CENTFOS

SWQ-Y

Cutting Submersible Sewage Pump

Cutting-Type Pump for Fibrous Sewage, Tough Solids & Difficult Wastewater



Typical Applications

- Hotels and Hospitals
- Restaurants and Kitchens
- Laundry or Textile Wastewater
- Septic and Sludge Discharge
- Basement Sewage Pumping
- Municipal Sewage with Fibrous Debris

Key Features

- Cutter System
- Anti-Blockage Design
- Shredding of Fibrous Solids
- Wear-Resistant Cutting Components
- Reliable Shaft Sealing
- Multiple Installation Options

MAKE THE FLUID ENDLESS)

SUBMERSIBLE SEWAGE PUMP | TECHNICAL DATASHEET

SWQ-Y | Cutting-Type Submersible Sewage Pump

For difficult fibrous wastewater, tough debris and blockage-prone services

The CENTFOS SWQ-Y Series is a heavy-duty cutting-type submersible sewage pump engineered for reliable handling of wastewater containing long fibres, cloth, plastics, and other entangling solids. Equipped with a high-hardness cutting mechanism and specially designed impeller, the pump shreds and reduces solid materials before discharge, minimizing clogging and ensuring continuous, efficient pumping. Its robust construction makes it particularly suitable for municipal sewage networks, wastewater treatment plants, industrial effluent systems, hospitals, commercial facilities, and demanding sewage lifting stations where effective solids reduction and uninterrupted operation are essential.



1 Manufacturer-published performance envelope

Maximum rated capacity	650 m^3/h
Maximum rated head	50 m
Motor rated output	Not stated; select from certified duty-specific curve
Nominal speeds	1,450 / 2,900 r/min
Discharge connection	DN50–DN300
Standard cable supplied	5 m
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

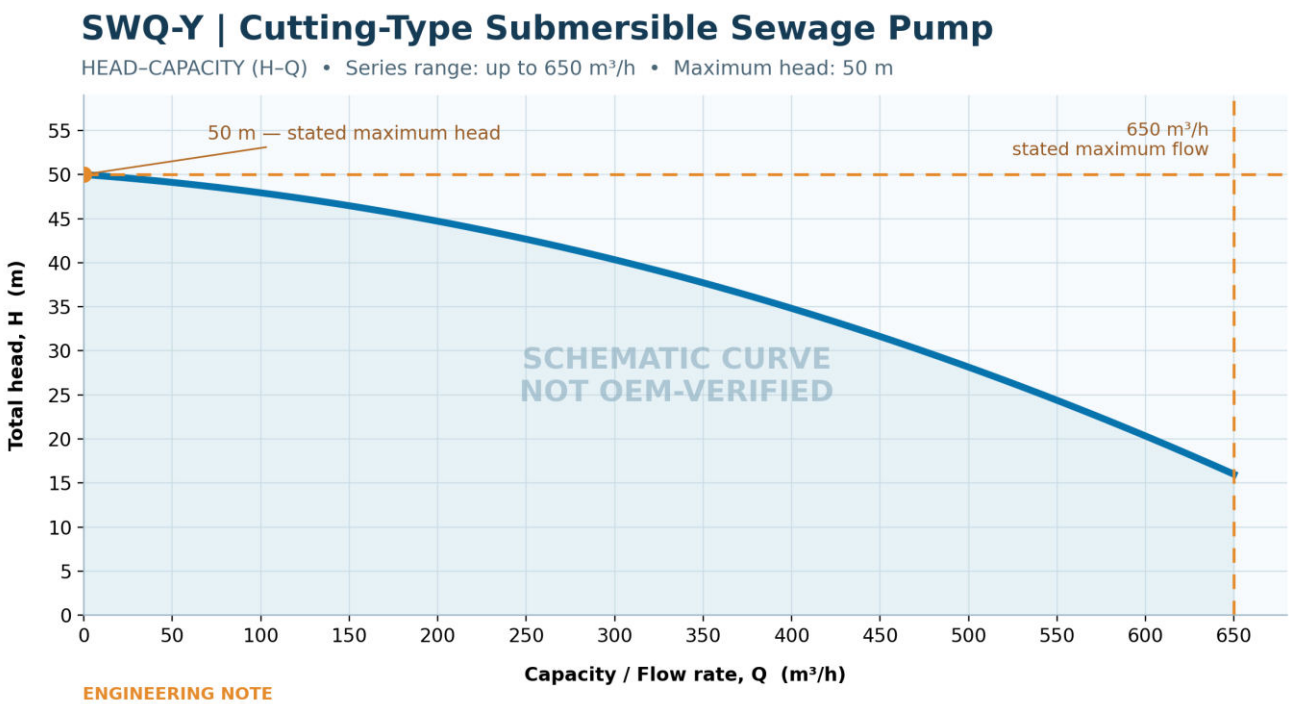
Primary application	Sewage with long fibres and tough, flexible material
Cutting mechanism	Semi-open double-spiral impeller plus cooperating cutting disc
Anti-entanglement	Diversion guide grooves and matched flow passages
Shaft protection	Pump-side and motor-side mechanical seals with oil-chamber lubrication

