



# Flygt A-C Series Large Vertical Column Pumps

THE MOST ENERGY-EFFICIENT PUMPS ON THE MARKET



**FLYGT**  
a xylem brand

# Flygt A-C Series Large Vertical Column Pumps

Flygt (formerly Allis Chalmers Pump, Inc.) has more than 130 years of design and manufacturing experience in pumps and pumping systems. Flygt innovation has kept pace with today's demand for higher efficiency, greater reliability and state-of-the-industry manufacturing standards. Numerous impeller designs are available in single and multiple stage configurations to cover a wide range of operating conditions to better meet your needs. Flygt designs offer industry leading efficiencies of up to 92%. The rugged heavy duty construction, cast bowl components and conservative mechanical design minimize vibration and provide for long term trouble-free operation. The experience, capability, on-time delivery, support during installation/maintenance and performance of equipment has earned Flygt the reputation as one of the most reliable pump manufacturers in the world.

Flygt A-C Series vertical column pumps are custom engineered for each individual project with the materials and features to meet the project requirements. Typical applications for vertical column pumps are in power generation, water & wastewater, general industrial, irrigation and flood control. Pump sizes ranging from 24 inches up to 144+ inches in diameter allow Flygt to tailor fit the pump to meet the specific requirements of your application.

## 1. DRIVER PEDESTAL

Heavy-duty fabrication designed with openings to provide access to the pump coupling and stuffing box.

## 2. STUFFING BOX

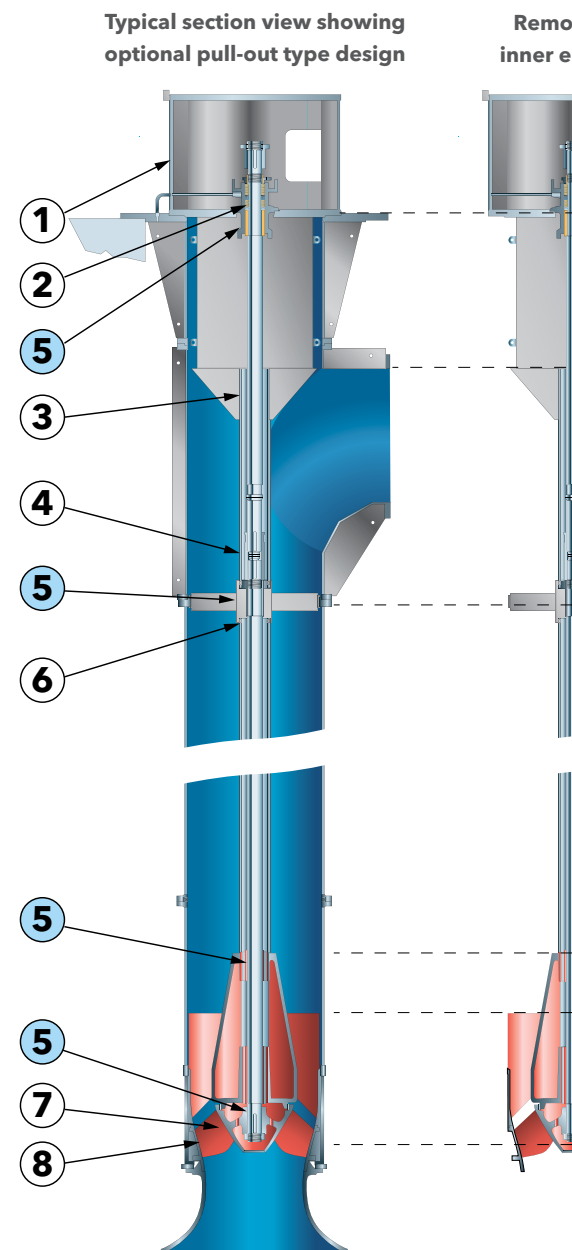
Packed with graphite impregnated PTFE material, it reduces resistance and prolongs shaft sleeve life. An easily accessible split gland simplifies packing adjustment and replacement.

## 3. SHAFT TUBE

Protects the shaft from the pumped fluid and provides a passage for bearing lubrication. One end of the shaft tube is provided with an o-ring sliding fit to allow for thermal expansion and for ease of disassembly and reinstallation. Pumps can also be provided without shaft tubes (open line shafting) for self lubricated applications.

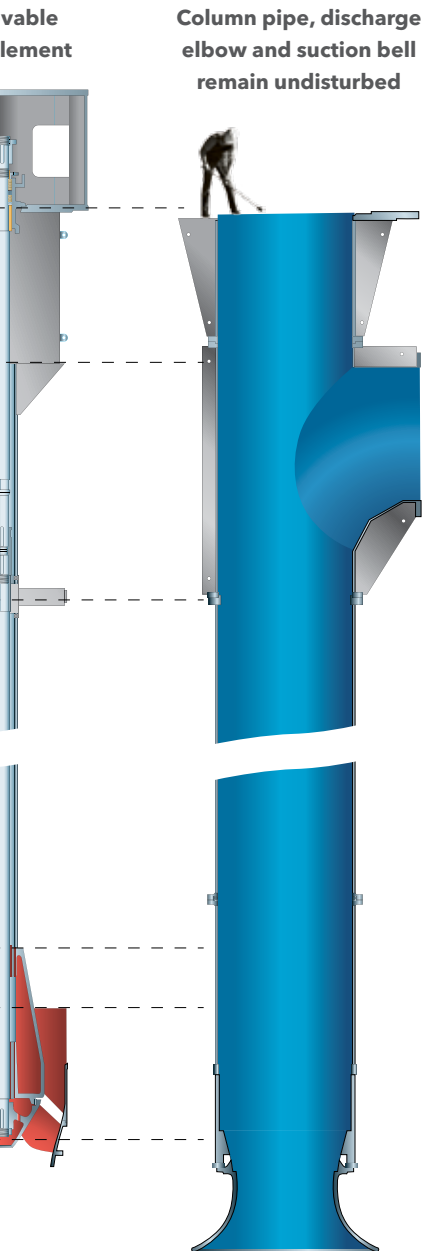
## 4. INTERMEDIATE COUPLING

(When required) Solid sleeve design provides a rigid transmission of power and torque through the shafts. The coupling is positively driven via coupling keys and transmits thrust loads via the split thrust ring design.

