



Supumps WeChat Official Account

中国代表处

舒朋士环境科技（上海）有限公司
地址：上海市杨浦区国宾路36号1506室（集中登记地）
电话：021-54737855
邮编：201200

中国工厂及研发中心

舒朋士环境科技（常州）股份有限公司
地址：江苏省常州市武进区景德西路399号
电话：0519-85258081
邮编：213166

Inquiries: 400-680-2108 | Visit: www.supumps.com.cn

China Office

Supumps Environmental Technology (Shanghai) Co.,Ltd.
Add: Room 1506, No. 36 Guobin Road, Yangpu District, Shanghai, China
Tel: 86-21-54737855
Zip: 201200

China Factory And China R&D Center

Supumps Environmental Technology (Changzhou) Co.,Ltd.
Add: NO.399, Jingde West Road, Wujin District, Changzhou, Jiangsu
Tel: 86-519-85258081
Zip: 213166

www.supumps.com.cn P/N:TX151001 5th Edition, April 2026

Supumps® 舒朋士®

Stock Code: 873161

First Flush Stormwater Storage & Regulation Project Mechanical & Electrical Engineering Professional Contracting



Introduction

Supumps,as the chief editor and participating unit for multiple national, industrial and association standards including the Technical Specification for Interception Facilities in Combined Sewerage Systems, Technical Specification for Application of Integrated Intelligent Interception Wells and Integrated Equipment for Drainage Pumping Stations, has developed a one-stop turnkey overall solution for stormwater storage and regulation governance based on years of practical experience in comprehensive water environment management. Strictly complying with industry standard requirements, the solution addresses key industry pain points of traditional interception facilities, including first flush stormwater pollution, combined sewer overflow (CSO) pollution, limited receiving capacity of municipal wastewater treatment plants, and secondary pollution caused by scouring of sediments in sewer networks. Adopting a modular and flexible layout, the solution supports multiple configuration modes (receiving tanks, bypass tanks and combined tanks) tailored to on-site working conditions, and is applicable to drainage system renovation scenarios in urban areas, campuses and districts. Leveraging its mature technical system and proven track record of benchmark project deliveries, the company has supported key projects such as Fudan University and Minxing North Drainage System, providing reliable support for improving the quality and efficiency of urban water environments through its professional integrated service capabilities.

End-to-end turnkey service guarantee

EPC+O model

We provide professional subcontracting services under the "EPC+O" model for stormwater storage & regulation tank projects, covering the entire project lifecycle.



- Engineering: Full-process technical support and modular solution design tailored to on-site working conditions.
- Procurement: Supply of complete equipment packages, featuring professional and reliable core equipment.
- Construction: Standardized MEP installation management and full-process quality assurance for key processes.
- O&M Services: Comprehensive after-sales support system to ensure long-term stable operation of facilities.