RECOMMENDED APPLICATION ENVIRONMENTS

- Sewage lift stations serving food service or complex urban effluent
- Septic tank and sludge discharge, subject to solids-content confirmation
- Wastewater with textiles, woven fibres and other entanglement-prone material
- Basement/garage drainage systems with challenging solids content

3 Source-stated common operating basis

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



ENGINEERING NOTE

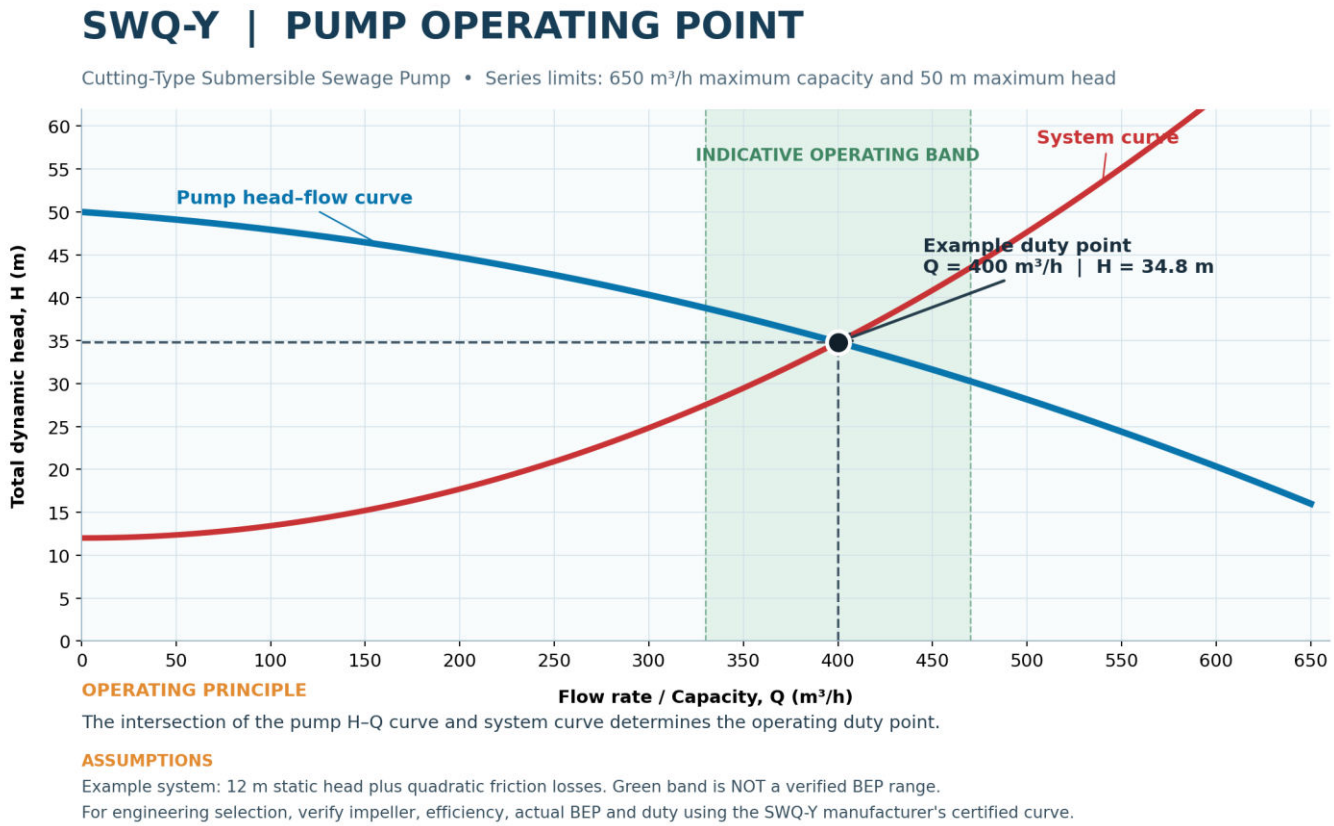
50 m maximum head and 650 m³/h maximum capacity are catalogue limits, not a confirmed common duty point.
The descending line is an assumed presentation curve. Use the exact impeller/model OEM curve for hydraulic selection.

SWQ-Y | APPLICATION ENGINEERING GUIDANCE

4 Hydraulic selection and wet-well design

Cutter selection requires an explicit debris profile, rag loading, abrasive fraction, duty cycle, available head and pipeline configuration. Confirm cutter material/clearance, admissible solids, wear life and service clearances with the OEM for the particular duty.

- 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.