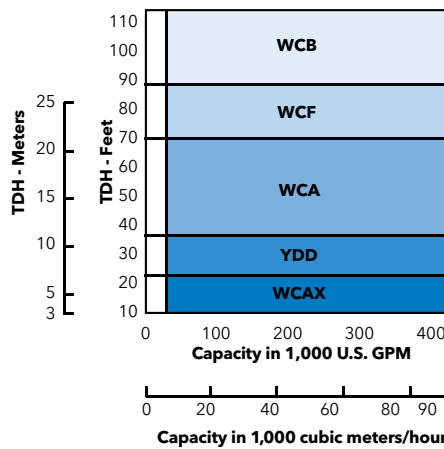


# Customized Pumping Solutions

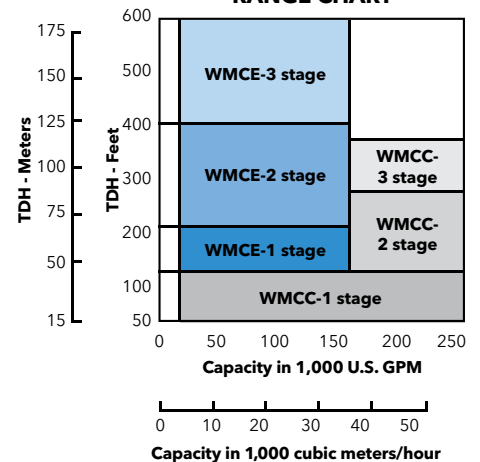
Flygt A-C Series pumps are available in above floor or below floor configurations; two floor installations, with thrust bearings in the pump or motor; and nearly unlimited material configurations. Flygt also offers the option for a true pull-out element configuration (as shown below) on our semi-enclosed impeller pumps. The pull-out design substantially reduces maintenance and downtime costs by allowing removal of the inner element without disturbing the suction bell, column pipes, discharge elbow and discharge piping. Column size for a given capacity is not affected by the “pull-out” design and there is no sacrifice in pumping performance. The sliding and conical fits assure proper alignment upon reassembly. The inner element is completely removable through the top of the pump, thus eliminating the need to drain or enter the sump during maintenance. When the time comes to restore system efficiency, simply replace the wear components and your pump is ready for many more years of reliable performance.



**LOW TO MEDIUM HEAD PUMPS RANGE CHART**



**HIGH HEAD PUMPS RANGE CHART**



## 5. BEARINGS

Upper and lower bearings are rigidly mounted from the top of the pump and diffuser. The impeller is overhung from the diffuser bearing, offering increased efficiency and a reduced chance of clogging. Bearing spacing is conservatively designed using a lateral critical speed analysis. When required, intermediate bearings are installed and supported via the bearing spiders which are fitted to the column pipe. Bearings are typically either fluted rubber or elastomeric sleeve type bearings designed for water lubrication. Grease lubricated bearings are an option when desired.

## 6. SHAFT SLEEVES

Provided at all bearing locations and the stuffing box to prevent the shaft from wearing. The hardened alloy sleeves extend service life and are designed for easy replacement.

## 7. IMPELLER

Single suction, mixed flow and rugged cast construction. Impellers are cast in a single piece. The vanes are formed by accurately set cores, thus assuring even thickness and vane spacing. Impellers are balanced to an ISO/ANSI G2.5 quality level.

## 8. IMPELLER CONE

Separately cast component of same material as impeller for long wear life and reduced downtime. Design permits economical renewal of clearances.

# The Flygt Advantage

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**PERFORMANCE TESTING** - with testing capabilities up to 300,000 GPM (68,000 m<sup>3</sup>/hr) the performance of your pump can be accurately verified before it leaves the factory.

**CRITICAL SPEED ANALYSIS** - performed on every rotor to ensure that the first critical speed is well above the pump operating speeds.

**MECHANICAL DESIGN ANALYSIS** - performed on every pump to determine the proper shaft size, bearing spans, wall thickness, bolting sizes & quantities, and other critical design features.

**FEA & CFD ANALYSIS** - in-house Finite Element Analysis and Computerized Fluid Dynamics analysis are available to ensure that there are no system resonant frequency or hydraulic concerns.

**STARTUP ANALYSIS** - determines the optimal starting sequence between the pump, motor and control valve, and confirms the ability of the drive to start the pump under any number of possible circumstances. Available upon request.

**EXPERIENCED CUSTOM DESIGNS** - every order is custom designed to match the specific pump configuration, mechanical design, hydraulic requirements and materials of construction dictated by the application and the contract documents.

**PUMP QUALITY** - all pump components and assemblies are inspected and documented in accordance with Flygt ISO 9000 certified quality program. Any special contract requirements are incorporated into the Inspection and Test Plan developed for each contract.

**MODEL TEST DATA** - the high efficiency hydraulics for each pump design have been extensively model tested over the full range of impeller diameters/tilts. Model testing in a closed loop system provides accurate measurement of all pump performance characteristics along with NPSHr values, hydraulic thrust values and the development of three quadrant curves (Karman-Knapp curves).

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Flygt is a brand of Xylem, whose 12,000 employees are addressing the most complex issues in the global water market.

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