Principal/Participant in Standard Development



Enterprise qualification



Application scenario

■ Reduction of Stormwater Peak Flow



■ Runoff Pollution Control



■ Stormwater Resource Utilization

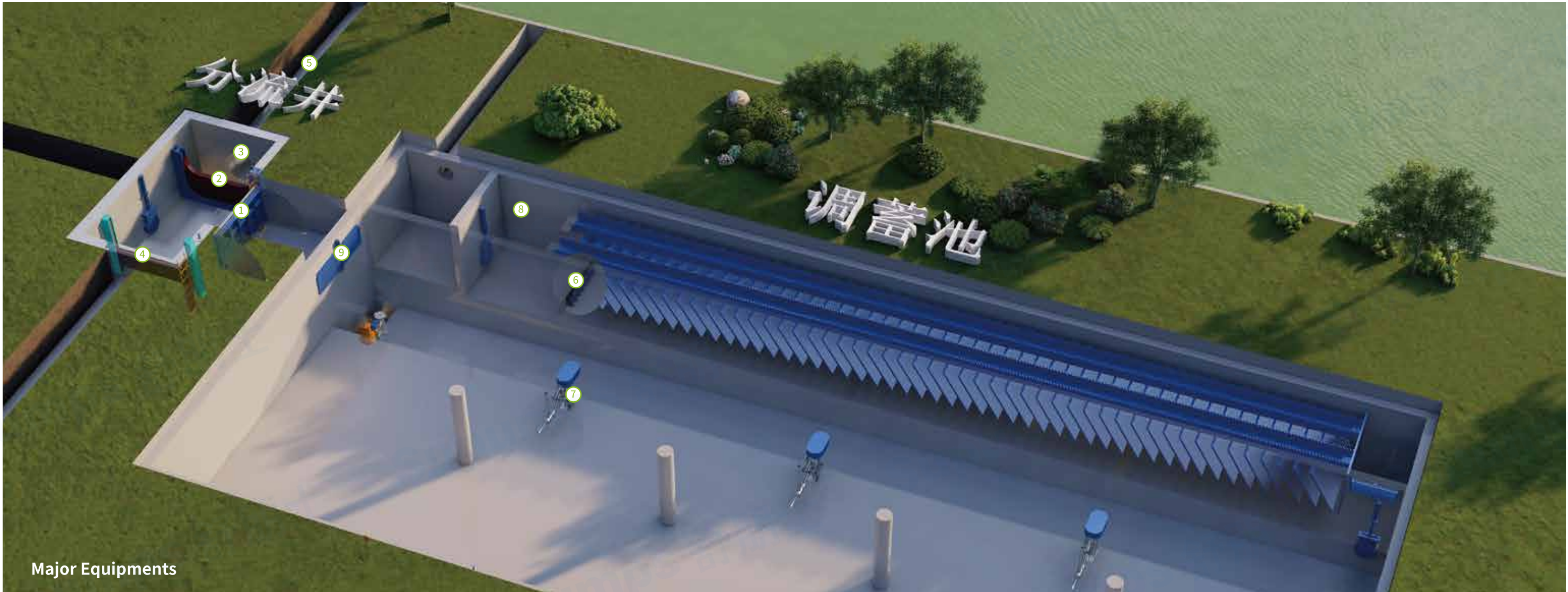


Design Selection Principles

- For runoff pollution control scenarios where the facility collects and stores high-impact, high-pollution-concentration first flush stormwater, with no subsequent inflow entering the storage tank, a Receiving Tank is recommended.
- For stormwater storage tanks intended for comprehensive stormwater utilization, a Receiving Tank is recommended.
- For runoff pollution control scenarios with no significant shock load in inflow rate or pollutant concentration, where subsequent stormwater requires sedimentation and purification in the storage tank before overflowing to the receiving water body after the tank is full, a Pass-through Tank is recommended.
- For scenarios with high inflow shock loads and prolonged pollution periods, a Combined Tank is recommended.

Run Mode

- Inflow Mode
During inflow, the blower and deodorization system (when applicable) shall be activated. The start/end time of inflow, storage tank water level, and flow rate shall be recorded. For pump-lifted inflow, additional records shall include the number of operating pumps, current, and operation duration.
- Emptying Mode
The elevation relationship between the storage tank and downstream drainage pipelines/receiving water bodies shall be considered. For the gravity-pump combined emptying mode, operations shall be conducted during periods when downstream pipelines have surplus conveyance capacity. When the tank is emptied to the minimum water level, the ventilation fan and deodorization system (when applicable) shall be activated. Records shall include the number of operating emptying pumps, current, operation duration, and water levels before/after emptying.
- Desilting & Flushing Mode
Desilting and flushing shall preferably be performed on rain-free days after the tank is emptied. Prompt desilting and flushing shall be conducted after each use, with proper records kept. Before desilting and flushing of tanks that have been unused for a long time or not completely emptied, monitoring of toxic, harmful, and explosive gases shall be carried out.



Major Equipments

Diversion Chamber Gate Equipment



Diversion Chamber Debris Screening Equipment



Pipeline Flushing Equipment



Storage Tank Flushing Equipment



Storage Tank Debris Screening Equipment



Odor Control Equipment



Stormwater Storage & Treatment Solution

Addressing challenges such as urban flooding, non-point source pollution, and water scarcity, we deliver efficient and reliable integrated stormwater detention, retention, treatment and disposal solutions to support Sponge City construction and improve water environment quality.

Tilting Gate



With the continuous improvement of urban water supply and drainage systems, tilting gates have found wide-ranging applications, including rainwater and sewage diversion, overflow control, interception facilities, stormwater storage tanks, regulation pipelines, water conservancy and hydropower stations, and drainage channels.

Supumps Tilting Gate
Patent No.: 202221317216.7

Product Description

The tilting gate is a core device for regulating storage water levels and preventing backwater and flooding. In practical operation, the storage water level and drainage flow rate are adjusted in real time based on water level and flow data monitored by the control system.

Product Features

- Simple structure, stable performance, easy maintenance, and long service life;
- Can stop at any position within the rotation range to control drainage flow and adjust water levels;
- Emergency operation available in the event of a power outage;
- Three-sided (four-sided) water stop design with excellent sealing performance;
- Fully automatic control system, no on-site personnel required;
- Remote control and real-time monitoring of valve status;
- Sensors separated from the mechanical structure, allowing maintenance/replacement without disrupting equipment operation;
- Low foundation height requirement, with minimal space occupation;
- Prefabricated delivery for fast on-site installation.

Working Principle

Based on real-time water level feedback from liquid level monitoring signals, the control system realizes the opening and closing of the weir plate via hydraulic control. Using water level and valve opening signals, the system adjusts the weir plate's retention height to control drainage flow, regulate upstream water levels, and prevent river water backflow.

