers
Wear protection of the internal torque drivers makes the seal suitable for abrasive applications.

Features

Rating	Max. value
Pressure	16 bar
Temperature	90 °C
Speed	5,000 rpm
pH	1-14



Benefits

- Robust design
  - Consistent performance
- Uniform design
  - The same mounting procedure for all sizes
- Quick and secure mounting
  - Smooth service
- Fewer seal variants
  - Reduced spare part inventory

Quick and easy mounting

- Quick and secure
- Only one way to mount your seals
- No need for special service tools, mounting tool included in each seal package

Assortment

The Griploc™ seal assortment is extended to the following shaft dimensions

- Ø20 mm
- Ø22 mm
- Ø25 mm
- Ø28 mm
- Ø35 mm

35 mm

20 mm

The new Griploc™ seals replace seals for products both in the existing Flygt product range and for products no longer produced.

Assortment

Griploc™ seals are available for the following products

Shaft dimension	Pump or mixer
Ø20 mm	2037, 2060, 2066, 2075, 2076, 3041, 3050, 3057, 3060, 3065, 3067, 3068, 3075, 3076, 3080, 3085, 4351, 4352, 4400
Ø22 mm	2040, 2056, 2070, 2071, 2102
Ø25 mm	2650, 3102, 4630, 4660, 5520
Ø28 mm	2082, 2090, 2125, 2140
Ø35 mm	2135, 2151, 2201, 3126, 3127, 4440, 4451

Sales & delivery

Ø35 mm

	Spare part	In new products
Planned sales start:	Cycle 7, 2012 (Oct 1st)	Cycle 8, 2012 (Nov 13th)

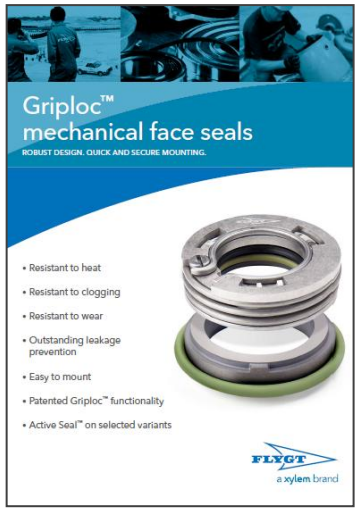
Ø22 mm, Ø25 mm, Ø28 mm

	Spare part	In new products
Planned sales start:	Cycle 8, 2012 (Nov 13th)	Cycle 1, 2013 (Jan 1st)

Promotion

- Flyer (sales leaflet)
  - Highlights the most important sales arguments
- Features and Benefits Paper
  - Detailed, more technical information
- Roll-up/Poster
- PowerPoint presentation
- Intranet/Oasis
- Internet/www.flygt.com
- Motion graphic/marketing movie

Roll-up



Flyer

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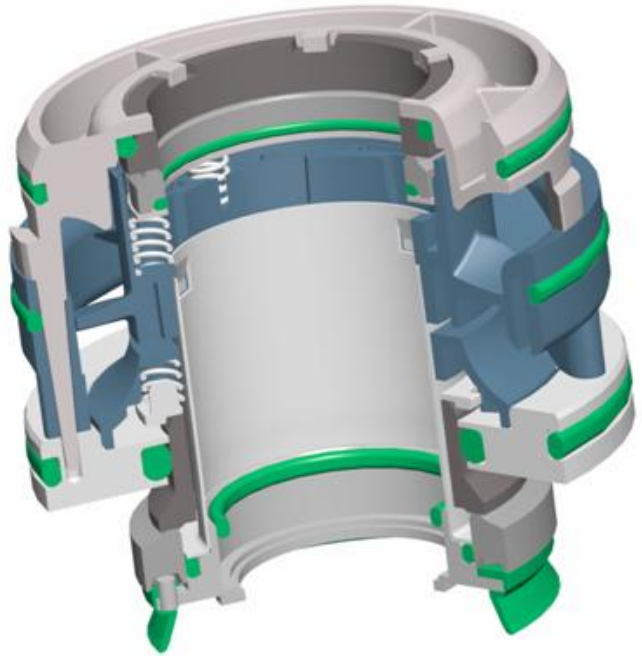
Plug-in Seals™

Double mechanical seal in one easy-to-install unit

FLYGT a xylem brand

Highlights

- Inner and outer seal in a single unit assembly
- Outstanding leakage prevention
- Solid seal ring design
- Durable and resistant materials
- Quick and easy to install
- Integrated cooling pump
- Active Seal™ functionality on selected variants
  - Applied to the inner seal only



FLYGT a xylem brand

Double mechanical seal with single unit assembly

- Seal faces remain protected from contamination
- Springs are protected from corrosive pump media and clogging
- Thorough testing secures airtightness
- No special service tools required
  - Quick and easy to install
- Inner- and outer seal replaced at the same time, securing overall sealing reliability

FLYGT a xylem brand

Uniform seal design

- Same installation and service procedures for all Flygt products with Plug-In Seals™
- The uniform design facilitates easy and correct mounting of the seal

FLYGT a xylem brand

Durable and resistant materials

- Seal rings in tungsten carbide composite (WCCR):
  - Unique grade exclusively developed for Flygt products
  - Extremely durable and wear resistant
  - High thermal conductivity and low thermal expansion
  - Good sliding properties
  - High bending strength and toughness
  - Used for the inner as well as the outer seal rings
- Seal rings in silicon carbide (RSiC)
  - Alternative material for outer seal ring
  - Great chemical resistance to low pH and chlorides
  - Excellent seal ring material in most applications

FLYGT a xylem brand

Durable and resistant materials

- Equipped with O-rings in Viton only
  - Withstand temperatures up to 250 ºC
  - Resistant to most acids and alkalis
- Seal housing in aluminium*
- Seal bottom in stainless steel*

O-rings in nitrile (left) and Viton (right) after test at 200 ºC

* In production January 2013, currently high temperature resistant seal body composite (PPS)

Integrated powerful cooling pump

- Efficient cooling flow for pumps with internal cooling system
  - The integrated axial-flow propeller between the inner and outer seals provides a positive flow and circulation of the barrier fluid, securing efficient cooling and lubrication that minimizes the risk of machine failure.

Unique seal ring design

- Solid seal rings minimize the risk of warped seal faces that cause leakage
  - One material design; seal faces formed of the same material mass as the rest of the ring
  - Faces cannot slip, become unattached from the ring, or warp to a non-sealing shape
  - Will not loose shape due to temperature changes or multi-material interactions

Unique seal ring design

- The mechanical torque lock ensures a reliable positive drive of the rotating seal ring
  - All seal rings are geometrically torque locked and does not rely on rubber friction. The torque lock will work in any rotation of the shaft.

Assortment

- The Plug-In series comprises six sizes, from 20 to 80 mm shaft diameter.
- Plug-In seals are available for the following Flygt products:
  - 2000-series: 2610, 2620, 2630, 2640, 2660 and 2670
  - 3000-series: 3153, 3171, 3202, 3301 and 3315
  - 4000-series: 4610, 4620, 4630, 4640, 4650, 4660 and 4670
  - 5000-series: 5100 and 5150
- Active Seal™ functionality on selected variants

Sales & delivery

- Available for delivery
- For more information, please contact your local Xylem representative

Promotion

- Flyer (sales leaflet)
  - Highlights the most important sales arguments
- Features and Benefits Paper
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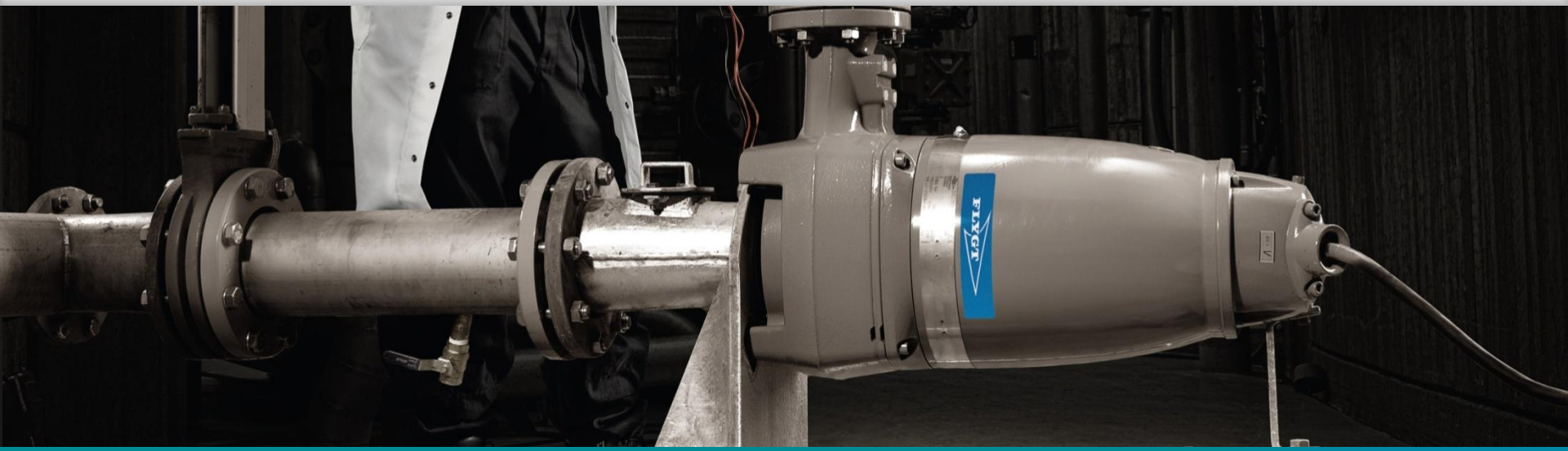

Shaft units

Secure reliable operation and consistent efficiency

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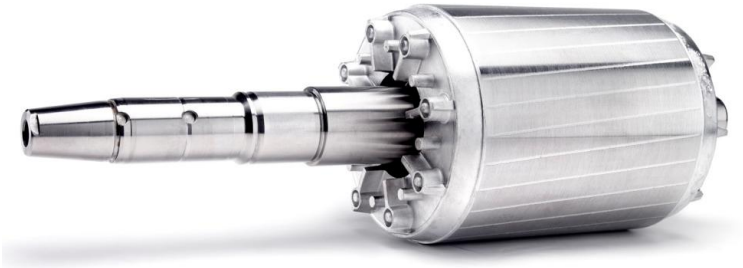
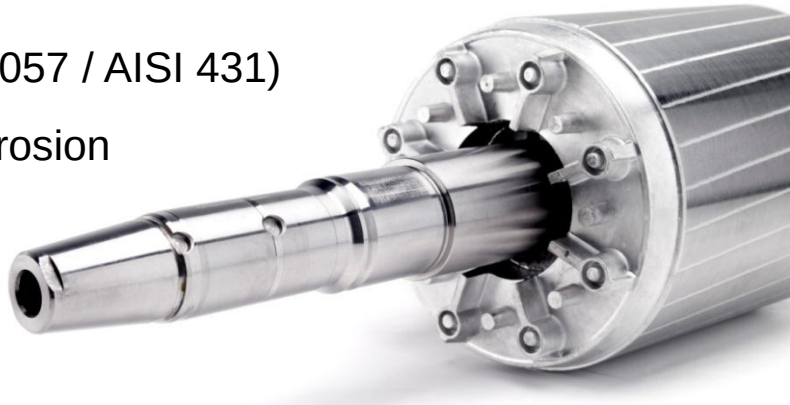
Highlights

