xylem

Flygt propeller pumps

Engineered for reliable, high-volume performance



50 Hz

FLYGT xylem

Protecting your communities from flooding

When severe weather strikes, your stormwater pumping system is the last line of defense between safety and disaster. Flooding can cause millions in property damage, threaten public safety, and result in costly penalties for overflow violations. Your community depends on pumping systems that respond reliably when needed most.

Xylem's Flygt propeller pumps are engineered for the demanding requirements of municipal stormwater and wastewater applications. Our pumps sit ready during extended periods of inactivity, then deliver powerful, reliable performance when storm events occur.

Proven performance under pressure

From protecting the historic town of Ste. Genevieve from Mississippi River flooding to eliminating recurring overflow problems at Mexico City's Gran Canal, Flygt propeller pumps have established a proven track record in critical municipal applications worldwide.

Your municipal challenges, solved

- **Instant reliability:** Stormwater pumps must start reliably after sitting idle for months, then operate flawlessly for hours during storm events. Flygt pumps are engineered for this demanding duty cycle.
- **Proven debris handling:** Flood water carries leaves, branches, grass, trash, and other solids that can pass through coarse screening systems and reach pumps. Our self-cleaning N-technology propeller ensures pumps continue operating efficiently even with heavy debris loads.
- **Effective sludge pumping:** Treatment plant sludge contains biological material and partially broken down synthetic fibers that can clog conventional axial flow pumps. N-technology maintains flow rates and prevents costly shutdowns in RAS and WAS applications.
- **Regulatory compliance:** Pump failures during storm events can result in overflow violations and significant fines. Reliable Flygt performance helps safeguard your regulatory compliance.
- **Decades of dependable service:** Municipal budgets demand equipment that delivers long-term value. Flygt propeller pumps are built for 30 to 40+ years of reliable operation.
- **Expert engineering support:** Our application engineers provide expertise for pump selection, station design optimization, and hydraulic analysis to ensure your system performs as designed.

Clog-free performance that maintains efficiency

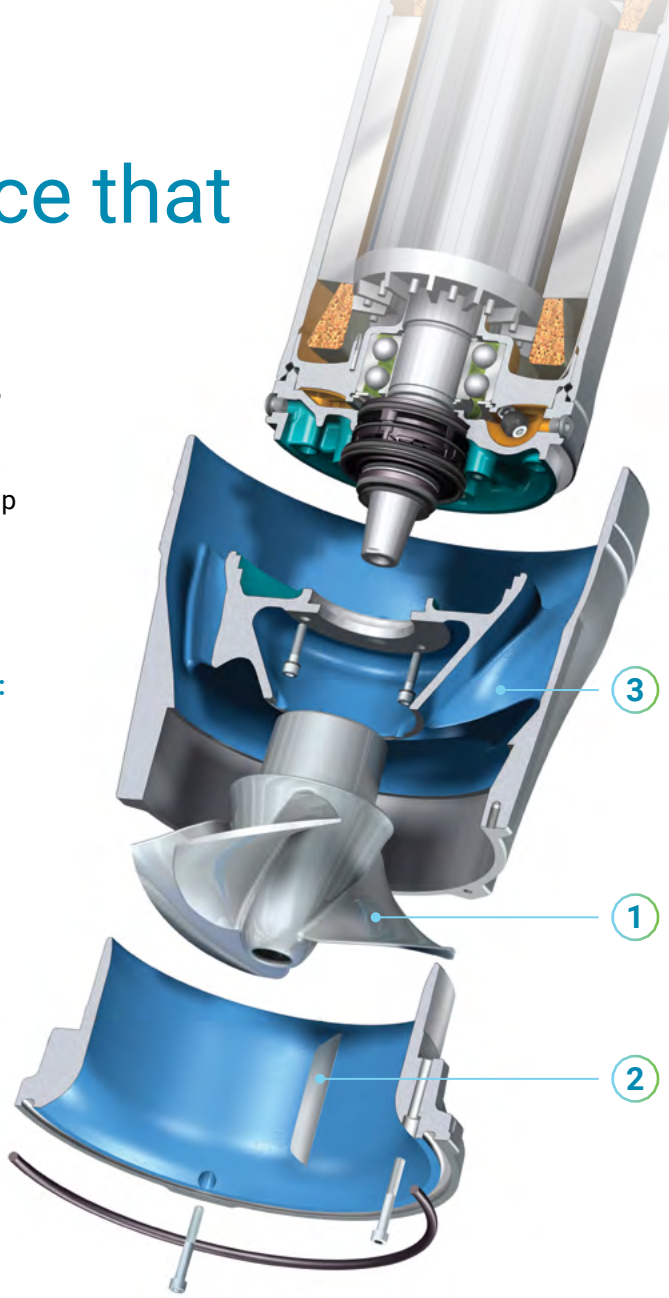
While water may appear clean, hidden debris like plastic bags, wipes, vegetation, and fibrous materials can accumulate on conventional axial flow pump propellers. This buildup reduces efficiency, increases energy consumption, and can cause pump overload and shutdown at the worst possible time. Xylem has the solution.