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-Y | PROCUREMENT AND TECHNICAL QUALIFICATION

8 Application limitations and service planning

- A cutting pump is not a substitute for a grinder or macerator rated to process all possible solids; stones, metal and very abrasive grit can damage cutting components.
- Confirm minimum particle size after cutting only where required and backed by OEM tests; it is not specified in the source.
- Schedule inspection of cutter wear/clearance and verify actual pump torque margin on high-solids conditions.

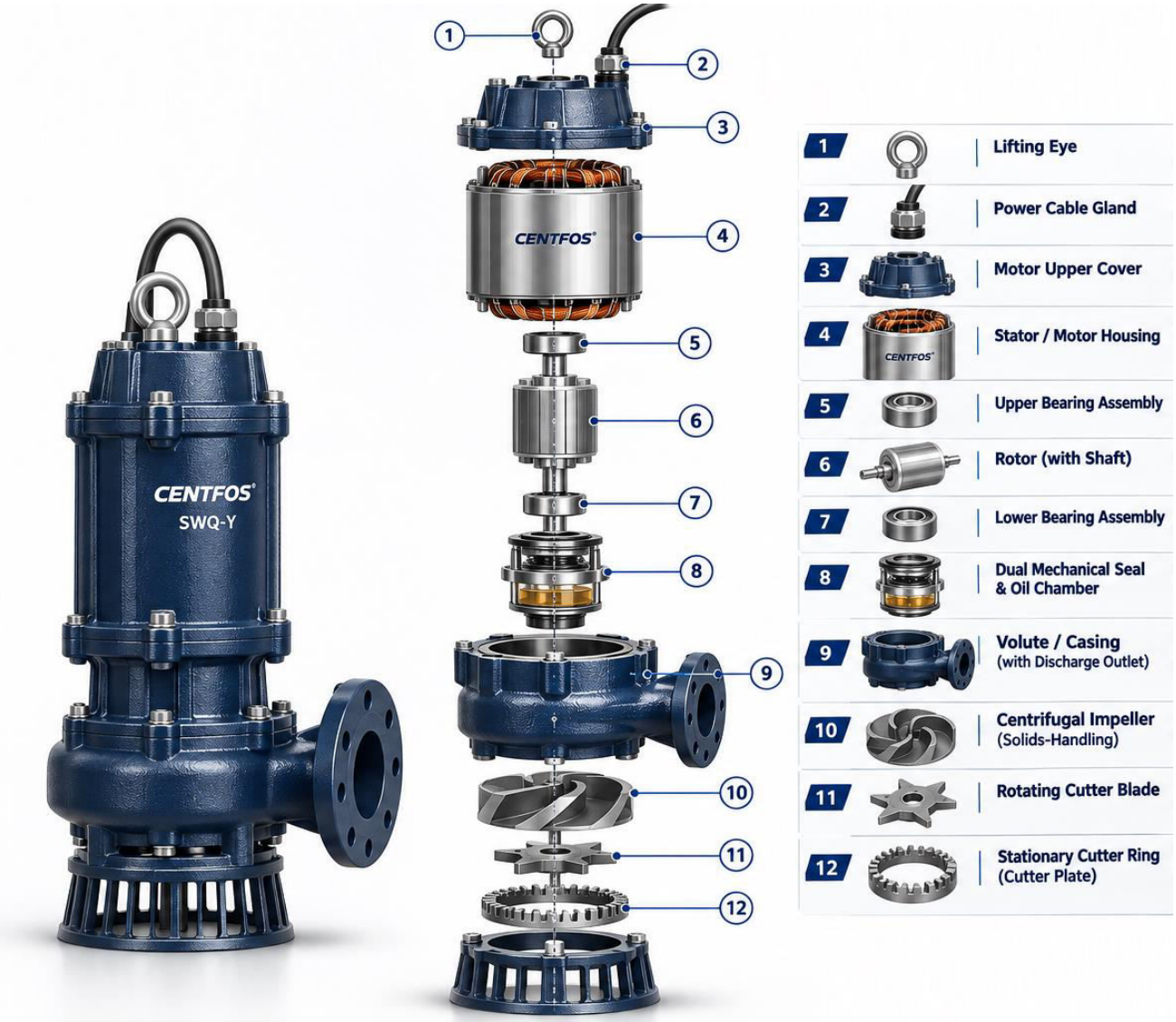
Preventive maintenance should be established from duty severity and the approved OEM manual. Inspect cables, lifting gear, couplings, impeller condition, seal chamber, float/level instruments, earth continuity and control/protection functions at project-defined intervals.

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.



Head office:

Via dell' Annunciata, 23/4 20121 Milano ITALY

Factory 1: (Precision Engineering & design)

Via Tevere '8' 21015, Lonate Pozzolo VA, ITALY.

Factory 2: (industrial pumps)

No. 518 Zixu road, Minhang Street, Shanghai, CHINA.

Factory 3: (API-610 Pump)

No-901, Shuangsheng Road, Lushunkou district, Dalian CHINA

Email : info@centfos.com