CENTFOS

SWQ-H

Submersible Sewage Pump

High-Performance Pump for Large Pumping Stations, Industrial Wastewater & Sewage Transfer



Typical Applications

- Sewage Pumping Stations
- Industrial Wastewater
- Wastewater Treatment Plant Inlet Transfer
- Process Wastewater
- Large Drainage Systems

Key Features

- High Flow Capability
- Robust Solids Handling
- Anti-Clog Hydraulic Design
- Reliable Double Mechanical Seal
- Optional Mixing Support
- Fixed or Auto-Coupling Installation

MAKE THE FLUID ENDLESS)

CENTFOS

TECHNICAL DATA SHEET

SUBMERSIBLE SEWAGE PUMP

SWQ-H | High-Capacity Sewage Pump

For municipal pumping stations, large wastewater flows and sludge-water transfer

The **SWQ-H Series** is engineered for high-capacity sewage pumping, wastewater transfer and demanding municipal and industrial applications. Featuring high-efficiency hydraulic design, large solids-handling passages and single- or double-channel impeller configurations, the series ensures reliable conveyance of raw sewage, suspended solids, fibrous materials and sludge-bearing wastewater. Its robust submersible construction, dual mechanical sealing arrangement and integrated motor protection support continuous-duty operation in sewage lifting stations, wastewater treatment plants, industrial drainage networks and large-scale water transfer systems.	

1 Manufacturer-published performance envelope

Maximum rated capacity	4,000 m^3/h
Maximum rated head	110 m
Motor rated output	Not stated; select from certified duty-specific curve
Nominal speeds	740 / 980 / 1,450 / 2,900 r/min
Discharge connection	DN50–DN600
Standard cable supplied	5 m (can be supplied any length upon request)
Rotation viewed motor-to-pump	Clockwise

Catalogue maxima describe the model family, not a simultaneous rated duty point. Pump selection requires the approved individual Q–H, efficiency, power and allowable-operating-range curves.

2 Application positioning and differentiating features

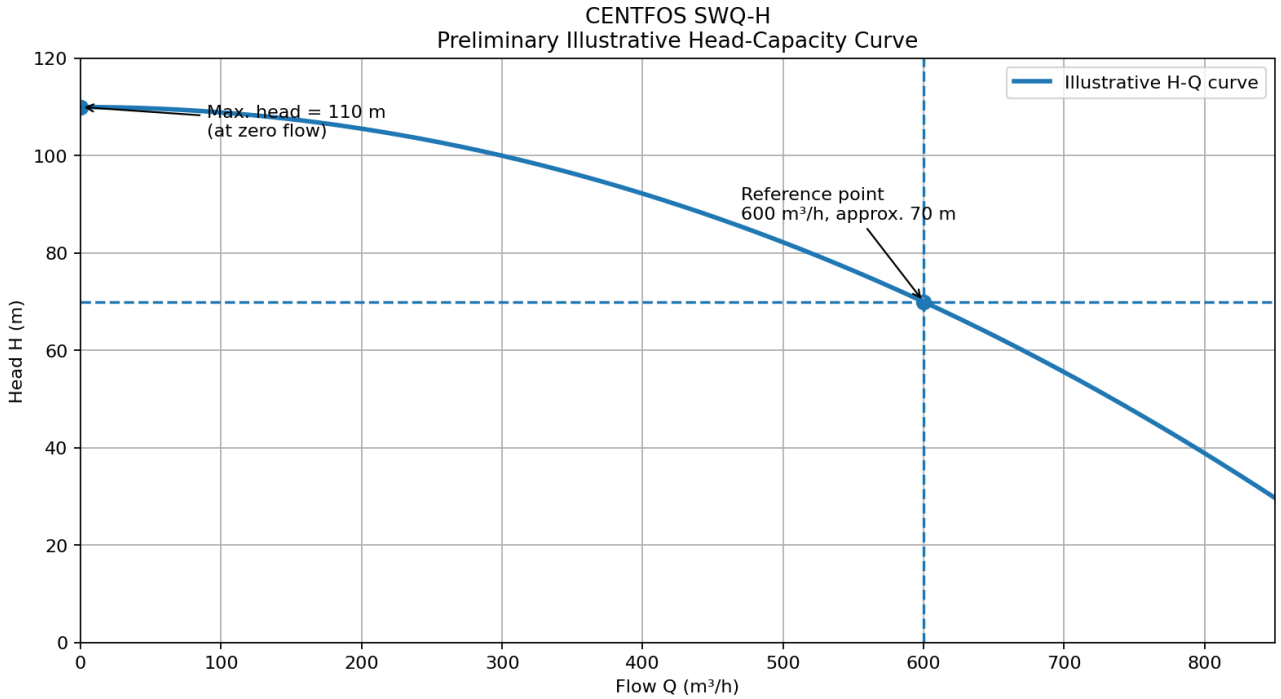
Primary application	Larger municipal wastewater pumping and industrial transfer
Impeller arrangement	Single- or double-channel hydraulic passages per brochure
Shaft sealing	Two independent single-face mechanical seals in series; oil chamber
Condition monitoring	Optional oil-chamber ingress/leakage sensor per brochure