Flygt N-technology revolutionizes propeller pump performance through three integrated self-cleaning features:

1. **Backswept propeller blades**
   The swept-back design of the leading edge ensures that plastic bags, fibers, and other materials slide down the blade edge toward the pump housing instead of wrapping around the propeller.

2. **Relief groove**
   The integrated relief groove forces accumulated material through and out of the pump, preventing buildup.

3. **Self-cleaning guide vanes**
   The specialized design of the guide vanes creates localized turbulence around any accumulated stringy material, helping to remove debris from the vanes and discharge it from the pump.



The result: sustained performance

- **Lower energy costs:** Maintain factory-rated efficiency even in challenging conditions. Small efficiency losses over time compound into significant energy costs when pumping high volumes.
- **Fewer unplanned stoppages:** Our self-cleaning design prevents the clogging that causes pump overload and thermal shutdown.
- **Reduced maintenance:** Less frequent cleaning and inspection is required compared to conventional propeller pumps.
- **Extended equipment life:** Reduced mechanical stress from debris buildup extends bearing life and protects motor windings.

Built to last decades, not years

Every Flygt propeller pump undergoes rigorous testing before leaving the factory and arriving at your site fully assembled. Our commitment to quality ensures your pump delivers reliable performance for 30 to 40+ years of service.

Extended motor life & reliability

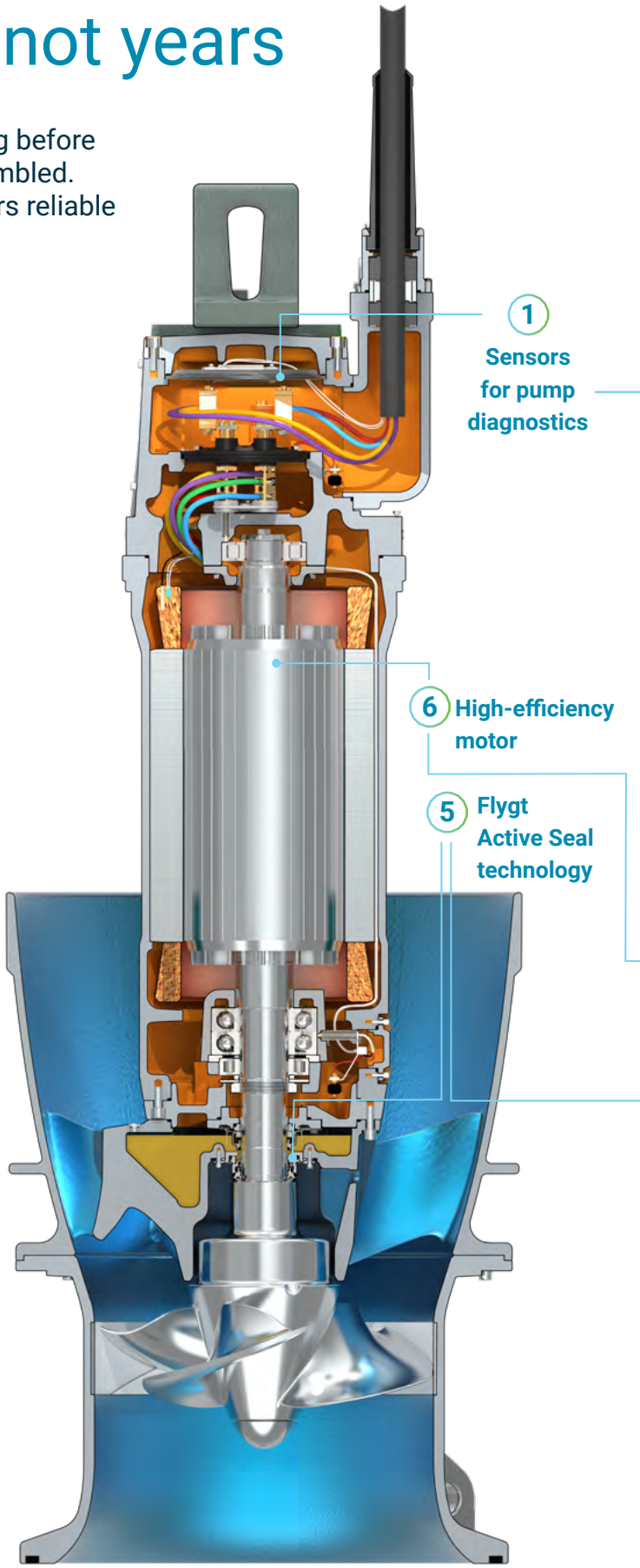
- **Class H insulation (180°C/355°F):** Greater thermal margin provides enhanced reliability and extended motor life
- **Fully submersible design:** All motors rated for continuous submerged operation up to a depth of 20 m
- **Heavy-duty bearings:** Engineered for extended operational lifetime under demanding conditions
- **Embedded thermal sensors:** Continuous monitoring prevents overheating damage
- **Explosion-proof versions available:** For hazardous environment installations requiring ATEX or NEC compliance