- Ensure reliable operation
- Provide high and consistent motor efficiency
- Precise tolerances and proper balancing
- Carefully machined radiuses
- Durable and corrosion-resistant shaft
- Improved shaft and impeller assembly



Ensure reliable operation and consistent efficiency

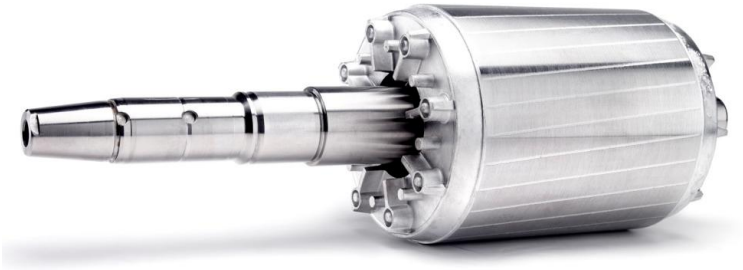
- Durable and corrosion-resistant magnetic shaft
  - Durable martensitic stainless steel (EN 10088-3-1.4057 / AISI 431)
  - High resistance to permanent deformations and corrosion
  - Prevents pitting
  - Correct magnetic properties without disturbing the magnetic field through the rotor



- A low quality shaft unit or one that has been repaired poorly may cause imbalance and increase the risk for e.g. vibrations, noise, stator- or bearing damages and even sealing failures. In addition, motor efficiency is reduced if the original shaft is replaced for a shaft with incorrect magnetic properties.

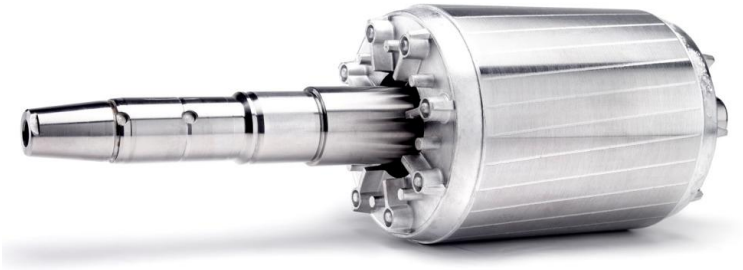
Highly accurate manufacturing processes

- Ensure precise tolerances and proper balancing
  - Precise tolerances facilitate correct fitting of impeller, mechanical seals and bearings. A proper and tight fitting of the shaft unit is crucial to ensure good running conditions for the mechanical seals, especially the tolerance limits for the sealing positions, and of course to prevent malfunctions of the overall rotating system.
  - Proper balancing minimizes the risk of sealing or bearing failures, excessive noise and vibrations



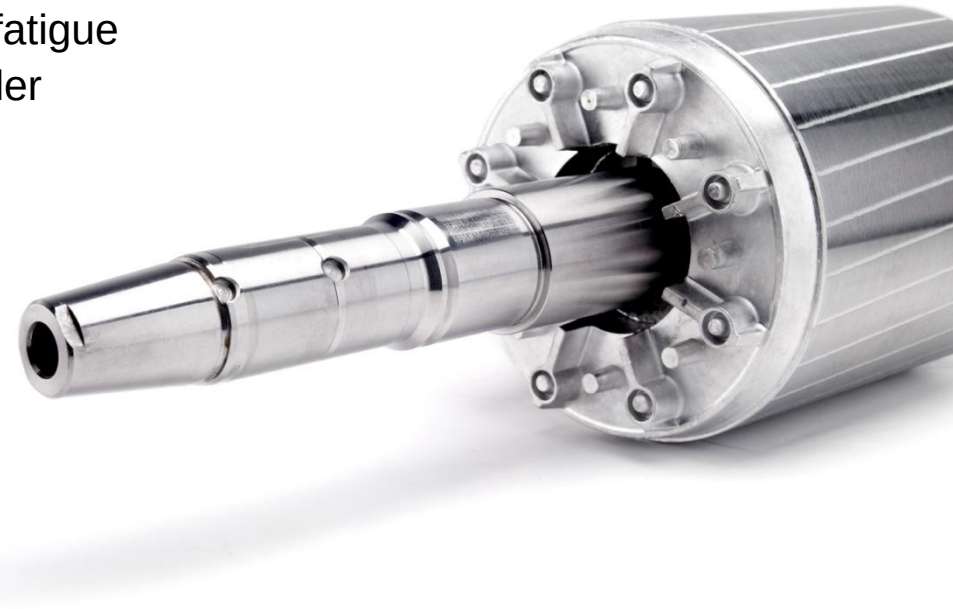
Highly accurate manufacturing processes

- Carefully machined radiuses
  - The rotating shaft in a Flygt pump is exposed to high static and dynamic loads. Thanks to carefully machined radiuses and critical surfaces grinded to necessary smoothness, the risk of stress concentrations, crack formations and fatigue failures is minimized.



No fatigue crack formations

- Improved shaft and impeller joint
  - Shaft units for Flygt dewatering pumps (2600-series) and wastewater pumps (3153 through 3300) are designed and manufactured with carefully machined surfaces without shaft keyway, eliminating fatigue crack formation which cause shaft or impeller damage.



Assortment

- Available for all Flygt pump and mixers

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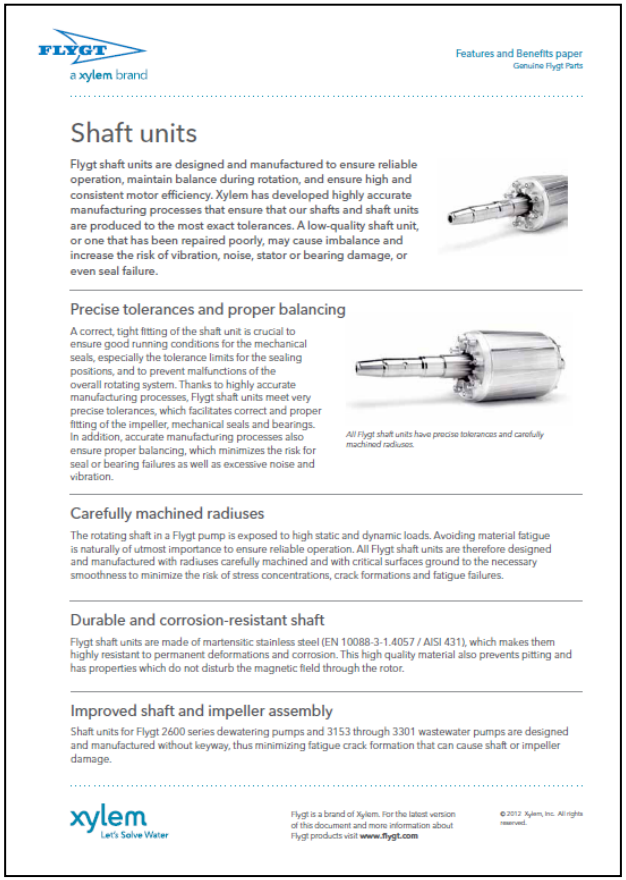
Sales & delivery

- Available for delivery
- For more information, please contact your local Xylem representative

Promotion

- Features and Benefits Paper
  - Detailed, more technical information
- Intranet/Oasis
- Internet/www.flygt.com



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Features and Benefits paper
Genuine Flygt Parts

Shaft units

Flygt shaft units are designed and manufactured to ensure reliable operation, maintain balance during rotation, and ensure high and consistent motor efficiency. Xylem has developed highly accurate manufacturing processes that ensure that our shafts and shaft units are produced to the most exact tolerances. A low-quality shaft unit, or one that has been repaired poorly, may cause imbalance and increase the risk of vibration, noise, stator or bearing damage, or even seal failure.

Precise tolerances and proper balancing

A correct, tight fitting of the shaft unit is crucial to ensure good running conditions for the mechanical seals, especially the tolerance limits for the sealing positions, and to prevent malfunctions of the overall rotating system. Thanks to highly accurate manufacturing processes, Flygt shaft units meet very precise tolerances, which facilitates correct and proper fitting of the impeller, mechanical seals and bearings. In addition, accurate manufacturing processes also ensure proper balancing, which minimizes the risk for seal or bearing failures as well as excessive noise and vibration.

All Flygt shaft units have precise tolerances and carefully machined radiuses.

Carefully machined radiuses

The rotating shaft in a Flygt pump is exposed to high static and dynamic loads. Avoiding material fatigue is naturally of utmost importance to ensure reliable operation. All Flygt shaft units are therefore designed and manufactured with radiuses carefully machined and with critical surfaces ground to the necessary smoothness to minimize the risk of stress concentrations, crack formations and fatigue failures.

Durable and corrosion-resistant shaft

Flygt shaft units are made of martensitic stainless steel (EN 10088-3-1.4057 / AISI 431), which makes them highly resistant to permanent deformations and corrosion. This high quality material also prevents pitting and has properties which do not disturb the magnetic field through the rotor.