RECOMMENDED APPLICATION ENVIRONMENTS

- Major municipal sewerage lifting stations and transfer mains
- Wastewater treatment plant influent, return and interstage pumping
- Industrial wastewater handling with solids and fibres
- Activated/digested sludge-water transfer where viscosity and solids duty are validated

3 Source-stated common operating bases

Pumped medium temperature	Up to 30 °C (source common limit)
Pumped medium density	Up to 1,050 kg/m^3
Motor ingress protection / insulation	IP68 / Class F (general family statement)
Flange pressure rating	0.6 MPa at DN200 and below; 1.0 MPa at DN250 and above (source)
Partial exposure above liquid	Motor portion exposed above liquid no more than half its height (source)
Operating point	Within manufacturer's approved head and motor-load range



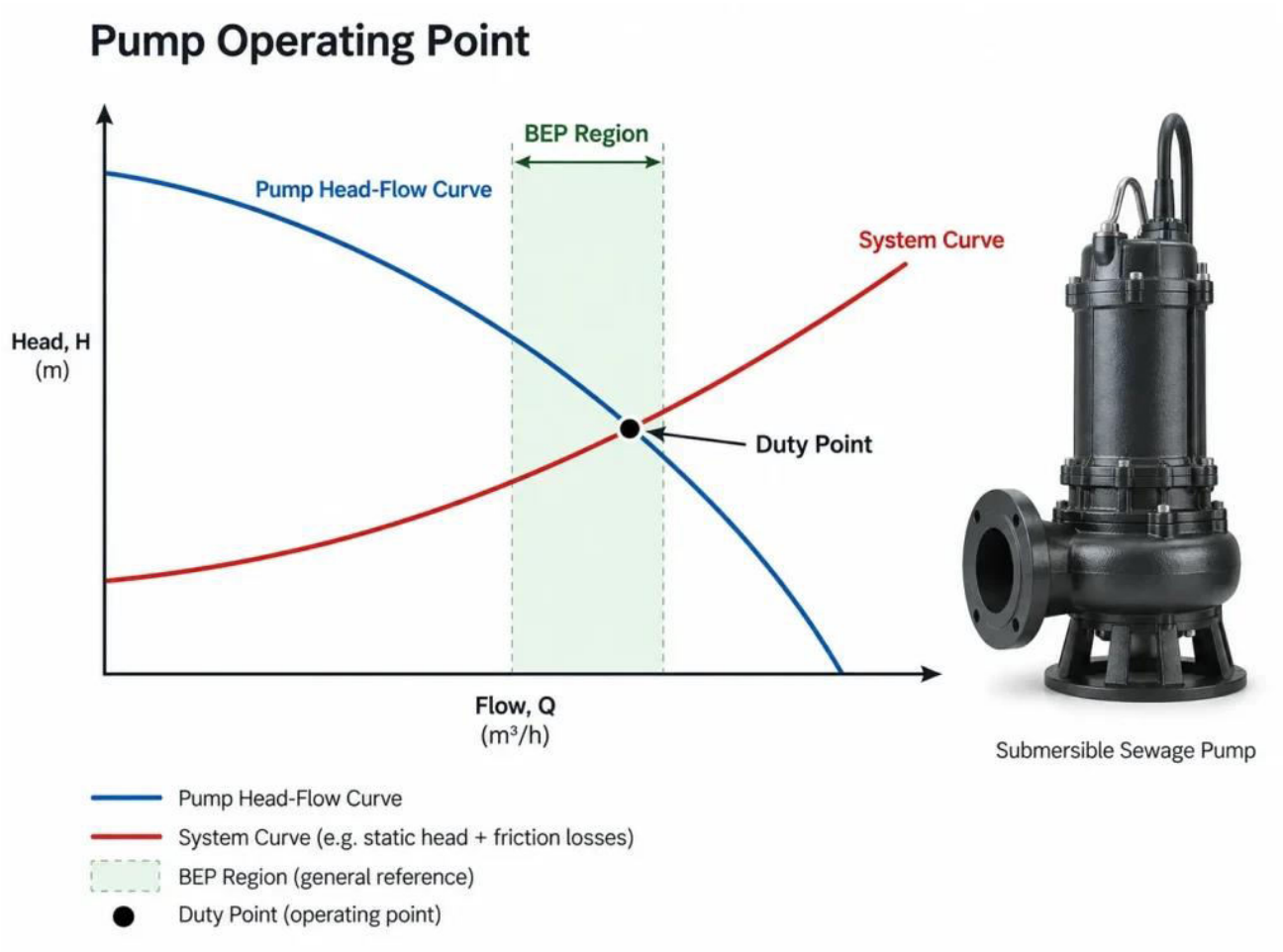
Note: This is an illustrative engineering curve prepared from the requested limits only.
It is not a certified manufacturer performance curve. Final duty point, impeller diameter, efficiency, motor power and allowable operating range must be confirmed by CENTFOS.