Zero-leakage protection

- **Dual independent mechanical seals:** Two pairs of corrosion-resistant tungsten carbide (WCCR) shaft seals provide superior sliding properties and redundant protection
- **Optimized seal environment:** Minimized shaft overhang with maximized cooling and lubrication
- **Flygt Active Seal system:** Increased seal reliability with zero leakage into the motor, reducing risk of bearing or stator failure
- **Double-grommet cable sealing:** Extra protection prevents water intrusion through cable entry

Sustained high efficiency

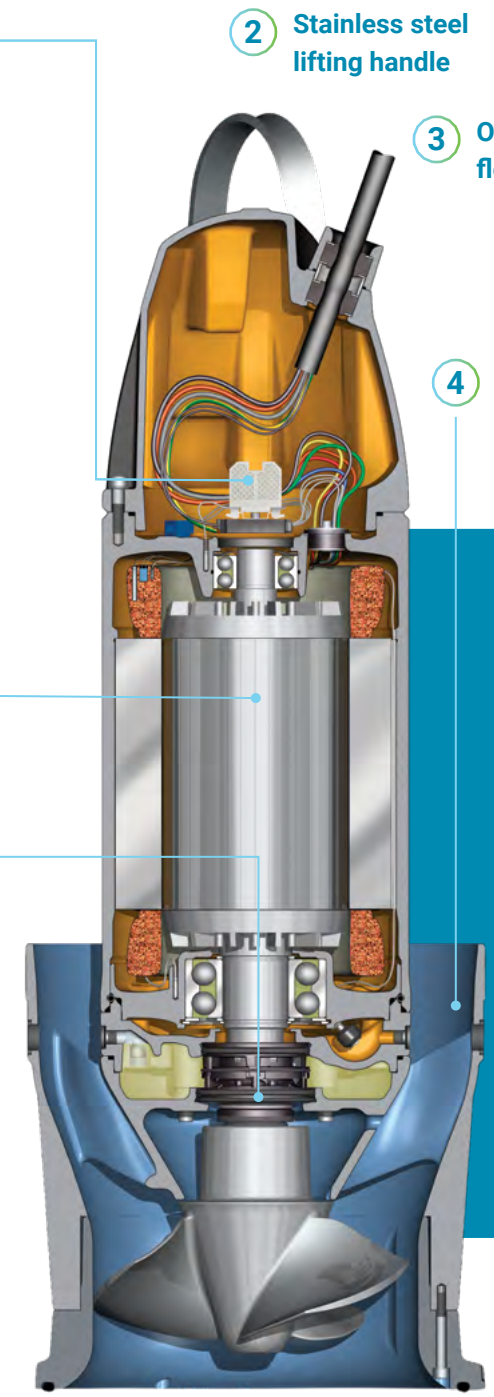
- **N-technology hydraulics:** Self-cleaning performance maintains efficiency
- **Optimized propeller materials:** Stainless steel (316), Hard-Iron, or Aluminum-Bronze construction, depending on pump size and application requirements
- **Integrated losses included:** Published performance curves include all column losses up to 500 mm above motor top



Flygt's in-house design and manufacture of mechanical seals and motors ensures optimized integration and long-term reliability in the most demanding submersible pump environments.