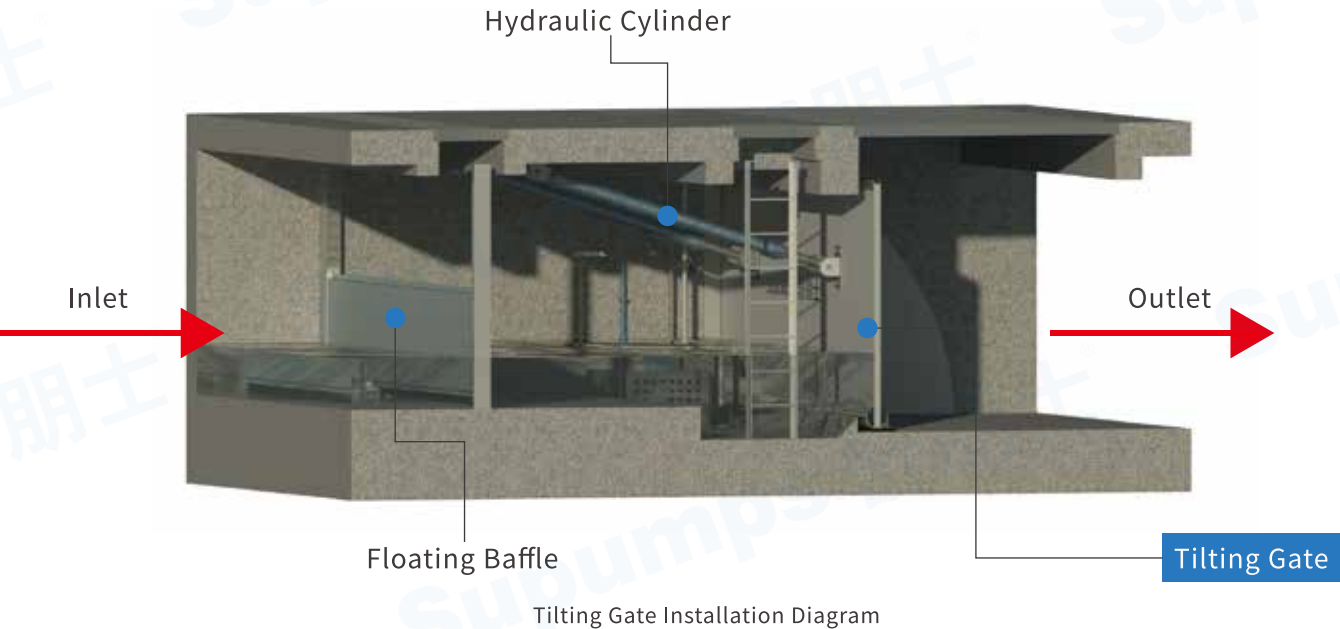
Technical Parameter

Model	Length (m)	Height (m)	Power (kW)	Power System	Installation Method
SPS-EHFW-L×H	1.5-5	0.5-5	4-15	Electro-Hydraulic Actuated	Embedded Parts Connection
Optional additional configurations: liquid level monitoring, rainfall monitoring, water quality monitoring, video surveillance, and cloud platform integration.					
Note: For other sizes and requirements, please consult Supumps engineers.					
Model Description: SPS-EHFW-L×H. SPS: Supumps; EHFW: Electro-Hydraulically Controlled Flap-Weir; L×H: Tilting Gate Length × Height.					

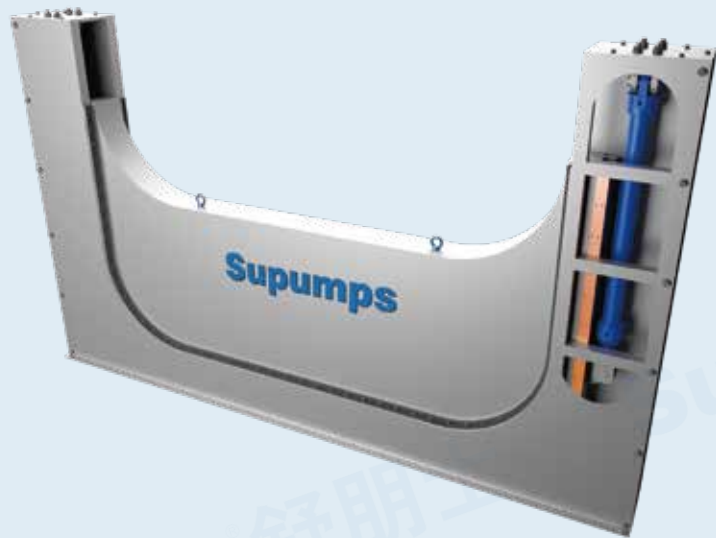
Equipment Components

Mechanical Components	Liquid Level Monitoring	Intelligent Control System	Cloud Platform	Power System

Installation Diagram



Downward-Opening Weir



With the continuous improvement of urban water supply and drainage systems, the downward-opening weir is widely used in combined sewer interception, dry-weather mixed sewage interception, wet-season first flush stormwater interception, and stormwater storage applications.

Supumps Downward-Opening Weir
Patent No.: 202221579104.9

Working Principle

Driven by a hydraulic cylinder and adopting a downward-opening design, the weir is equipped with an automatic control system to enable unattended operation. The gate leaf can automatically rise, fall, and stop at any position based on real-time water level signals.

Application Scenario

- Stormwater Storage Tanks
- Storage Pipelines
- Box Culverts
- Embankment Protection

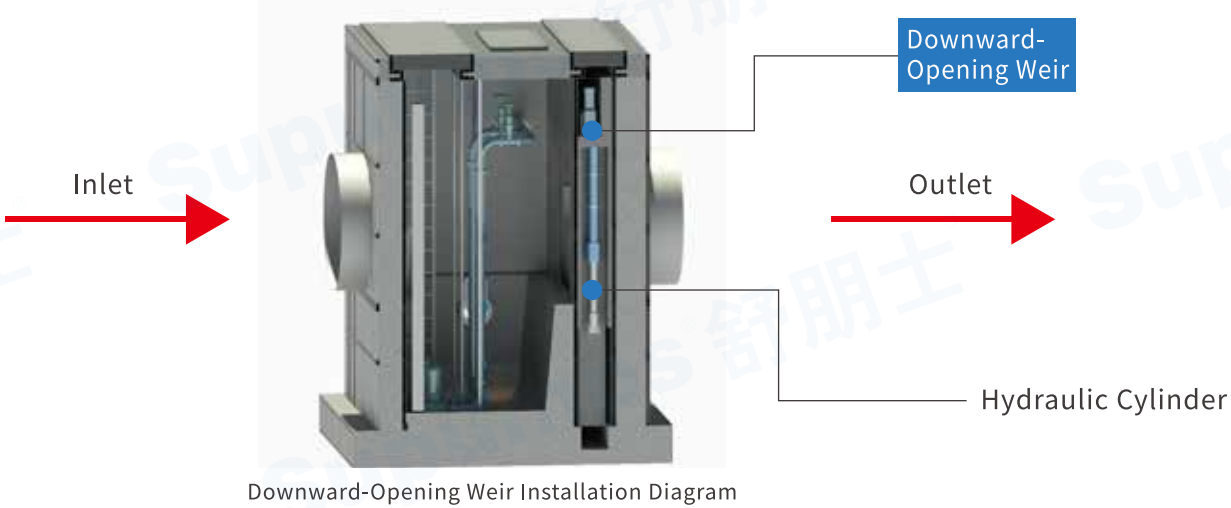
Product Features

- Compact structure with no upper space occupation, ensuring no impact on ground landscape;
- Stops at any height with real-time display of gate opening;
- Bidirectional water-stop sealing with easily replaceable sealing strips;
- Specially manufactured copper alloy guide rails for smooth, stable operation and long service life;
- Modular assembly structure to minimize welding deformation and residual stress;
- Sensors separated from the mechanical structure, allowing maintenance and replacement without disrupting equipment operation;
- Supports remote monitoring and unattended operation.