Improved shaft and impeller assembly

Shaft units for Flygt 2600 series dewatering pumps and 3153 through 3301 wastewater pumps are designed and manufactured without keyway, thus minimizing fatigue crack formation that can cause shaft or impeller damage.

xylem
Let's Solve Water

Flygt is a brand of Xylem. For the latest version of this document and more information about Flygt products visit **www.flygt.com**

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Stators

Long-lasting performance down to the core

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Highlights

- Ensure optimal motor performance and extended motor lifetime
- Increased pump and mixer efficiency
- High safety margin
- Optimized heat transfer and tolerance of high operating temperatures
- Minimized risk of short circuits
- Reliable variable frequency drive (VFD) operation

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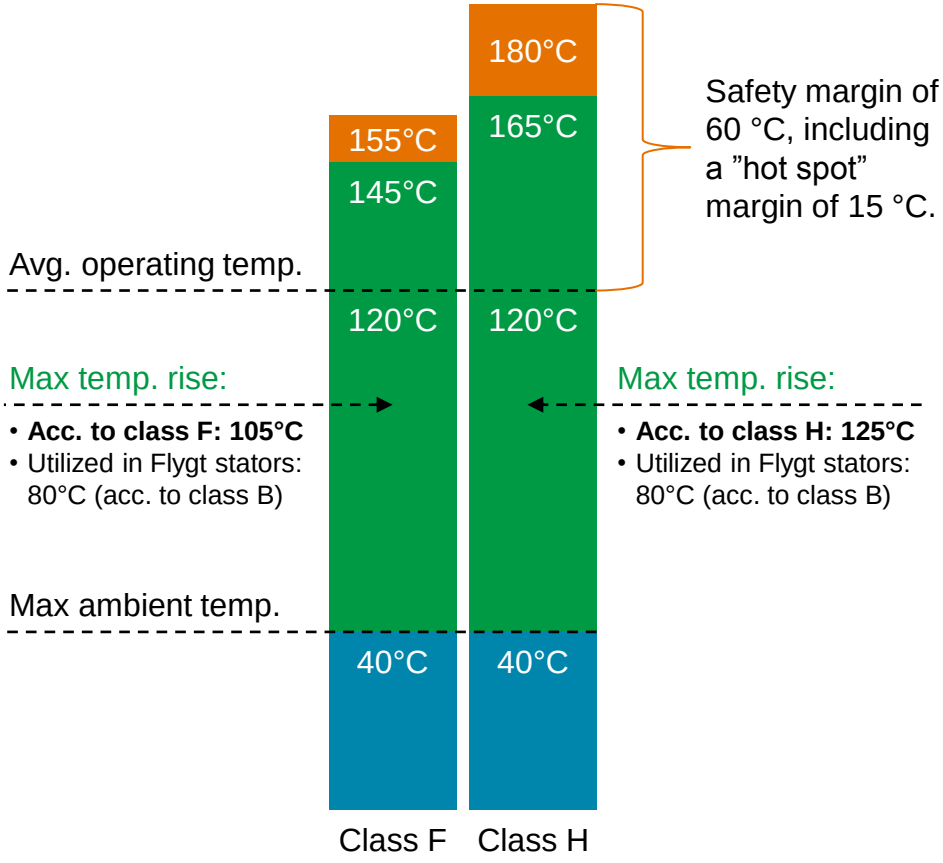
Insulation

- Class H
  - Most Flygt stators are built to the international standard class H, which is the highest temperature class available where all insulation materials are tested together.
- Extended motor lifetime
  - A high safety margin significantly improves the possibilities to extend the stator lifetime when operating at a temperature much lower than the rated temperature. Of course, mechanical stress and strains over a long period of time also influence how long a motor will last. However, with class H the theoretical lifetime of a Flygt motor is well above 20 years.

Insulation

- Class H extends motor lifetime

	Limit temp.	Max temp. rise
Class A	105°C	60°C
Class E	120°C	75°C
Class B	130°C	80°C
Class F	155°C	105°C
Class H	**180°C**	**125°C**



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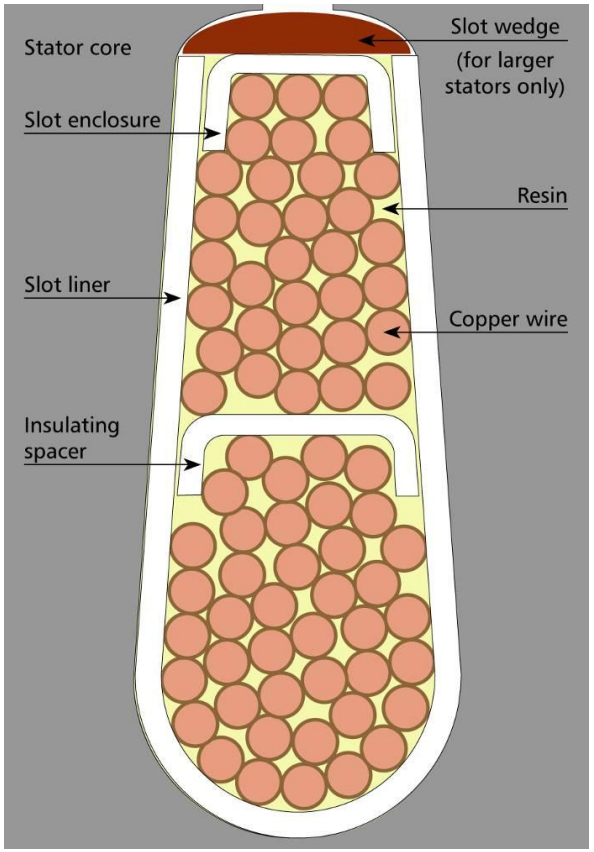
Insulation

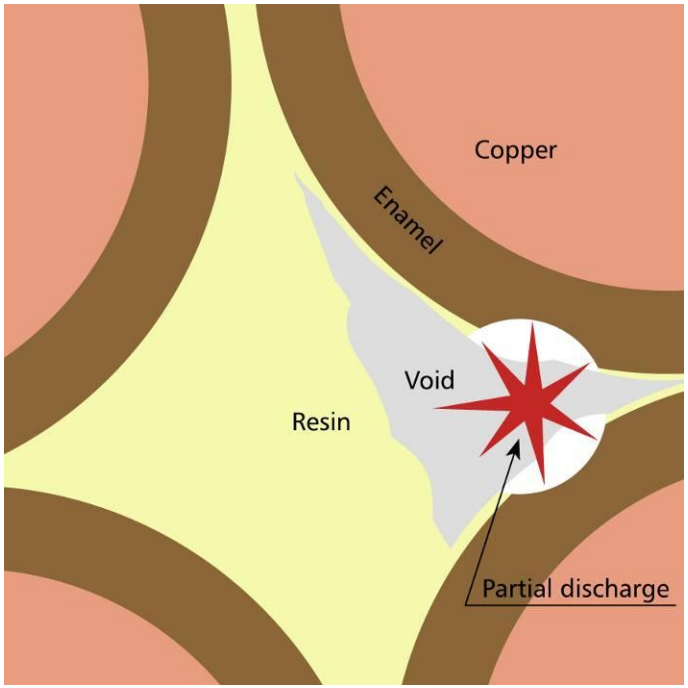
- Efficient slot-liners facilitate solid insulation
  - The 3-ply Nomex-Mylar-Nomex composite is highly compatible with the resin, ensuring that all materials are perfectly “glued” together after impregnation. This gives a solid insulating system that withstands vibrations.
- High quality copper wire insulation
  - Magnet wires according to temperature class 200ºC and grade 2 (Norm IEC-60317-13), insulated with 12 layers of insulation lacquer to prevent short circuiting
  - Provides correct resistance and withstands voltage stress between turns in slots and coil ends

Impregnation

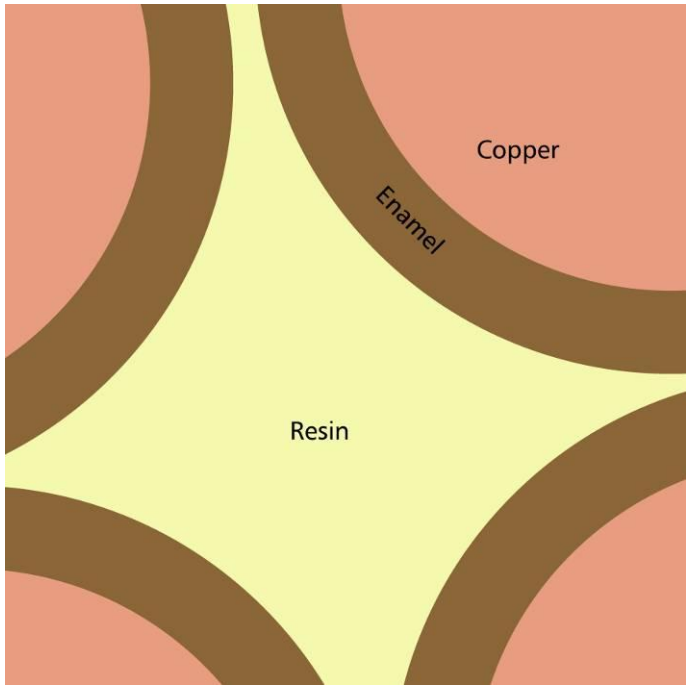
- Efficient trickle impregnation or dip with current/UV curing generates a great resin fill that form a compact and homogenous insulation
- Eliminates air pockets around the windings
- Reduces the risk of partial discharges during variable frequency drive (VFD) operation
- Minimizes the risk of short circuits in the windings as well as heat build-up



Impregnation



Partial discharge can destroy all organic parts of the insulation and lead to pre-mature stator breakdown.



The impregnation techniques used in Flygt stators generate a great resin fill, which reduces the risk for partial discharge.

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Stator core

- Optimized magnetic properties ensure high motor efficiency
  - Stators in Flygt products are always supplied with brand new stator cores, ensuring correct magnetic properties

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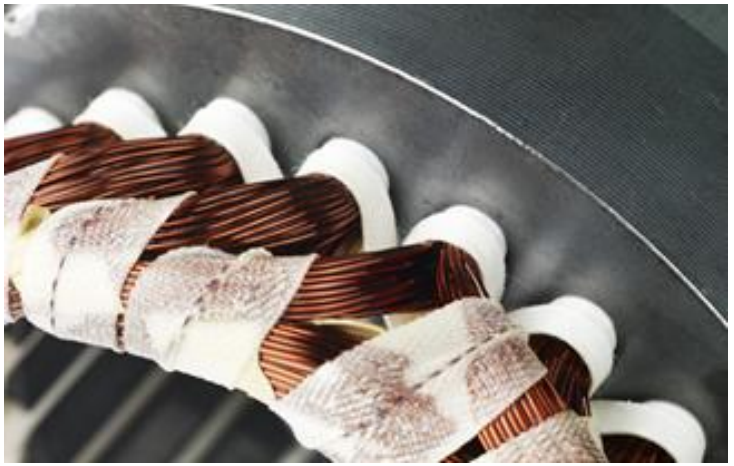
Winding data and dimensions

- Extensive testing ensures correct winding properties and insulation system quality
- Winding resistance measurement tests, insulation tests and surge tests are conducted on all stators at the factory. In addition, all coil ends are checked to be within the dimensional tolerances.



Coil ends

Conductor cables

- Approved by Canadian Standards Association (CSA)
  - Provides a guarantee that leads are controlled and that specified criteria, such as insulation and thermal properties, are fulfilled.