Proactive condition monitoring

- **Thermal protection:** Sensors in stator windings prevent overheating damage
- **Pt100 temperature monitoring:** Tracks stator and bearing temperatures for predictive maintenance
- **Leakage detection:** Alerts operators to liquid intrusion through cable or seal before damage occurs
- **3-axis vibration monitoring:** Identifies abnormal conditions for proactive service
- **Flygt MAS 801 monitoring system compatibility:** Transforms pump station maintenance with data-driven insights and predictive analytics. With remote accessibility, 24/7 health checks and actionable diagnostics, MAS 801 helps optimize maintenance schedules, reduce downtime, improve efficiency and extend equipment life.



Maximum performance, minimum footprint

The Flygt Slimline propeller pump series (PL 7020, 7030, 7035, 7040) represents a breakthrough in compact design. The reduced profile allows installation in smaller column pipes, reducing the pump station footprint and lowering construction costs while maintaining the heavy-duty reliability and superior performance Flygt is known for.

The right size for any application

Flygt propeller pumps are engineered for moving large volumes of water at low heads. Our comprehensive product range ensures optimal pump selection for your specific flow and head requirements. This eliminates the need to oversize pumps, which adds unnecessary installation and operating costs.

PL 7000 series performance range (50 Hz)

Flow range: 100 to 7,000 l/s (2.2 to 245 cfs)

Discharge head: up to 12.5 m

Motor power: 6 to 575 kW

Voltage options: 230V to 6.6kV

Column diameter: 400 to 1400 mm

Hydraulic efficiency: Up to 87%

For more detail on PL 7000 series performance and sizing, visit **Xylem Solver.**



Why right-sizing matters

Selecting the optimal pump size is easy with the help of application engineers and delivers significant advantages:

Smaller installation footprint: Right-sized pumps require smaller column diameters and reduced pump bay dimensions, lowering construction costs. This is especially critical for space-constrained water attractions and retrofit municipal projects.

Lower energy costs: Pumps operating at their design point achieve peak efficiency. Oversized pumps running off their performance curve waste energy and increase operating costs over the equipment's lifetime.

Reduced capital investment: Smaller pump, motor, column, and installation requirements translate directly to lower total project cost.

Wide range of applications

- **Stormwater and flood control:** High-capacity pumping when severe weather threatens communities
- **Wastewater treatment plant effluent:** Reliable 24/7 pumping of treated effluent
- **Return and waste activated sludge (RAS and WAS):** Clog-resistant handling of fibrous sludge
- **Raw water intake:** Continuous operation for water treatment and cooling applications
- **Water attractions:** Kayak courses, river rapids, log flumes, surf rides, and wave pools
- **Irrigation systems:** High-volume agricultural and turf irrigation
- **Aquaculture:** Water circulation for fish farming operations

Expert engineering support for your success

Pump system reliability and efficiency depend not only on the performance of the pumps, but also on a well-designed pump sump and system. With over 2 million Flygt pump stations worldwide, we bring extensive expertise in fluid dynamics, pump station design, and system optimization.

Pump station design services

Flygt application engineers provide comprehensive support throughout your project:

Pump selection: Identify the optimal pump model for your specific application requirements