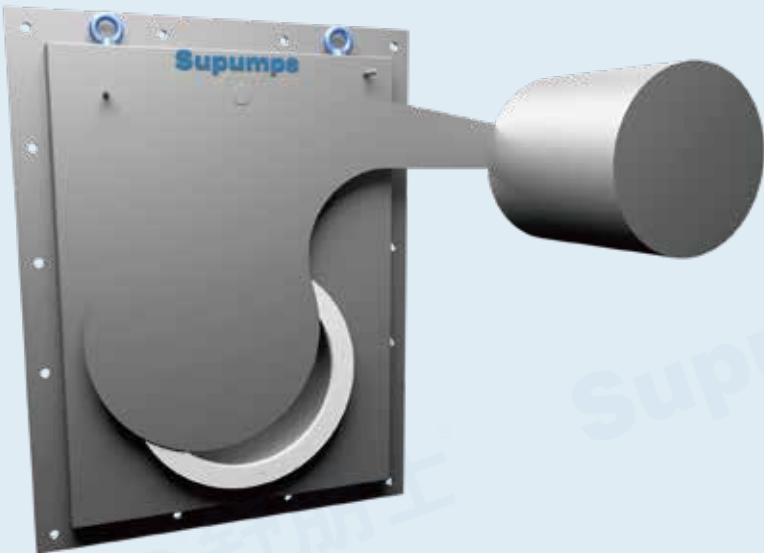
Technical Parameter

Model	Cross-section Flow-through Size B×H	Control Method	Main Material
SPS-LW-1000×1000	1000×1000	Electro-Hydraulic Actuated	SUS304
SPS-LW-1500×1000	1500×1000	Electro-Hydraulic Actuated	SUS304
SPS-LW-1500×1500	1500×1500	Electro-Hydraulic Actuated	SUS304
SPS-LW-2000×1000	2000×1000	Electro-Hydraulic Actuated	SUS304
SPS-LW-2000×2000	2000×2000	Electro-Hydraulic Actuated	SUS304
SPS-LW-2500×2000	2500×2000	Electro-Hydraulic Actuated	SUS304
SPS-LW-2500×2500	2500×2500	Electro-Hydraulic Actuated	SUS304
SPS-LW-3000×1000	3000×1000	Electro-Hydraulic Actuated	SUS304
SPS-LW-3000×2000	3000×2000	Electro-Hydraulic Actuated	SUS304
SPS-LW-3000×2500	3000×2500	Electro-Hydraulic Actuated	SUS304
SPS-LW-3000×3000	3000×3000	Electro-Hydraulic Actuated	SUS304
SPS-LW-3500×2500	3500×2500	Electro-Hydraulic Actuated	SUS304
SPS-LW-3500×3000	3500×3000	Electro-Hydraulic Actuated	SUS304
SPS-LW-4000×2500	4000×2500	Electro-Hydraulic Actuated	SUS304
SPS-LW-4000×3000	4000×3000	Electro-Hydraulic Actuated	SUS304
SPS-LW-4500×2500	4500×2500	Electro-Hydraulic Actuated	SUS304
SPS-LW-4500×3500	4500×3500	Electro-Hydraulic Actuated	SUS304
SPS-LW-5000×3000	5000×3000	Electro-Hydraulic Actuated	SUS304
SPS-LW-5000×4000	5000×4000	Electro-Hydraulic Actuated	SUS304
Custom sizes available upon request.			
The maximum design head of the weir is equal to the height of its flow cross-section.			
Model Description: SPS-LW-B×H. SPS: Supumps; LW: Lifting Weir (Downward-Opening Weir); B×H: Flow Cross-section Width × Height (mm).			

Installation Diagram



Float-Operated Interception Valve



Widely used in residential communities, roads, river outfalls, and other scenarios including combined sewer interception, first flush stormwater interception, connections between community drainage pipes and municipal road pipelines, road intersection pipeline connections, and river outfalls. It performs interception for combined sewers and first flush stormwater in separate flow conditions, prevents sewage backflow into the stormwater system when sewage levels are high, and limits flow under high sewer load to avoid large volumes of stormwater overwhelming the sewage system.

Supumps Float-Operated Interception Valve
Patent No.: 202221513790.X

Product Function

- **Dry Weather Operation:** The inlet carries only low-flow sewage, with low water levels in the chamber. The float, under gravity, keeps the flap plate open, allowing all sewage to flow through the device into the sewer network;
- **Early Rainfall Operation:** As inflow increases and chamber water levels rise, the float, driven by buoyancy, gradually closes the interception outlet. First flush stormwater continues to flow through the device into the sewer network;
- **Mid-to-Late Rainfall Operation:** With continued rainfall, chamber water levels rise further, causing the float to fully close the flap plate. This prevents large volumes of stormwater from entering the sewer network, with diluted water discharged through the chamber outlet;
- **Post-Rainfall Operation:** As water levels in the combined sewer drop, the float gradually opens the flap plate, returning the device to its initial state.

Product Features

- Stainless steel construction for long-term durability;
- Stable and reliable performance with quick, straightforward installation;
- Manufactured from high-grade corrosion-resistant stainless steel, suitable for sewage, stormwater, and combined sewage applications;
- Fully automatic operation with zero ongoing operational costs.

Technical Parameter

Nominal Diameter	Working Medium	Connection Method	Material
DN150-1000	Water	Bolted Connection	Stainless Steel 304
Custom sizes available to meet on-site project requirements.			