CSA-approved leads

Assortment

- Available for all Flygt pumps and mixers

Sales & delivery

- Available for delivery
- For more information, please contact your local Xylem representative

Promotion

- Flyer (Sales leaflet)
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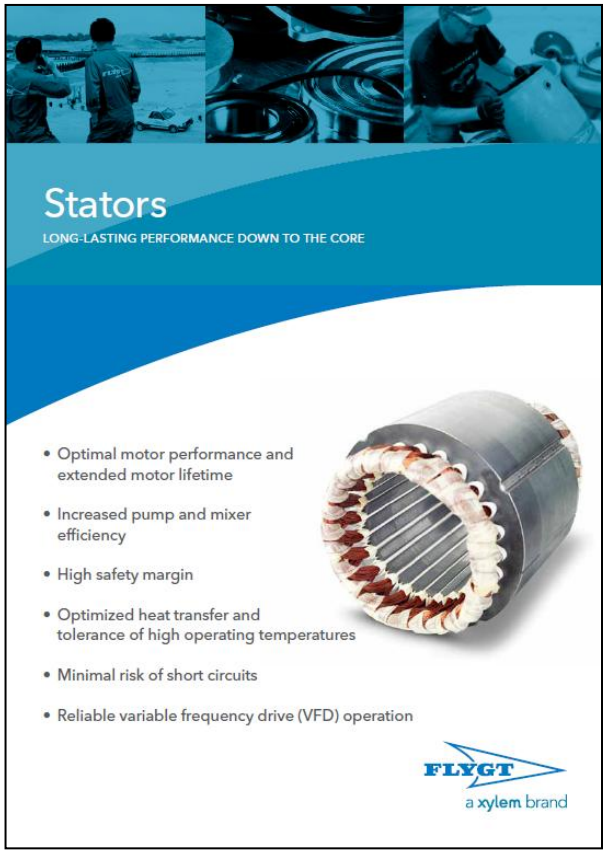


SUBCAB® cables

Optimized for long-life submersible duty

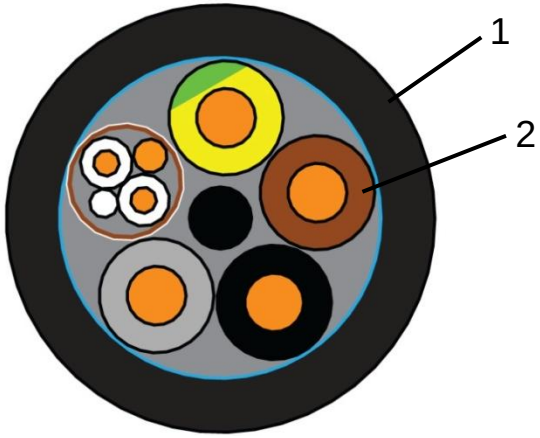
FLYGT a xylem brand

Highlights

- Long lifetime thanks to highly resistant materials
- Ensure a reliable leak-free fit
- Prevent insulation deterioration
- Built-in monitoring cores
- Screened versions for variable frequency drive (VFD) operation
- Approved for explosion-proof and mining applications

Long lifetime

- Outer sheath made of chlorinated polyethylene CPE type VDE/5GM5, which comprises several features that extend SUBCAB life expectancy to four times longer than a conventional H07RN-F standard cable
  - High temperature resistance – withstand water temperatures up to 70°C
  - Superior mechanical strength
  - High abrasion and tear resistance
  - Extremely low absorption rate – withstands water depths up to 50 metres



1. Outer sheathing
2. Insulation

Long lifetime

- Chemical resistance within PH 3-10
- Ozone resistance (in compliance with EN 50396 and ISO 4892-2)
- Oil and flame resistance (according to IEC-norm 60811-1-1 and VDE 0472)

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Outer sheathing and insulation

- Prevent insulation deterioration
  - Advanced conductor insulation compound/inner sheath (Ethylene-propylene rubber EPR/3GI3 or High Density Ethylene-propylene rubber HEPR/3GI3)
  - Temperature rating of 90°C
- Ensure a reliable leak-free fit
  - Tight outer diameter tolerances
  - Cables tested to fit perfectly together with the Flygt cable entry seal sleeve
  - Retain its mechanical and physical properties even after long periods of use

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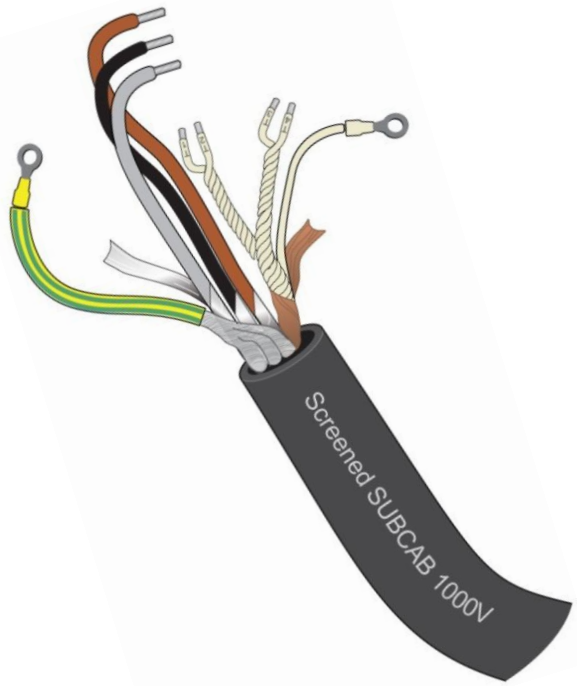
Features

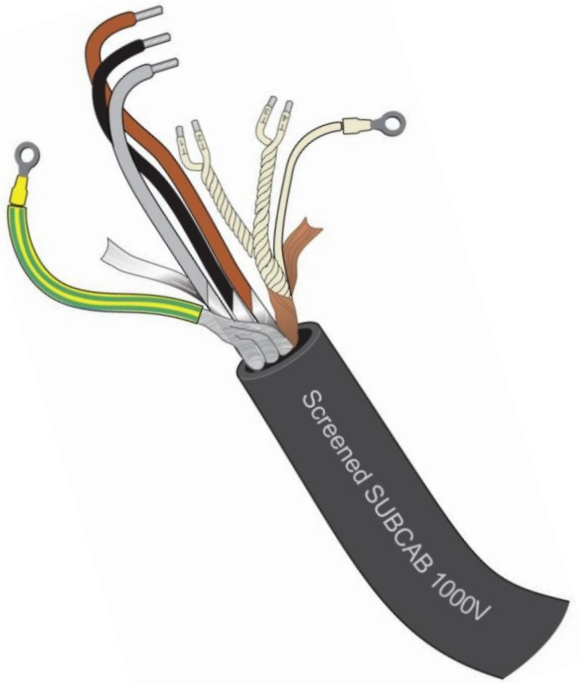
- Built-in control cores for pump monitoring and control
  - New advanced screened twisted pair of signal cores
  - No separate signal cable needed for pumps with the MAS 800 pump supervision system
- Screened versions for variable frequency drive (VFD) operation
  - Ensure correct communication with supervision units
  - Reduce electromagnetic emissions to other electronics
- Approved for explosion-proof and mining applications



FLYGT a xylem brand

Features

- Built-in control cores for pump monitoring and control
  - No need for a separate control cable
- New advanced screened twisted pair of signal cores
  - Designed for the new MAS 800 pump supervision system*
- Screened versions for variable frequency drive (VFD) operation
  - Ensure correct communication with supervision units
  - Reduce electromagnetic emissions to other electronics
- Approved for explosion-proof and mining applications



* Available from early 2013

FLYGT a xylem brand

Comparison with standard cable H07RN-F

Feature	Flygt SUBCAB® cable	Standard H07RN-F cable
Expected lifetime	4 times H07RN-F. Slow aging due to the carefully selected high-quality materials.	
Qualified for permanent use in water	Yes, according to standards HD22.16 and VDE 0298-300.	No
Tested for long-term sealing in Flygt pumps	Yes. Cable tested at a water pressure of 5 bar and a temperature of 70°C. Sealing specifically adapted to Flygt pumps.	No
Maximum outer sheath and insulation temperature	Resists 70°C at outer sheath, 90°C at insulation.	Resists 40° at outer sheath, 60°C at insulation
Extra heavy-duty cable for mining applications	Yes, meets material standard 5GM5 for mining industries. Resistant to mechanical wear.	No
Weather resistant	Yes, tested for UV and ozone resistance.	No
Integrated control cores	Yes, screened and unscreened. No separate control cable needed.	No
Ex approval	Yes, approved as explosion protected together with Flygt pumps and mixers in Europe (Ineris) and the US (FM, MSHA).	No
Electrical and materials approvals	Yes. Europe (VDE), North America (CSA), China (CCC).	No
Screened versions for VFD and EMC applications	Yes. The screened cable attenuates electromagnetic interference produced by VFD, Variable Frequency Drive	No

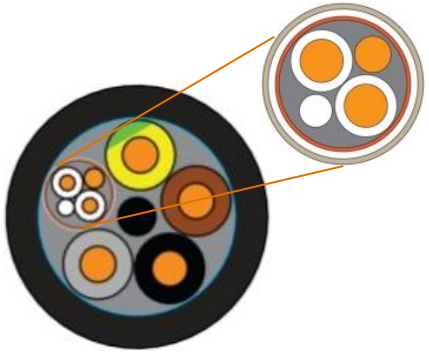
Standards and approvals

- Flygt SUBCAB® comply with the following international standards

Standard	Type	Standard	Type
IEC 60245	Flexible cable in general	VDE 0207 part 20	Material
IEC 60228 class 5	Conductor	VDE 0250	Material
IEC 60811-1-1 CLAUSE 9	Oil resistant	VDE 0282 part 810	Material
IEC 60811-2-1 CLAUSE 10	Oil resistant	VDE 0472 part 803-A	Oil resistant
IEC 60332-1	Flame retardant	VDE 0472 part 804-B	Flame retardant
IEC 60332-2	Flame retardant	VDE 0295	Conductor
IEC 60364-5-523	Current	VDE 0298	Current
CSA C22.2 No.49-1992	Flexible cable in general	VDE 0472	Testing
UL 1581	Flexible cable in general	HD 22.4	Flexible cable in general
CCC.GB5013/IEC60245	Flexible cable in general	HD 22.16 annexes A&B	Cables for submersible use
EN 50525-2-21	Flexible cable in general	EN 50363-1:2005	Material

Assortment

- Screened and unscreened
- With or without built-in control cores
- NEW screened control cores* for
  - all screened SUBCAB cables
  - unscreened 4-core SUBCAB® cables ≥ 10 mm^2
  - unscreened 7-core SUBCAB® cable 6 mm^2
- Control cables
  - Screened and unscreened



4G10+S(2×0.5) SUBCAB® with screened control cores

* Screened twisted pair of control cores

Range overview

SUBCAB range	3-power cores (1-phase)	4-power (3-phase)	7-power cores (YD-start)
SUBCAB without control cores	3G1.5 - 3G2.5	4G1.5 – 4G6	
SUBCAB with control cores		4G1.5 + 2x1.5 to 4G6 + 2x1.5, 4G10 + S(2x0.5) to 3x120 + 2G70/2 + S(2x0.5)	7G2.5 + 2x1.5, 7G4 + 2x1.5, 7G6 + S(2x0.5)
Screened SUBCAB with control cores		S3x1,5 + 3x1,5/3 + S(2x0.5) to S6x95 + 95 + S(4x0.5)	

For a detailed overview, contact your local Xylem representative.

