Flygt A-C Series

WCXH Axial Flow Pumps

HORIZONTAL AXIAL FLOW PUMPS FOR COST-EFFECTIVE FLOOD CONTROL

FLYGT

a xylem brand

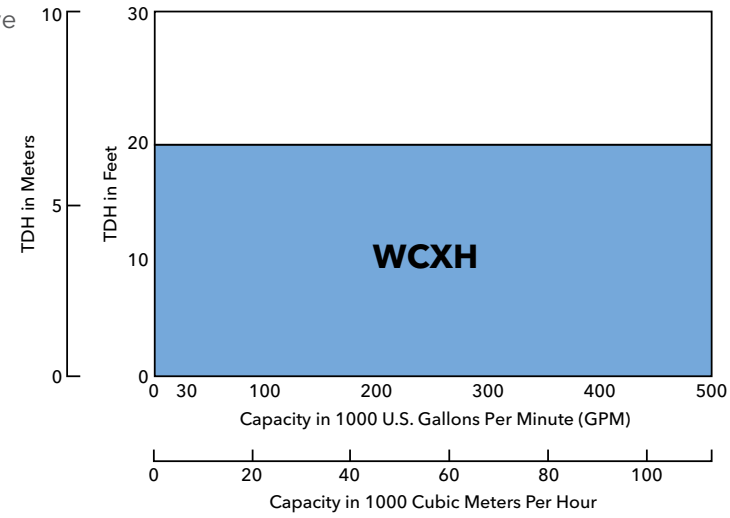
Highly efficient pumping in a highly customizable solution

The Flygt A-C Series WCXH range of horizontal customized axial flow pumps deliver the industry's highest pumping efficiency for exceptionally large flows at low heads. These pumps feature an axial flow split case design with decades of proven performance in tough environments. The special design, which also keeps the rotating element dry during idle time, makes them the perfect choice for pump stations with limited running hours. Customization, including your choice of suction bell or formed suction intake, multiple discharge arrangements, and various pump drive sources including electric motor or diesel engine, make them the perfect fit for your specific facility.

Capacity: up to 500,000 GPM (115,000 m^3/hr) and above

Heads: up to 20 ft (6m)