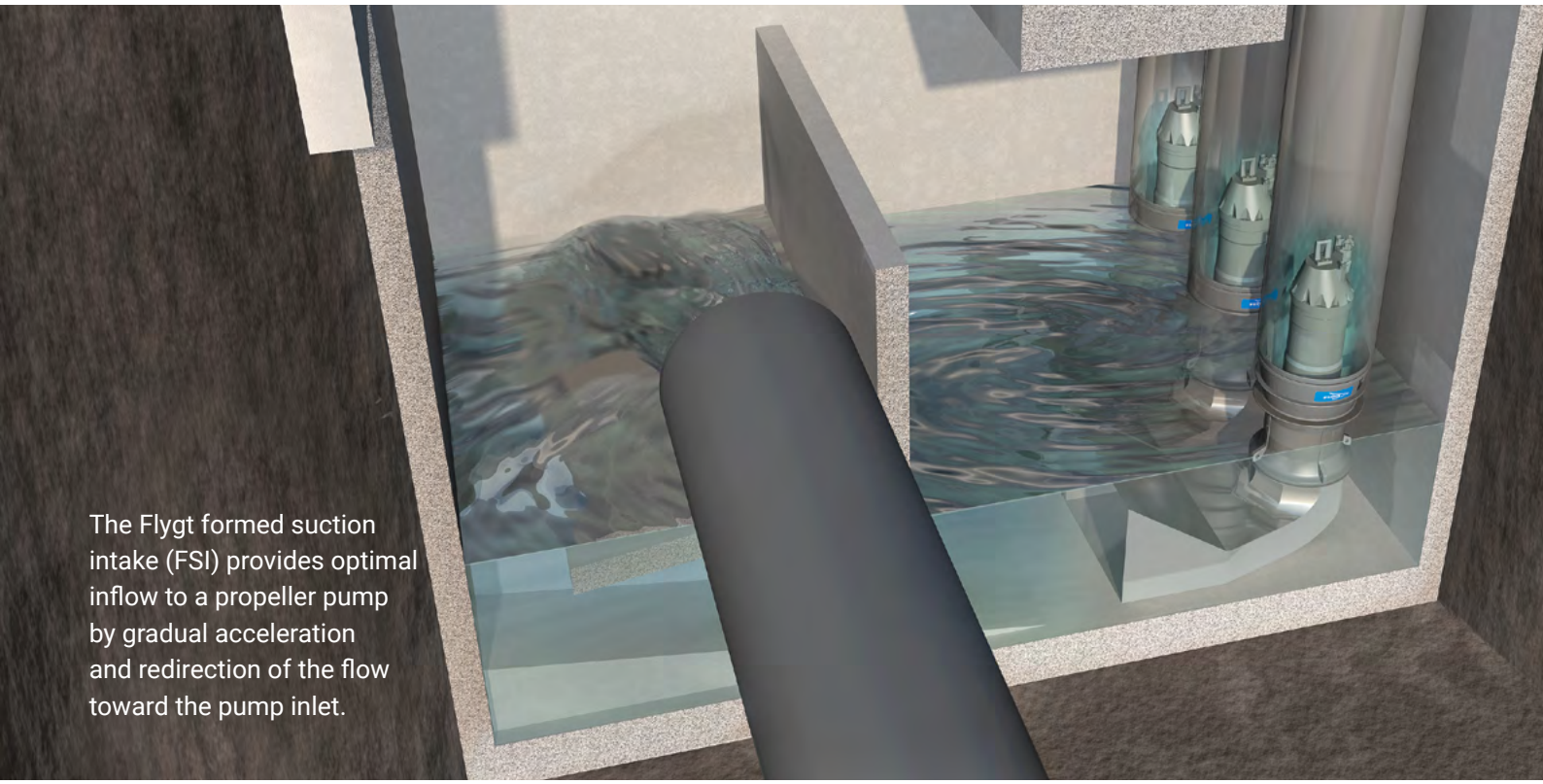
System analysis: Calculate head losses and verify system performance

Sump design: Ensure uniform approach flow to achieve optimum pump performance and maximize equipment life

Hydraulic analysis: Prevent accumulation of sediment and surface scum

Advanced flow modeling (CFD analysis): Optimize pump station designs and develop effective solutions for unique requirements

Physical scale modeling: Testing for critical applications requiring validation



The Flygt formed suction intake (FSI) provides optimal inflow to a propeller pump by gradual acceleration and redirection of the flow toward the pump inlet.

Reliable performance when it matters most

Protecting historic communities | El Paso, Texas, USA

The Chihuahuita historic district in El Paso, Texas, faced chronic flooding due to heavy rains that raised Rio Grande water levels and overwhelmed the existing drainage system. After a devastating 100-year flood in 2006, the city sought a solution that could operate within limited space and budget constraints.

Flygt provided high-volume, low-head axial flow propeller pumps (PL 7061) combined with Flygt formed suction intake (FSI) devices to optimize hydraulic conditions and enable efficient stormwater management. The design delivered a pumping capacity of 27,000 GPM and accommodated large swings in river elevation, while minimizing footprint and energy use.

As a result, during torrential rains in 2012, the new pump station prevented flooding in Chihuahuita, delivering long-awaited protection for the historic district.



For more detail on PL 7000 series performance and sizing, visit **Xylem Solver.**

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