Sales & delivery

- New cables
  - With control cores 10 – 120 mm^2
  - Screened with control cores 1.5 – 185 mm^2
- New cables supplied in Flygt pumps and mixers from
  - Mid August, 2012 50 – 185 mm^2
  - Mid November, 2012 up to 35 mm^2 + 185 mm^2

FLYGT a xylem brand

Promotion

- Flyer (Sales leaflet)
  - Highlights the most important sales arguments
- Features and Benefits Paper
  - Detailed, more technical information
- Intranet/Oasis
- Internet/www.flygt.com

FLYGT a xylem brand

N-technology parts

Innovative technology gets the job done

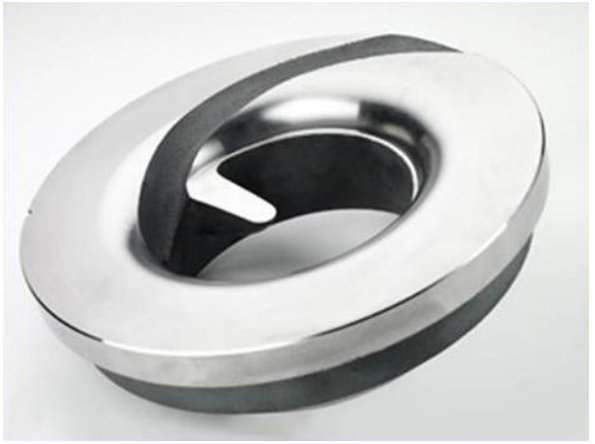
FLYGT a xylem brand

Highlights

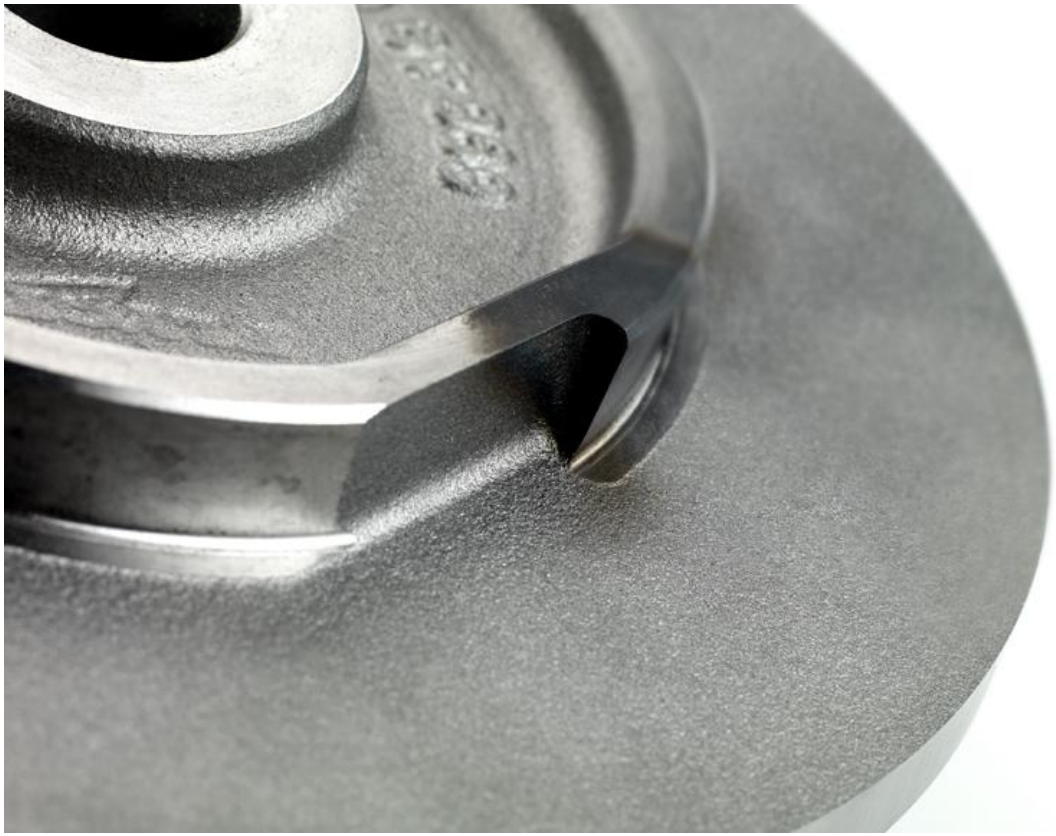
- Self-cleaning impeller for continuous trouble-free pumping
- Cutting groove and tight tolerances
- Well-balanced and modular design
- Sustained high pumping efficiency
- Lower energy costs
- Resistant materials
- Adaptive-N hydraulics
  - Further improves the clog-free, energy-saving pump performance of the N-technology
- N-pump upgrading kits

Self-cleaning design

- The swept leading edge of the impeller, in combination with the relief groove in the insert ring, provides 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, avoiding blinding of the inlet.



Cutting groove



- Seal protection
  - Fibrous and stringy objects can wind around rotating cylindrical surfaces, e.g. the shaft. Flygt N-pumps are therefore designed with a close gap and induction hardened cutting groove between the impeller and the seal housing cover, preventing objects from entering the space above the impeller and thereby reducing the risk of seal failures.

Tight tolerances

- Secure high pumping performance
  - Thanks to reliable and high precision manufacturing processes, the Flygt N-impellers are supplied with machined gap surfaces ensuring that the pump delivers its required performance. These machined gap surfaces facilitate much tighter tolerances compared to cast surfaces.

Well-balanced design

- Reduce bearing loads and minimize the risk of vibrations and hydraulic imbalance
  - The unique two- or three-bladed impeller design minimizes radial forces as it is hydraulically balanced during manufacture. This is a complex balancing technique requiring design knowledge as well as specialist equipment.
  - Use of a repaired or re-engineered impeller with incorrect balancing can increase the risk for clogging and hydraulic imbalance causing high bearing loads.

Clearance adjustment and impeller disassembly

- The impeller sleeve unit allows easy adjustment of the clearance between impeller and insert ring, which is very important to ensure high efficiency.
- Only standard tools are needed; the impeller can easily be disassembled with a hexagon bit adapter as tightening of the sleeve unit screw creates force between the shaft end and impeller, pushing the impeller off the shaft.

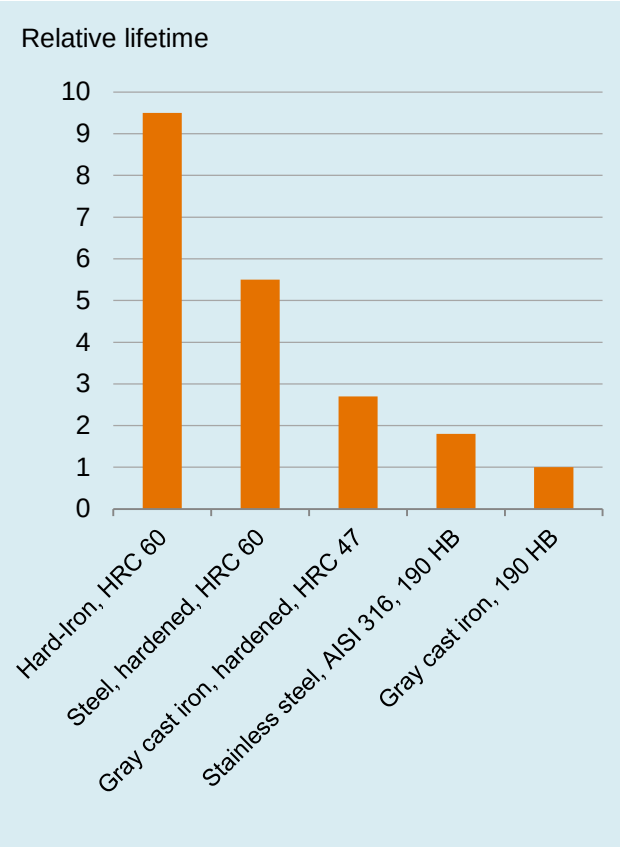
Flexible and modular design

- Flygt N-technology allows the hydraulics to be tailored to meet the requirements of virtually any application
  - Induction hardened gray cast iron version for typical wastewater applications
  - Hard-Iron™ version for abrasive and corrosive applications
  - Chopper ring version for cutting long fibers or solids in wastewater

FLYGT a xylem brand

Resistant materials

- Hard-Iron™ for the toughest wastewater challenges
  - Unique alloy with superior hardness, HRC 60, containing 25 % chrome.
  - Offers higher wear and erosion-corrosion resistance, higher sustained efficiency and longer impeller lifetime compared to any alternative on the market
  - Recommended for wastewater applications with high oxygen content, wastewater with increased chloride content and applications with abrasive particle content
  - Available as an option



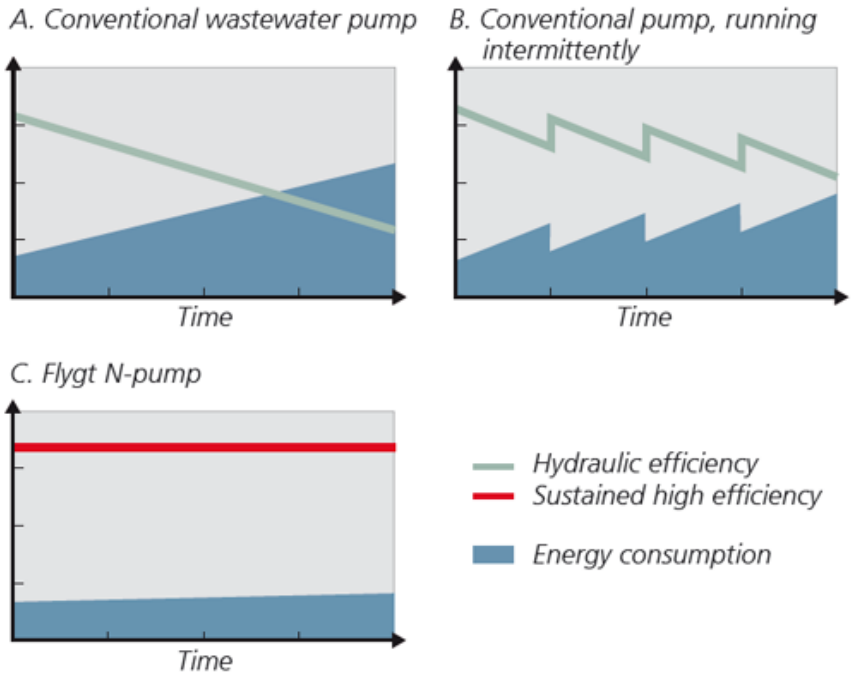
FLYGT a xylem brand

Resistant materials

- Gray cast iron impeller with induction hardened edges
  - Available in standard Flygt impellers
  - High hardness (HRC 47) and high wear resistance
  - The expected lifetime is approximately 10 times longer than conventional gray cast iron and 2-3 times longer than conventional hardened gray cast iron impellers