Product Specification

Model	SPS-SAW-150	SPS-SAW-200	SPS-SAW-300	SPS-SAW-400
Interception Outlet (DN)	150	200	300	400
Model	SPS-SAW-500	SPS-SAW-600	SPS-SAW-700	SPS-SAW-800
Interception Outlet (DN)	500	600	700	800
Model Description: SPS-SAW-DN. SPS: Supumps; SAW: Self-Acting Weir (Float-Operated Interception Valve); DN: Nominal Diameter of the interception outlet.				

Floating Baffle

Supumps Floating Baffle Patent
No.: 202221628516.7



Product Description

The Floating Baffle is a buoyancy-driven device that moves up and down to retain floating debris on the water surface. It is installed in interception chambers, stormwater storage tanks, and diversion chambers within drainage systems to prevent upstream floatables from entering natural water bodies.

Product Features

- Dedicated slide rails for smooth up-and-down floating movement;
- Special debris screens on both side posts to prevent trash from interfering with floating movement;
- Prefabricated delivery for simple and fast on-site installation;
- Operates solely on water buoyancy, requiring no additional power source.

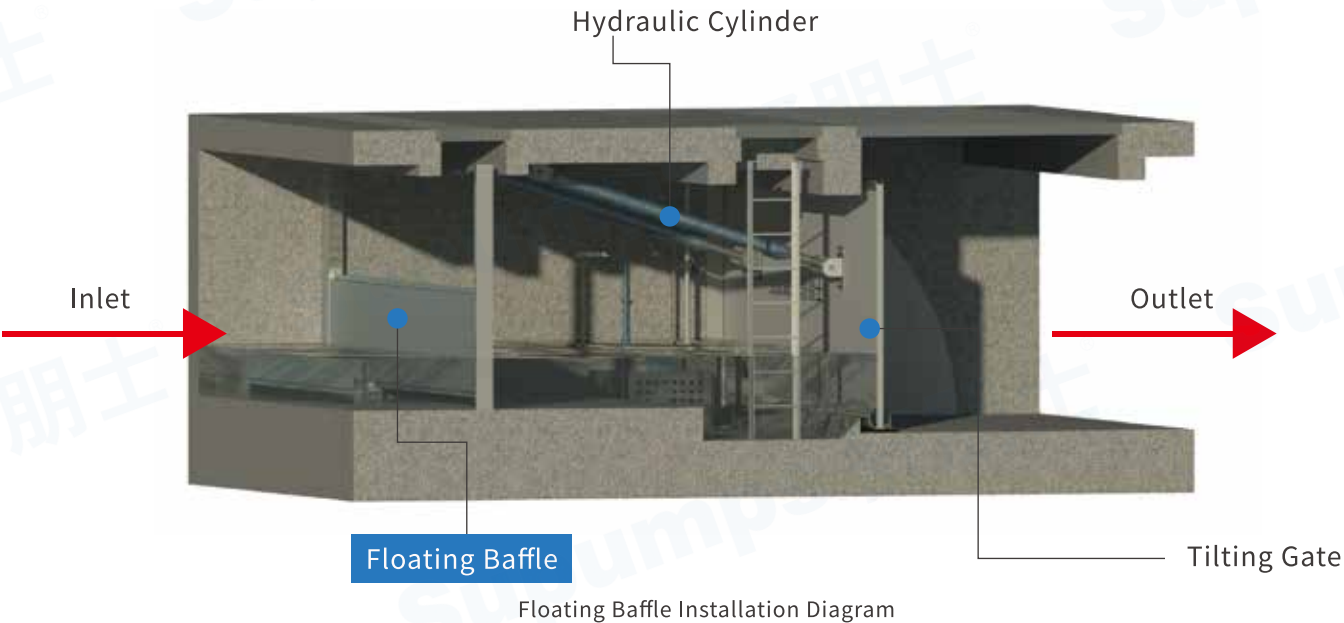
Technical Parameter

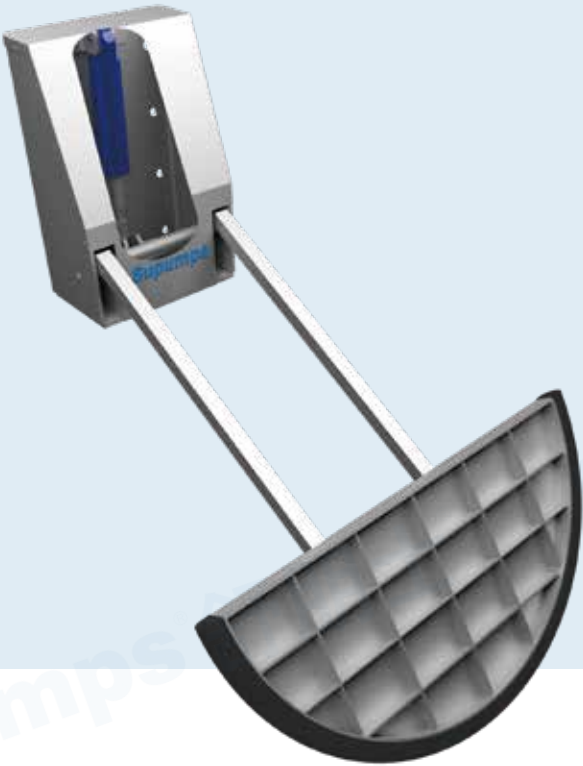
Model	Length (m)	Height (m)	Power System	Installation Method	Remarks
SPS-FB-L×H	≤3	≤2.5	Water Buoyancy	Bolted Connection	SUS304
Custom sizes available based on on-site project requirements.					
Model Description: SPS-FB-L×H. SPS: Supumps; FB: Floating Baffle; L×H: Length × Height.					
Optional add-on for custom floating baffles: automatic debris collection device (Patent No.: 20221721949.7), which automatically collects floating debris on the water surface for periodic manual disposal. This version requires additional sensors and pneumatic power units.					