SWQ-H | APPLICATION ENGINEERING GUIDANCE

4 Hydraulic selection and wet-well design

Large sewage stations should be designed around the total station system curve, wet-well cycling or level-control strategy, pump duty/assist/standby arrangement, minimum velocity in rising mains, surge analysis and emergency storage. Confirm each proposed motor power, cooling arrangement and permissible submergence from its certified selection.

- Determine the system curve from static lift, pipe losses, minor losses, peak/average inflow, fouling allowance and future flow scenarios.
- Verify operating point and minimum/maximum permissible flow, motor input power and energy efficiency from certified OEM curves.
- Check discharge velocities, retention and sedimentation, pressure transients, air release and check-valve slam, especially in long rising mains.
- Size usable wet-well storage, start/stop levels and duty/standby sequence for permitted starts per hour and minimum cooling/submergence.



Submersible Sewage Pump

5 Installation and mechanical integration

Installation alternatives	Mobile hose, fixed flange or automatic coupling; choose according to particular variant and installation
Piping arrangement	Isolating valve, non-return valve, dismantling provision, pressure tapping and safe vent/drain as applicable
Lifting and handling	Use rated lift points and lifting equipment; never lift by power cable
Sump access	Provide safe pump retrieval, cable routing, ventilation/gas testing and confined-space arrangements
Station configuration	Duty/standby or duty/assist/standby per inflow reliability study; N+1 where specified

6 Electrical and automation interfaces

- Provide rated electrical supply, motor protection, earthing, suitable starter/VFD and local isolator per OEM motor data and project hazardous-area assessment.
- Consider level measurement with independent high-high alarm and low-low dry-running stop; include local/manual/automatic modes with protected control logic.
- Typical feedbacks: run, trip, motor overload/thermal, seal leak if fitted, well level, discharge pressure (where needed) and generator/ATS status.
- For multi-pump stations, alternate lead duty, manage maximum simultaneous starts, and preserve safe operation on PLC communications failure.
- SCADA telemetry may include pump hours, start count, energy, station flow/level, faults, events, emergency power state and alarm acknowledgment.

7 Commissioning and acceptance checklist

- Verify pump model, impeller, rotational direction, cable seals, motor insulation resistance and manufacturer’s wet-testing method.
- Confirm equipment ratings, protection trips, lifting/coupling integrity, pipework supports and actual operating duty point.
- Trend flow, discharge head, current, voltage, vibration, noise and level-control behaviour through realistic station cycles.
- Test duty/standby changeover, high-high level, seal-leak/thermal protection (if fitted), mains failure and generator/ATS recovery.

SWQ-H | PROCUREMENT AND TECHNICAL QUALIFICATION

8 Application limitations and service planning

- Verify solids free-passage diameter for the chosen impeller; catalogue wide-passage descriptions are not a quantified passage size.
- Sludge content, viscosity, abrasiveness and temperature can materially change hydraulic performance and seal life.
- Check NPSH/submergence, air entrainment, hydraulic transients and parallel-operation stability for large stations.

Preventive maintenance should be established from duty severity and the approved OEM manual. Inspect cables, lifting gear, couplings, impeller condition, seal chamber, float/level instruments, earth continuity and control/protection functions at project-defined intervals.

9 Data required for final project-specific selection

Hydraulic duty	Required Q, total dynamic head, min/normal/peak flow, operating hours and system curve
Fluid properties	Temperature, density, pH, chloride, solids %, particle size, fibrous debris and abrasion/corrosion potential
Installation	Sump dimensions, minimum/maximum level, wet/dry configuration, guide rails, discharge layout
Electrical	Voltage, frequency, supply tolerance, start method, motor thermal/seal sensors, cable run, area classification
Operational	Duty/standby philosophy, starts/hour, power backup, PLC/SCADA protocol and alarm requirements
Acceptance	Guaranteed duty/efficiency/absorbed power, pressure tests, FAT, certificates and warranty
OEM confirmation	Certified model-specific curve, motor kW, impeller diameter, free passage, materials, mass, dimensions and tolerances

10 Technical submittal deliverables

- Certified performance and absorbed-power curves at actual operating speed, with preferred/allowable range and test tolerance.
- General arrangement drawing, dimensions/weight, lifting arrangement, wet-well/coupling installation drawing and interface details.
- Motor, seal, bearing, impeller, coating/material and cable schedules; corrosion suitability and solids-handling declaration.
- Wiring/termination diagram, instrument/protection list, control philosophy, I/O list, FAT/SAT/inspection plan and O&M manual.



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