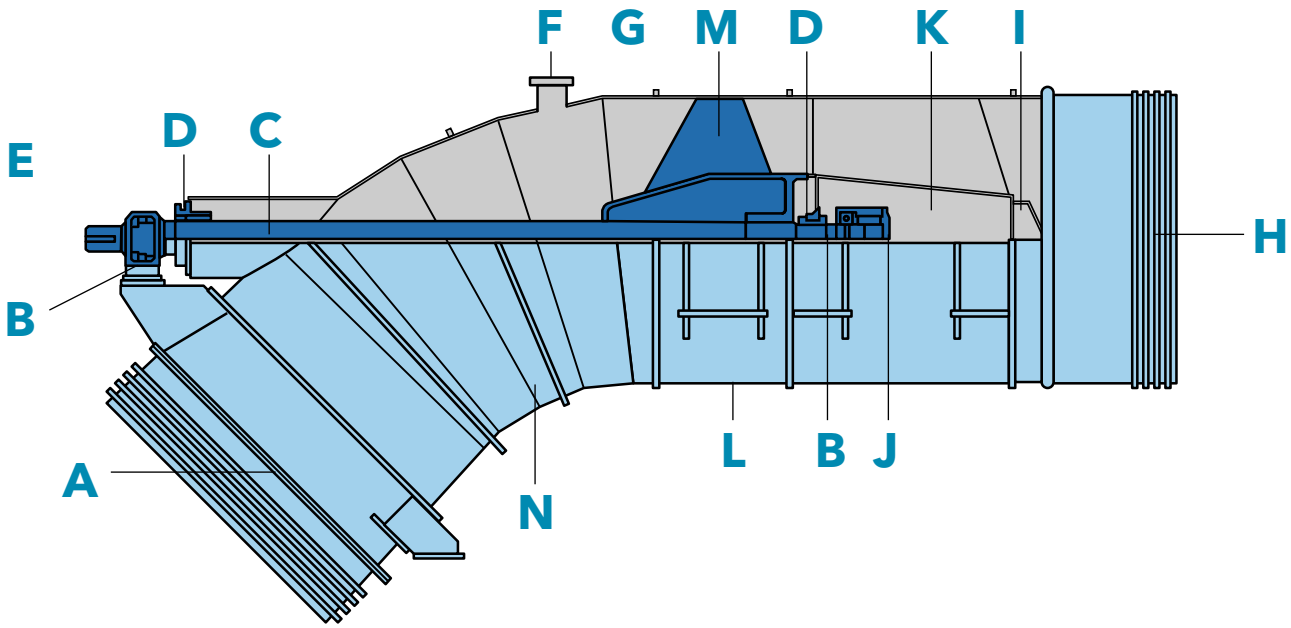
Sizes: up to 144" (3.7m) discharge



Efficiency isn't the only advantage

- The unique design of the WCXH delivers a variety of operating benefits:
- Pumps sit above the water level so rotating elements are not submerged during idle time
  - Decreases erosion and corrosion
  - Eliminates the need for gates, stop plugs and dewatering systems for maintenance
- Split casing design decreases costs
  - Suction elbow, impeller housing, diffuser and bearing housings are all split for easy access, reducing maintenance time and cost
  - Cranes do not need to lift the entire pump. Lifting just a portion allows for smaller cranes, which reduces station costs and installation costs
  - Can ship in pieces for lower shipping costs up front and when shipping for regular maintenance
- Between bearing design reduces vibration and lessens deflection at the impeller compared to an overhung design. Complete rotor can be dynamically balanced to ISO 1940 standards.

WCXH Design Features



A. Suction Piece: Allows connection to the concrete suction tunnel. Ribs are welded to outside to ensure a positive engagement with the concrete.

B. Bearings: Self-oil lubricated antifriction type for maximum life. Bearing housings are split for easy inspection and maintenance.

C. Shaft: Precisely machined from alloy steel to receive the impeller, bearings, sleeves and coupling. Conservatively sized to transmit the maximum required power. Designed with lateral and torsional critical speeds safely above the operating speed of the pump.

D. Stuffing Box: Soft graphite-impregnated Teflon reduces stuffing box resistance and shaft sleeve wear. The stuffing box is equipped with a split gland to simplify packing adjustment and replacement.

E. Optional Rotating Element Balance: The rotating element can be balanced to ISO 1940 standards.

F. Priming Connection: Large priming connection for evacuation of air during pump starting. Two priming connections available (one for normal operation and one backup).

G. Trash Cutter (Optional): Available for chopping up large solids to ensure proper pump performance during the most demanding conditions.

H. Discharge Piece: Allows for thermal expansion and connection to the concrete discharge tunnel. Ribs are welded to outside to ensure a positive engagement with the concrete.

I. Nose Cone: Guides flow into the discharge tunnel ensuring high efficiency. Removable for inspection of inner bearing.

J. Bearings: Can be fitted with RTDs and vibration sensors as required.

K. Diffuser: Heavy wall fabricated steel construction. Flanged horizontally and vertically, and split along the shaft to allow for easy removal and access to the bearings.

L. Impeller Housing: Accurately machined to ensure correct running clearances of the impeller. Flanged vertically and horizontally for ease of maintenance and assembly.

M. Impeller: Single suction, open type impeller with excellent suction lift characteristics. Heavy duty casting available in a variety of materials.

N. Suction Elbow / Casing: Heavy walled steel fabrication. Mitered design ensures smooth flow into the impeller. Provides strength for the exterior bearing support.

The Flygt A-C Custom Pump Advantage

PERFORMANCE TESTING - with testing capabilities up to 300,000 GPM (68,000 m^3/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.

START-UP 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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