Sustained pumping efficency

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



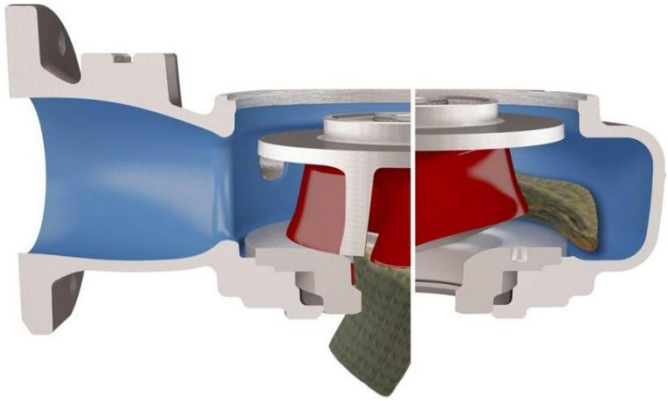
FLYGT a xylem brand

N-pump upgrading kits

- Competitively priced upgrade kits packaged together for easy handling
  - Include all hydraulic parts needed to convert C-pumps to N-technology
  - Available for Flygt pumps 3085, 3102, 3127, 3140, 3152, 3170, 3201 and 3300

The revolutionary Adaptive N-hydraulics

- Further improves the self-cleaning, clog-free, energy-saving pump performance of the N-technology
- The Adaptive N-impeller moves axially upwards when needed to enable bulky material and tough debris to pass through smoothly
- The axial movement reduces stress on the shaft, seals and bearings, thereby extending their lifespans
- Little to no maintenance assures highly economical and reliable pumps



FLYGT a xylem brand

Assortment

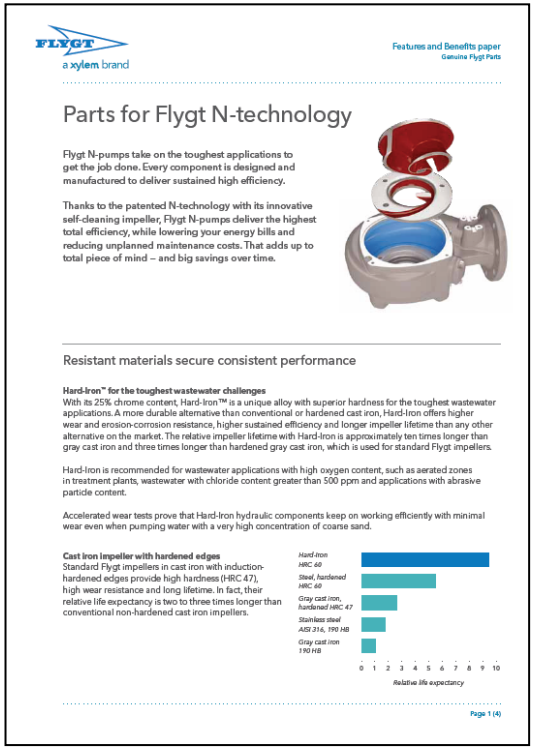
- Individual parts
- N-pump upgrading kits
  - Available for Flygt pumps: 3085, 3102, 3127, 3140, 3152, 3170, 3201 and 3300

Sales & Delivery

- Available for delivery
- For more information, please contact your local Xylem representative

Promotion

- Features and Benefits Paper
  - Detailed, more technical information
- Intranet/Oasis
- Internet/www.flygt.com



FLYGT a xylem brand

Features and Benefits paper
Genuine Flygt Parts

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 piece 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 ten times longer than gray cast iron and three times longer than hardened gray cast iron, which is used for standard Flygt impellers.

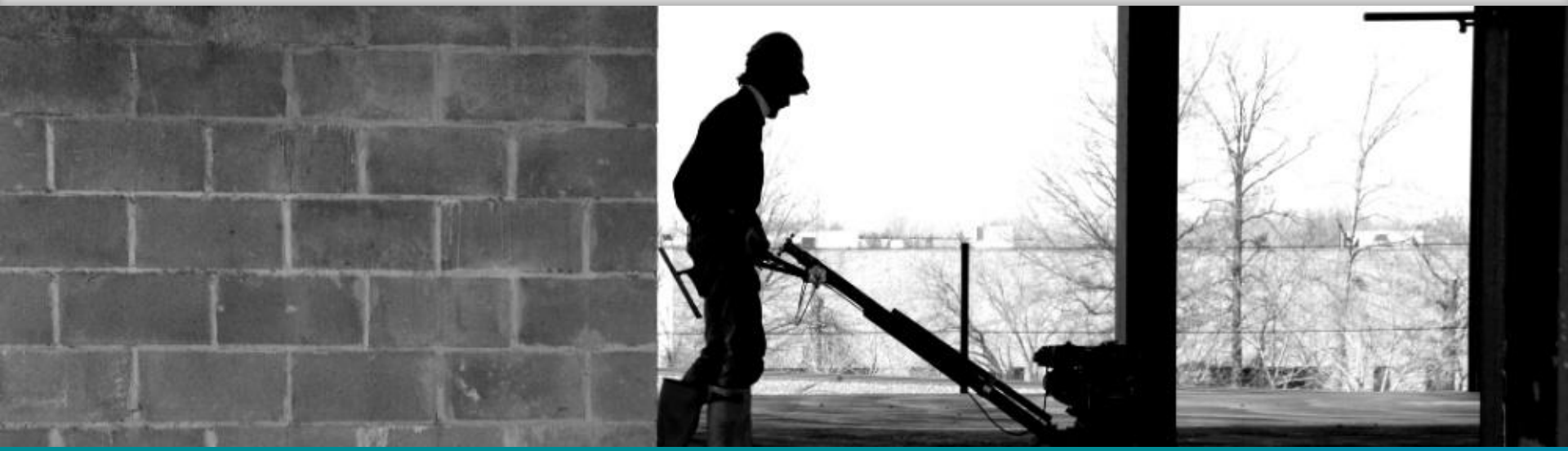
Hard-Iron is recommended for wastewater applications with high oxygen content, such as aerated zones in treatment plants, wastewater with chloride content greater than 500 ppm and applications with abrasive particle content.

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 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.

Page 1 (4)

FLYGT a xylem brand



Wear kits

Quick, convenient and cost-effective dewatering pump repair

FLYGT a xylem brand

Highlights

- Easy access to all critical parts for the most common Flygt dewatering pump repairs
- Save money by buying wear kits instead of individual parts
- Simplify spare parts handling
- Extensive hydraulic end repair possible by combining kits
- Long-lasting performance in tough and abrasive applications
- Minimized power consumption

Patented Dura-Spin™ technology

- The back vanes of the unique and closed impeller and the suction cover with Dura-Spin grooves work together, sweeping abrasive particles away from the impeller neck. By this, an extremely low wear in the gap between impeller neck and suction cover is achieved.
- Hard-Iron, with 25% chromium content, offers superior hardness (HRC 60) and outstanding wear resistance.

FLYGT a xylem brand

Durable and closed impeller design

- Solid upper cover disc and out-balanced hydraulic axial load secure low bearing loads and minimize the risk for impeller cracks. The design also makes the seal housing cover less exposed to wear.
- The improved shaft and impeller joint enable easy assembly and disassembly without keyway stress concentrations, thereby minimizing the risk of fatigue cracks that cause shaft and impeller damage.

High sustained efficiency

- Patented high head impeller geometry
  - The impact angle of abrasives on the leading edges is flattened, which reduces wear. The leading edges also tolerate extensive wear before performance is affected.
- Minimized power consumption and wear
  - At Xylem we have developed our own design programs and engineering tools that iterate against CFD simulations to get the highest possible pumping efficiency without compromising the throughlet, wear resistance or pumping performance.

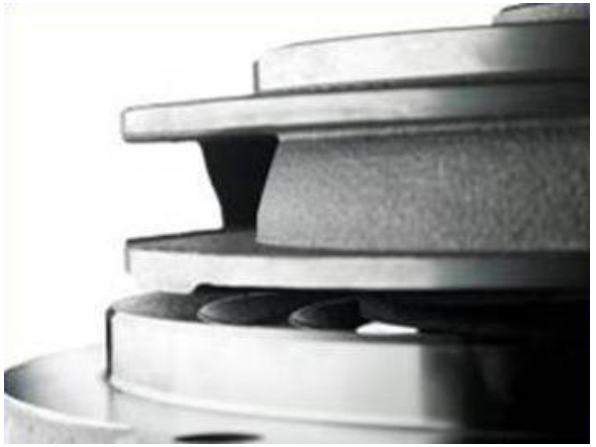
Accurate casting tolerances and well-balanced design

- Reliable and high-precision casting processes secure that the impeller and the Dura-Spin™ function deliver their required high pumping performance.
- The precise and well-balanced impeller minimizes the risk of vibrations and high bearing loads.

FLYGT a xylem brand

Easy gap adjustment and impeller disassembly

- The impeller sleeve enables easy gap adjustment between impeller and insert ring and create tight clearances between impeller and suction cover to ensure high efficiency.
- In addition, the impeller sleeve ensures easy disassembly of the impeller using standard tools only. Tightening the impeller sleeve unit, using a hexagon bit adapter, creates a shaft end pressure that pushes the impeller off the shaft.



FLYGT a xylem brand

Seal housing cover and diffuser

- Sustained wear resistance and precise geometries
  - Stable and CFD-calculated geometries, high precision casting processes and durable rubber properties facilitate sustained wear resistance and accurate performance. The seal housing cover is also protected from corrosion as no bare metal is exposed to the pumped media.
- High quality lining
  - Reliable and high precision priming process secures superior adhesion, and minimizes the risk for rubber separating from the metal body.