Equipment Components

Mechanical Components	Liquid Level Monitoring	Intelligent Control System	Cloud Platform

Installation Diagram





Cascade Flush Sluice

The cascade flush sluice is a device designed for periodic pipeline flushing. Installed at predetermined flow sections in pipelines, it automatically retains and accumulates water flow. When the water level reaches the set threshold, the sluice opens, releasing an impulse flow to reduce sediment accumulation. After the water level drops to a predetermined position, the sluice closes to resume water storage.

Product Features

- Small footprint with no impact on normal pipeline operation;
- Not limited by water quality or flow rate;
- Effectively reduces sediment accumulation in pipelines;
- No additional water storage components required;
- Remote control enabled for flexible flow regulation in the drainage network;
- Low maintenance requirements.

Technical Parameter

Model	Diameter(mm)	Power System (Hydraulic/Electric)	Material (SUS304)
SPS-CFS-Φ600	600	Electro-Hydraulic Actuated	SUS304
SPS-CFS-Φ800	800	Electro-Hydraulic Actuated	SUS304
SPS-CFS-Φ1000	1000	Electro-Hydraulic Actuated	SUS304
SPS-CFS-Φ1200	1200	Electro-Hydraulic Actuated	SUS304
SPS-CFS-Φ1500	1500	Electro-Hydraulic Actuated	SUS304
Control cabinet dimensions / installation space required (H×W×D): 800×800×300mm			
Model Description: SPS-CFS-Φ□. SPS: Supumps; CFS: Cascade Flush Sluice; □: Sluice gate diameter (mm).			

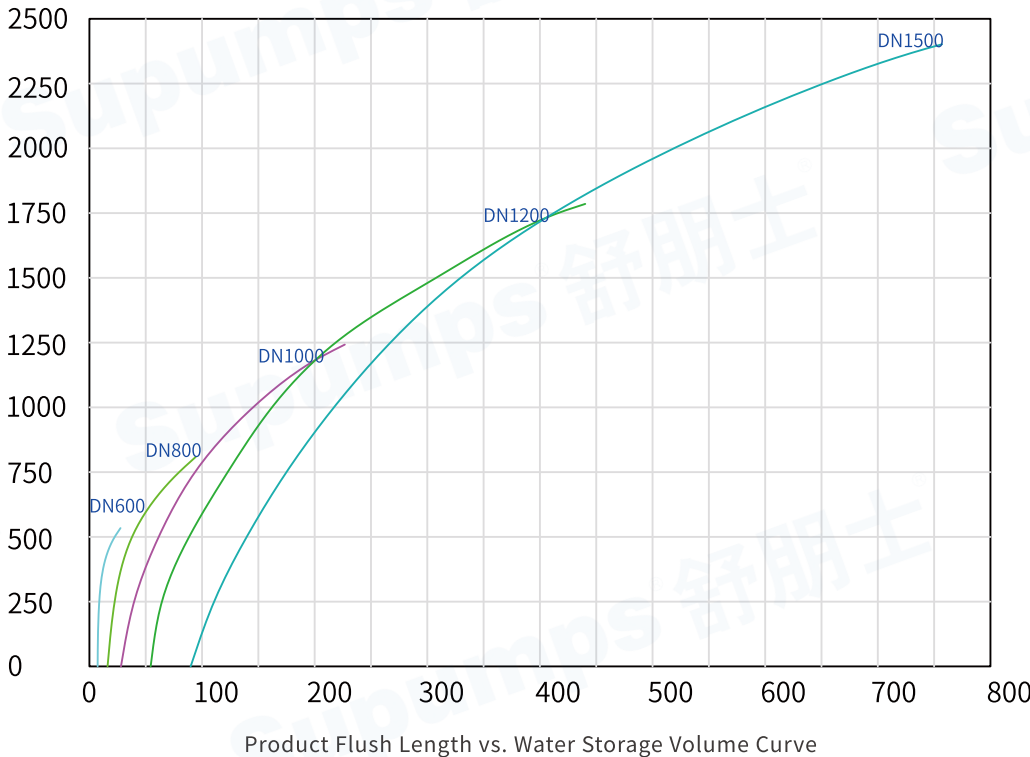
Product Features

Main components of the cascade flush sluice include:

- Sluice Gate
- Base Frame
- Sealing Rubber Strips
- Electro-Hydraulic Actuator
- Control System, etc.

Working Principle

- Retention & StorageWhen closed, the sluice retains and accumulates sewage upstream, with real-time water level monitoring via the level detection system.
- FlushingWhen the water level reaches the set threshold, the sluice automatically opens to discharge water and flush the downstream pipeline.
- Normal Drainage ModeThe sluice can be held in the fully open position without interfering with the pipeline's normal drainage function.



Flush Gate



The Flush Gate is designed for cleaning applications in stormwater storage tanks, high-efficiency treatment tanks, utility tunnels, and box culverts. During operation, it receives upstream water level signals to unlock the anti-lock mechanism and rotate open. In normal conditions, the gate remains closed while accumulating flushing water. When the tank to be cleaned is emptied, the gate opens to perform high-energy flushing of the tank floor.

Supumps Flush Gate
Design Patent No.: 202130438000.0
Patent No.: 202121571419.4

Working Principle

The gate-type flushing system combines hydraulic principles with mechanical structure. When the water level in the tank drops to the set elevation, the control system triggers the gate to release stored water instantly. High-kinetic energy water jets from the gate’s base create powerful, sweeping flow waves that lift sediments from the tank floor, carrying them to the collection channel at the end of the storage tank for discharge via submersible sewage pumps. The hydraulically driven system features simple controls, long flushing distance per wave, flexible adjustment with both manual and electric control modes, and manual flushing capability even under partial water conditions.