Wear kits

- Wear part kits
  - Include impeller, suction cover, O-ring and fasteners for a common repair of the pump's hydraulic end
- Hydraulic repair kits
  - For a more complete repair of the hydraulic end, a Wear part kit can be combined with a Hydraulic repair kit containing seal housing cover, diffuser and compensators*

Wear Part Kit

Hydraulic Repair Kit

* For a complete overhaul of the entire pump, just add a Basic repair kit

FLYGT a xylem brand

Assortment

- Wear kits are available for a wide range of Flygt dewatering pumps

Flygt wear kit	Pump model										
	2052.170	2066.171	2102.041	2125.181	2151.011	2610.081/082/171	2620.081/082/171	2630.080/081/180	2640.080/081/180	2660.080/081/180	2670.080/081/180
Wear part kit	x	x	x	x	x	x	x	x	x	x	x
Hydraulic repair kit	x	x	x	x	x	-	x	x	x	x	x

Sales & delivery

- Available for delivery
- For more information, please contact your local Xylem representative

Promotion

- Features and Benefits Paper
  - Detailed, more technical information
- Intranet/Oasis
- Internet/www.flygt.com

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Basic repair kits

Restore the optimal performance of your pump

FLYGT a xylem brand

Highlights

- All parts in one box
- Simpler handling
- Time savings
- Lower costs
- Fast delivery
- High quality parts
- O-rings included
- Service sticker
- Complementary kits for drainage pumps

FLYGT a xylem brand

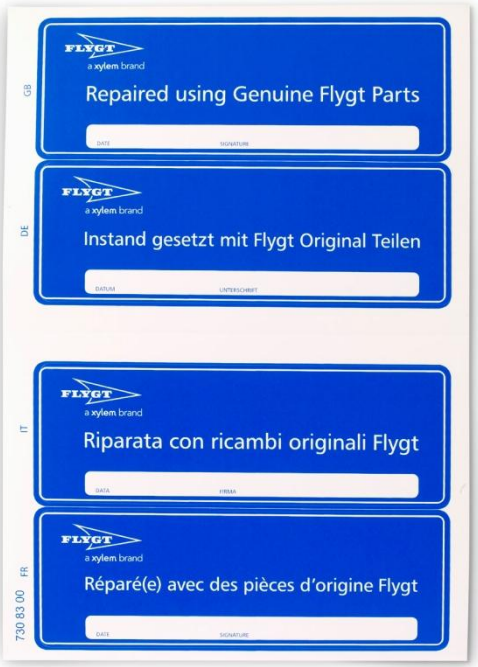
Simplified handling and reduced costs

- Easier storage and physical handling
- Reduced administration and simpler logistics
- Simplified order process through one part number
- Stocked in our distribution centers for direct delivery
- Lower handling and administration costs
- Lower price per item compared to when purchasing parts separately

FLYGT a xylem brand

High quality parts only

- Xylem guarantees that all parts in a Basic repair kit are Genuine Flygt Parts or genuine parts from OEM manufacturers.
- The kits contain service stickers that should be put on your pump after repairs have been completed. The sticker certifies that genuine parts were used for the repair.



FLYGT a xylem brand

Complementary wear kits

- Hydraulic repair kits and wear part kits, available for the most common drainage pump models, provide, together with a Basic repair kit, everything you need for a complete repair of your pump.

Wear Part Kit

Hydraulic Repair Kit

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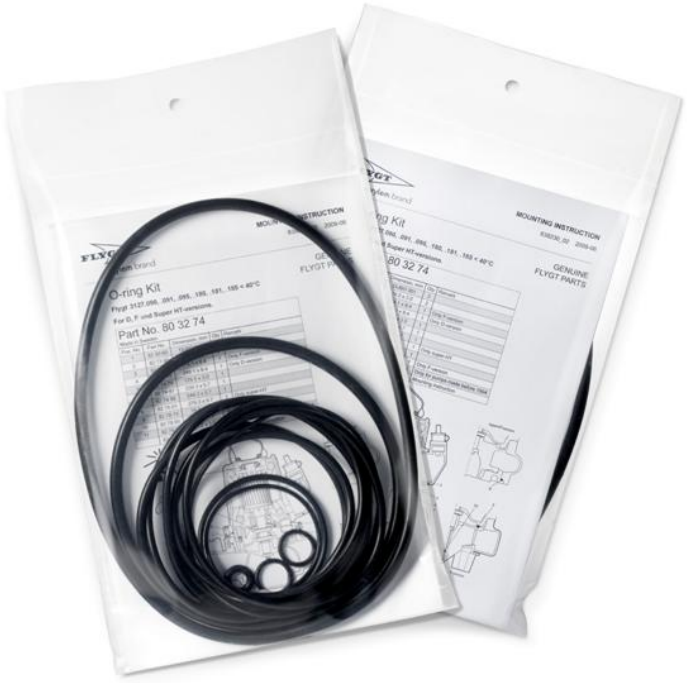
O-rings included

- All Basic repair kits contain a set of O-rings, which also can be bought separately in O-ring kits.
- Flygt's O-rings are made to exacting tolerances and assure that your pump delivers optimal performance.
- Made of nitrile or fluorinated rubber, Flygt's O-rings are specified to seal effectively at both high and low temperatures.

O-ring kits

- All the O-rings you need for your particular Flygt product
  - The right number of rings
  - The right dimensions
  - The right quality
  - The right rings for a specific position in the pump

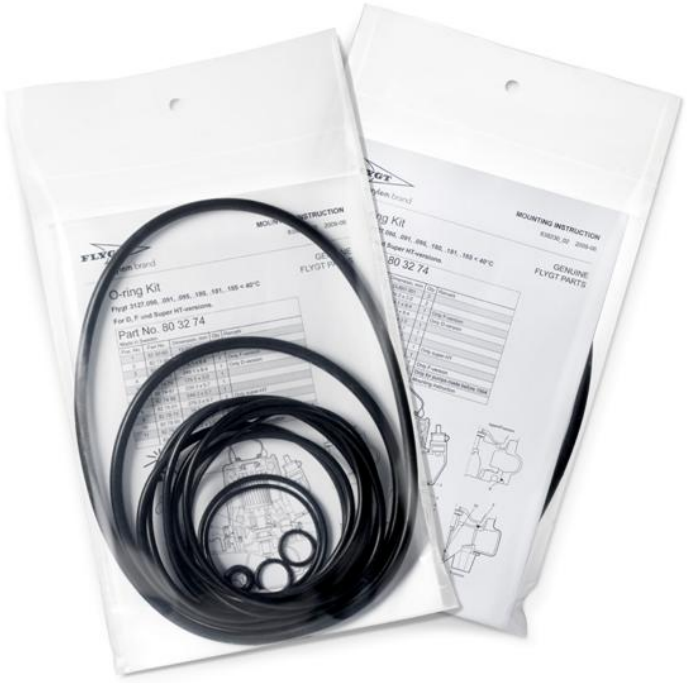
with just one order number.



FLYGT a xylem brand

O-ring kits

- Always the right component, even at upgrades
  - Order a kit for your pump and automatically get the correct O-rings even if the O-ring part numbers have been updated.
- Stored protected from age quickening UV light and heat
- Graphic mounting instructions delivered with each kit



FLYGT a xylem brand

Assortment

- Basic repair kits and O-ring kits are available for most Flygt pumps and mixers
- Large pumps have O-ring kits that are specifically designed for preventive maintenance

Sales & delivery

- Available for delivery
- For more information, contact your local Xylem representative

Promotion

- Flyer (sales leaflet)
  - Highlights the most important sales arguments
- Features and Benefits Paper
  - Detailed, more technical information
- Intranet/Oasis
- Internet/www.flygt.com

FLYGT a xylem brand

Bearings in Flygt Products

Carefully selected.
Thoroughly tested.

FLYGT
a xylem brand

Highlights

- Carefully selected and tested
- Special tolerances and clearances
- Pre-greasing ensures correct lubrication
- Unique Flygt part numbers
- Approved and well-known suppliers
- Controlled quality
- Bearings in Flygt products are selected to have a lifetime that generally exceeds 50,000 hours

FLYGT a xylem brand

Carefully selected and tested

- Bearings in Flygt products
  - are carefully tested and selected to ensure a reliable and trouble-free operation
  - have controlled parameters for clearance, shoulder heights, angels of angular bearings, tolerances, coatings, and are tested with all types of loadings from external forces and other environmental impacts
  - stand the test of time, oxidation, temperature gradients, light and heavy loads, stray currents, forces, vibrations etc.

FLYGT a xylem brand

Special tolerances and clearances

- Bearings in Flygt products are not as standardized as they might appear, but often have special tolerances and clearances of high importance
- Using a similar bearing, with only the same overall dimensions, can seriously impair the bearing lifetime and the overall reliability and in some cases abolish product approvals

Pre-greasing ensures correct lubrication

- Pre-greased with superior quality
  - Ensure low contamination levels and the correct amount of grease
- Frictionless shields avoid heating and wear debris and protect the bearing from intrusion
- Greases selected by Xylem are the most robust and reliable for Flygt applications
- Unique greases for Xylem developed when required
- All grease behaviours/performances are not always stated in manufacturer specifications. Using a different grease with similar features may thus do harm.

FLYGT a xylem brand

Unique Flygt part numbers

- Secure that the correct and appropriate bearings are ordered and installed for each specific repair work
- Bearings ordered from Xylem are delivered together with all other Flygt spare parts ordered for a specific repair
- Even though bearings from other suppliers have identical overall dimensions they might have important differences that can be difficult to get quick and correct information about. Bearing comparisons are therefore difficult, especially for selection of appropriate bearings for explosion proof pumps and mixers

FLYGT a xylem brand

Controlled quality

- Bearings in Flygt products are produced by well-known and selected manufacturers
- Xylem performs regular audits of bearing suppliers inspecting their quality assurance programs and their capability of determining ratings and maintaining the ratings over time
- Note that some bearing types and configurations from several well-known bearing manufacturers do not live up to the high standards of Xylem, and are thus not approved to be used in Flygt products

FLYGT a xylem brand

Assortment

- Wide assortment including carefully selected bearing types and configurations from different manufacturers
- Pre-greased with greases selected for optimal bearing performance in Flygt products

Sales & delivery

- Available for delivery
- For more information, please contact your local Xylem representative

Promotion

- Features and Benefits Paper
  - Detailed, more technical information
- Intranet/Oasis
- Internet/www.flygt.com

FLYGT
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Features and Benefits paper
Genuine Flygt Parts

Bearings in Flygt products

Bearings are one of the key components that contribute to the long-lasting, trouble-free operation of Flygt pumps and mixers. Bearing life expectancy has a great influence on the maintenance intervals for major service overhaul.

Thanks to years of field experience and testing, Xylem has a deep understanding and knowledge of the factors that influence bearing performance and lifetime. Based on this knowledge, the bearings in Flygt products are selected to have a lifetime that generally exceeds 50,000 hours.

Carefully tested and selected

The bearings used in Flygt products are carefully selected to secure reliable, trouble-free operation. All bearings, for instance, have controlled parameters for clearance, shoulder heights, angles of angular bearings, tolerances and coatings. They are tested with all types of loadings from external forces and other environmental impacts. Flygt-approved bearings stand the test of time, oxidation, temperature gradients, light and heavy loads, stray currents, vibrations and other forces.

At a first glance, Flygt bearings may appear to be standardized bearings with standardized dimensions from approved and well-known suppliers. However, the bearings in Flygt products often have special tolerances and clearances of high importance. Using a similar bearing where only the overall dimensions are identical, can seriously impair the bearing lifetime as well as the overall product reliability, and in some cases rescind prior product approvals.

The bearings in Flygt products often have special tolerances and clearances.

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FLYGT
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About Flygt

- A brand of Xylem
- Synonymous with engineering excellence, reliability and closeness to customers
- World-leader in the design and manufacture of dry and submersible pumps, mixers and related intelligent controls systems
- Provide a complete range of products and solutions for moving water and wastewater, and advanced monitoring and control equipment to optimize their use
- Product development and main manufacturing facilities in Sweden

For more information on Flygt and its products, please visit www.flygt.com

Xylem |’zīləm|

- The tissue in plants that brings water upward from the roots
- A leading global water technology company
- 12,000 people unified in a common purpose:
  - Create innovative solutions to meet our world’s water needs
  - Develope new technologies to improve water usage
- Move, treat, analyze, and return water
- Homes, buildings, factories and farms
- More than 150 countries
- Leading product brands, applications expertise and a legacy of innovation

For more information on how Xylem can help you, go to www.xyleminc.com

FLYGT a xylem brand

Active Seal™

Zero leakage with micro-pumping grooves

FLYGT a xylem brand

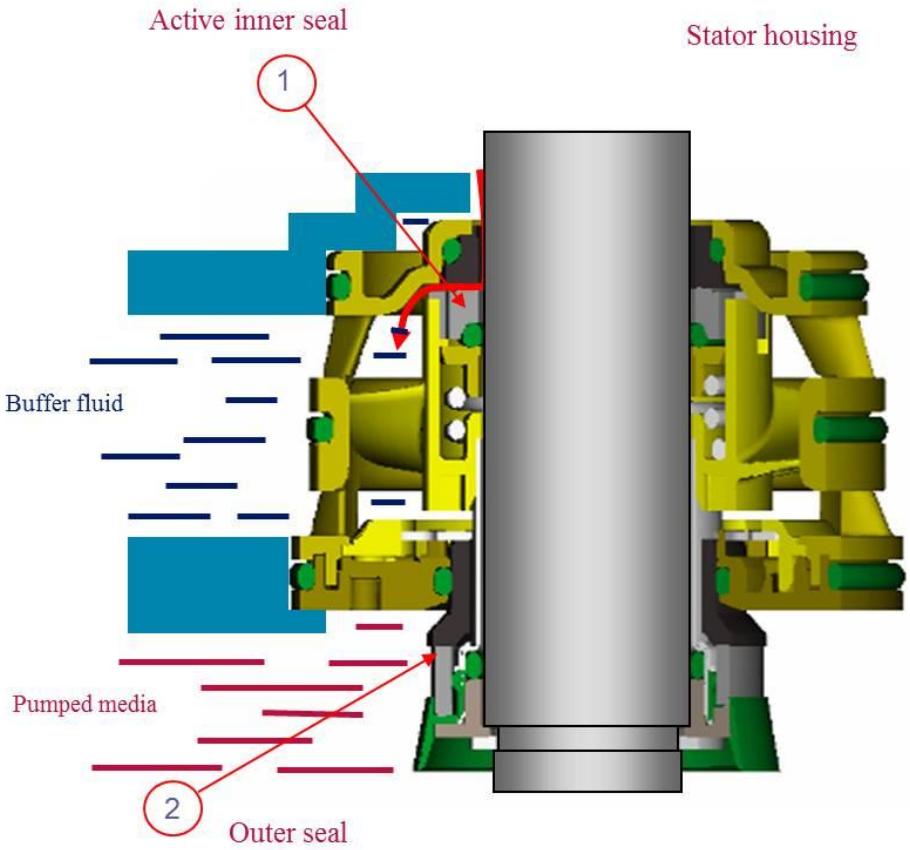
Active Seal™ for zero leakage

- Small accumulated sealing leakage, especially for products in continuous duty, may cause costly service actions such as emptying the inspection chamber or the stator housing. Worst case, the leakage can lead to machine breakdown.
- The patented Active Seal™ technology from Xylem ensures zero leakage into the drive unit, thus enhancing sealing reliability and minimizing the risk of bearing and stator failure.

FLYGT a xylem brand

Patented Active Seal™ double-seal system

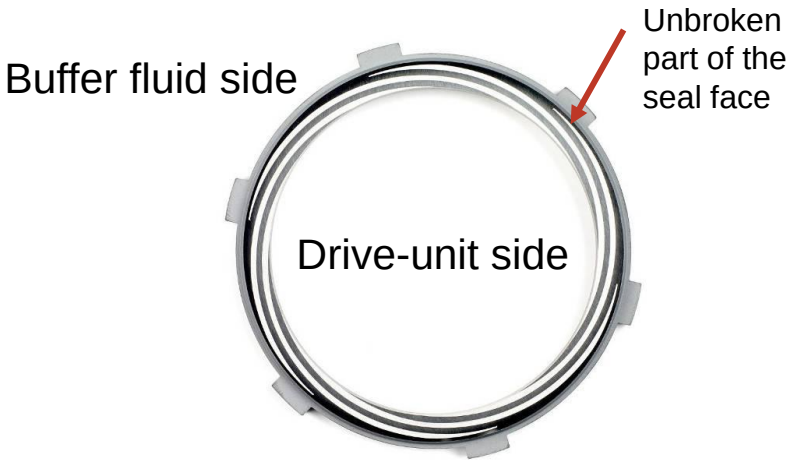
1. Inner seal
   - Acts as a micro-pump, continuously preventing liquid from entering the motor
   - Creates a pumping action through the rotation of spiral laser-cut grooves on the rotating seal face
   - The Active Seal™ function can only be applied to the inner seal in a double mechanical face seal system
2. Outer seal
   - Prevents leakage of the pumped media into the buffer chamber



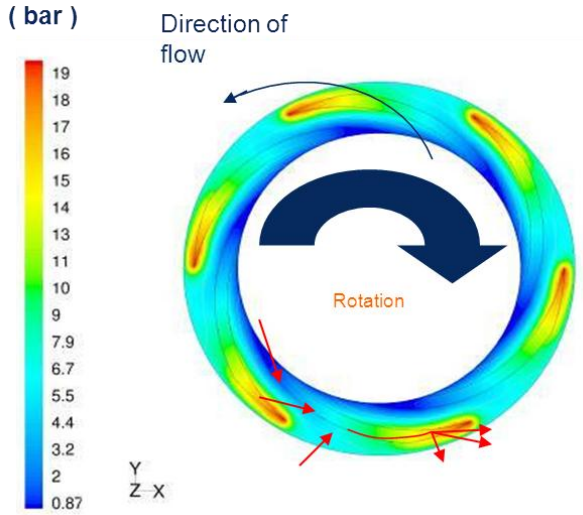
FLYGT a xylem brand

The principle of Active Seal™

The viscous shear of the fluid in the shallow laser-cut grooves creates a hydrodynamic pumping effect that directs any liquid on the drive-unit side back to the buffer-fluid side of the seal.



Inner seal with Active Seal grooves



The grooves continuously pump liquid from the inner to the outer diameter of the seal ring.

FLYGT a xylem brand

Active Seal™ benefits

- Prevents leakage into the motor
- Enhanced reliability of the sealing system
- Minimized risk for bearing and stator failures
- Prolonged service inspection intervals in many applications
- Reduced service actions and costs for pumps and mixers in continuous duty
- Easy to upgrade old pumps and mixers
- Unique spare part
  - Relapping is still possible but will destroy the Active Seal™ function

FLYGT a xylem brand

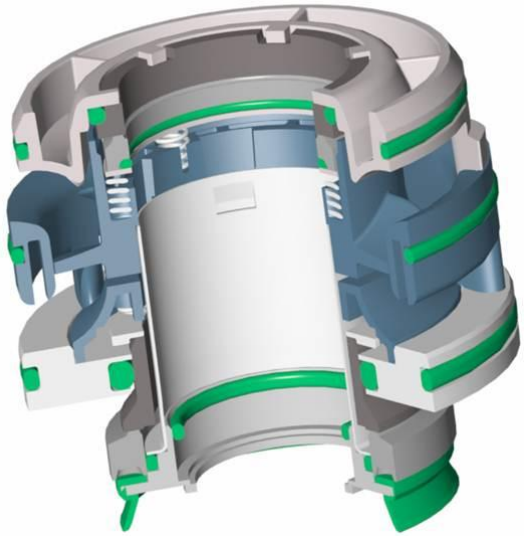
Less downtime and lower maintenance costs

- Increased sealing reliability allows longer service inspection intervals* in many applications, especially for pumps and mixers in continuous duty operation
- Minimized risk for motor failure reduces service actions and costs

* The intervals for major overhaul service/repair (where certain parts are changed due to wear) remain.

Easy to upgrade

- Plug-in Seals with Active Seal™ system are completely interchangeable with earlier generation of Plug-In Seals™.
- Single seals with Active Seal function are also interchangeable with inner seals in Flygt double seal systems with separate single seals.



FLYGT a xylem brand

Prolonged service inspection intervals

Recommended service intervals with Active Seal™

Series	Pump/mixer model	Service inspection	Major overhaul
3000-series	3140, 3152, 3153, 3170, 3171, 3201, 3202, 3300, 3301	12 000 H or 3 years*	24 000 H or 6 years*
4600-series	4610/20	4 000 H or 1 year*	12 000 H or 3 years*
	4630-80	12 000 H or 3 years*	24 000 H or 6 years*
3001/7000-series	3231, 3240, 3306, 3312, 3315, 3351, 3356, 3400, 3501, 3531, 3602, 3800, 7045, 7050, 7055, 7061, 7065, 7076, 7081, 7101, 7105, 7115, 7121, 7125	12 000 H or 3 years*	24 000 H or 6 years*

*whichever comes first

FLYGT a xylem brand

Assortment

- Implemented in a wide range of Flygt products
- Also available in Basic repair kits
- Full replacement as spare part

Flygt product range	Pump or mixer model													
2000 series	2135	2151	2201	2250	2290	2400	2610	2620	2630	2640	2650	2660	2670	
3000 series	3102	3126	3127	3140	3152	3153	3170	3171	3201	3202	3231	3240	3300	3301
	3306	3312	3315	3351	3356	3400	3501	3531	3602	3800				
4000 series	4440	4451	4610	4620	4630	4640	4650	4660	4670	4680				
5000 series	5100	5150	5520	5540	5550	5560	5570							
7000 series	7045	7050	7055	7061	7065	7076	7081	7101	7105	7115	7121	7125		

Promotion

- Flyer (sales leaflet)
  - Highlights the most important sales arguments
- Features and Benefits Paper
  - Detailed, more technical information
- Intranet/Oasis
- Internet/www.flygt.com

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