Product Features

- Hydraulic system control with water level and position signal feedback, enabling cloud integration for intelligent operation;
- High locking force from hydraulic drive eliminates safety risks of underwater electrical components for enhanced safety;
- Rear locking design ensures stable, secure closure. Unlike shear-stressed components in other products, our compression-based design delivers higher reliability;
- Spherical hydraulic expansion joints prevent damage from horizontal axial stress during operation, improving product reliability;
- Comprehensive mechanical verification of all components via finite element analysis for precise design and reliable structure;
- Manufactured from stainless steel for a robust, corrosion-resistant structure with extended service life;
- No noise pollution, no external water source required for eco-friendly, energy-efficient operation;
- Equipped with stainless steel hydraulic cylinders, with piston rods manufactured to military-grade standards for long service life and low maintenance costs.

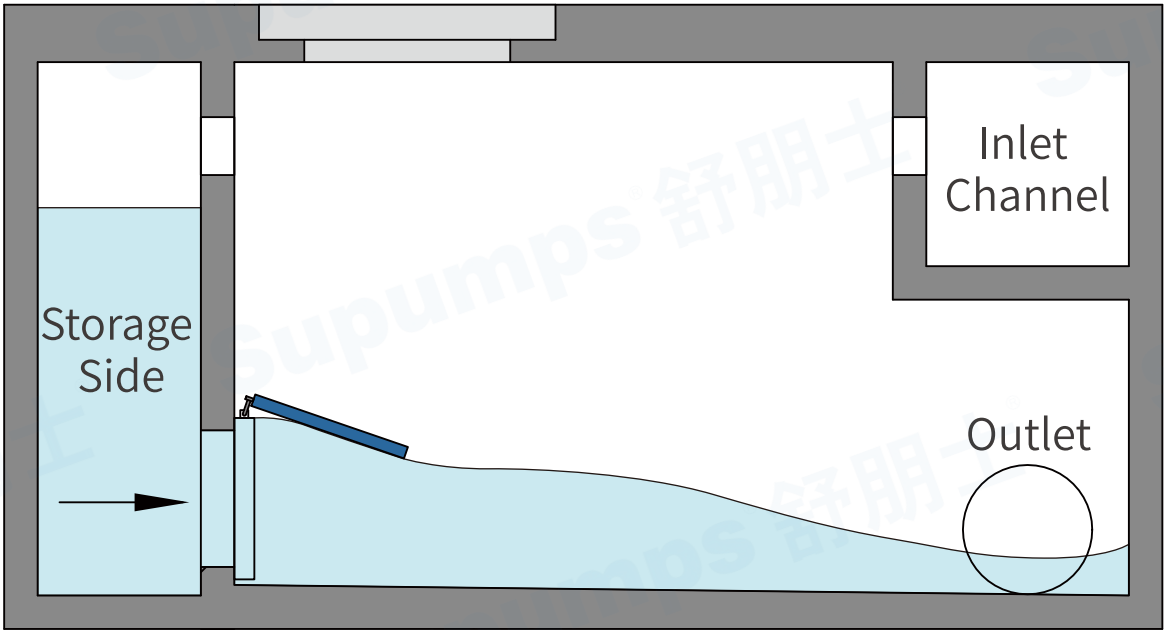
Technical Parameter

Model	Length (m)	Height (m)	Standard Size (m*m)	Power (kW)	Power System	Installation Method
SPS-FG-L×H	1.0~5.0	0.4~0.8	2.8*0.4	2~7.5	Electro-Hydraulic Actuated	Embedded Anchor Bolts or Expansion Bolts
Optional additional configurations: liquid level monitoring, video surveillance, and cloud platform integration.						
Note: For other sizes and requirements, please consult Supumps engineers.						
Model Description: SPS-FG-L×H. SPS: Supumps; FG: Flush Gate; L×H: Length × Height.						

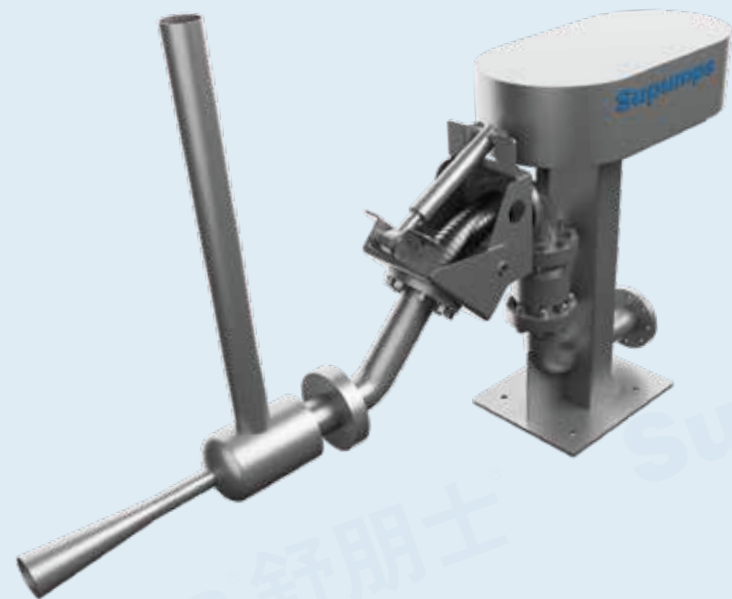
Equipment Components

Mechanical Components	Liquid Level Monitoring	Intelligent Control System	Cloud Platform	Power System

Installation Diagram



Flush Gate Installation Diagram



Pivoting Automatic Jet Cleaner

The Pivoting Automatic Jet Cleaner is an energy-efficient cleaning device. The water-air two-phase flow it generates features high velocity, high energy, strong impact force, and long range, making it suitable for stormwater storage tanks, storage pipelines, and other facilities of various sizes and shapes.

Supumps Pivoting Automatic Jet Cleaner
Patent No.: 202221546958.7

Product Description

- The cleaner consists mainly of a pump, eductor, fixed support, rotating mechanism, liquid level sensor, and control system.
- Equipped with Supumps’ new-generation imported submersible sewage pump, its unique hydraulic design ensures efficient and energy-saving operation while maintaining cleaning performance, with a maximum submersion depth of 20 m. The pump power determines the jetting distance.
- Equipped with a rotating mechanism, the cleaner provides a wider fan-shaped cleaning coverage area.

Product Function

- Storage Phase Operation: The rotating cleaner starts periodically, injecting a water-air mixture to promote water circulation. This enhances oxygen dissolution, degrades part of the COD in the tank, and effectively reduces odors.
- Pre-Drainage Operation: The cleaner starts and operates continuously to stir up bottom sediments, keeping activated sludge suspended to prevent deposition. Sludge is discharged with the flow, avoiding silt buildup in the tank.
- Final Drainage Phase Operation: The rotating cleaner performs full-range bottom flushing according to the set program as the tank nears empty.

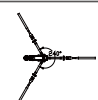
Working Principle

The cleaner’s hydraulic power enables both mixing and cleaning functions in the storage tank. At high water levels, high-velocity jets from the eductor vigorously mix the liquid to resuspend sediments. At low water levels, it shifts to a flushing mode, using high-speed jets to thoroughly remove sediments from the tank bottom and walls. As a flushing system, it uses the residual water in the tank as flushing water, enabling continuous automatic cleaning operations.

Working Process

- High Water Level Operation (Mixing Phase): When the water level drops to 2.5 m above the tank floor (defined as the top edge of the sump), the pneumatic cleaner jets and mixes the liquid to resuspend sediments, which are then discharged with the water by the emptying pump;
- Low Water Level Operation (Long-Range Flushing Phase): When the water level drops to 0.6–0.3 m, the cleaner’s jetting power increases, allowing high-pressure water to reach corners and dead zones at the far end of the tank;
- Ultra-Low Water Level Operation (Bottom Flushing Phase): When the water level drops below 0.3 m, the cleaner operates at low flow with a gradually reduced jet range to flush the tank floor. For optimal results, the emptying pump stops for 3 minutes when the level reaches 0 m to extend flushing time. The cleaner stops when the level drops to -0.15 m.

Technical Parameter

Model	Jetting Distance	Pump Power (kW)	Flushing Angle
SPS-PJCA-L×P	18~50	5.5~22	270° ±10° 
The jetting distance and cleaning performance depend on pump power, tank size, and tank shape. Please consult Supumps engineers for detailed design parameters.			
Model Description: SPS-PJCA-L×P. SPS: Supumps; PJCA: Pivoting Automatic Jet Cleaner; L×P: Jetting Distance × Power.			

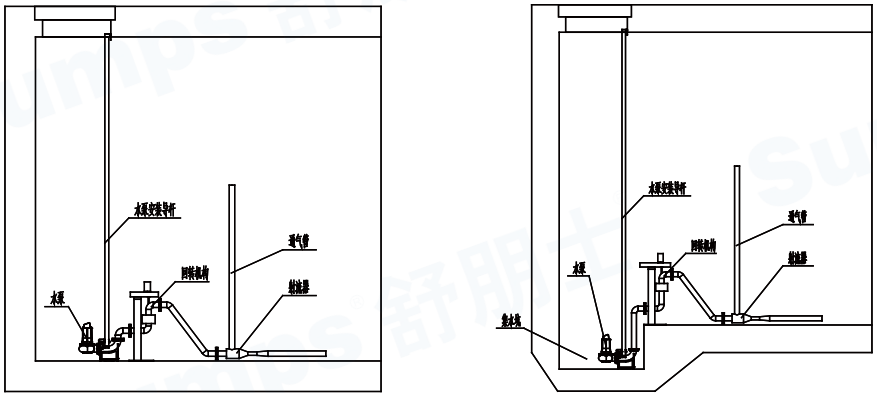
Equipment Components

Mechanical Components	Liquid Level Monitoring	Intelligent Control System	Cloud Platform	Power System
				

Installation Diagram

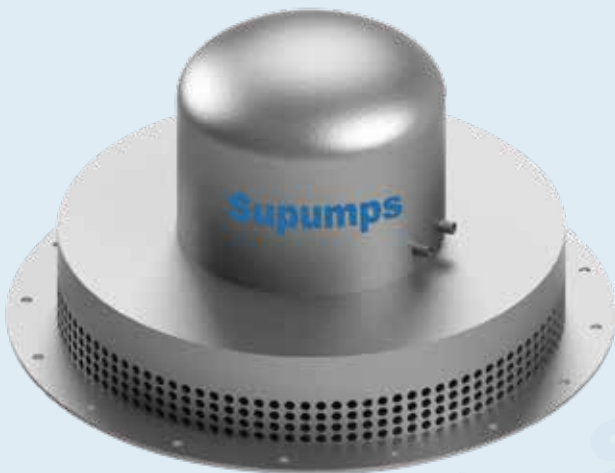
The pump of the cleaner adopts a coupling installation, eliminating the need for personnel to enter the tank for maintenance.

The pump can be installed in the sump or directly on the existing tank floor, offering flexible installation options.



Pivoting Automatic Jet Cleaner Installation Diagram

Vacuum Flush Gate



The Supumps Vacuum Flush Gate is designed for bottom cleaning of stormwater storage tanks, pipe culverts, and similar facilities. It uses stored water in the tank as the flushing source for targeted cleaning. Mounted above ground, the device requires no confined-space entry for maintenance, ensuring safe and simple operation. It generates high-velocity flushing waves for superior cleaning performance.

Product Description

After rainfall, stagnant water in the stormwater storage tank settles during the retention period. As high flow velocities are typically not achieved during tank emptying, sediments remain at the bottom, causing odor pollution, harmful bacterial contaminants, and corrosive damage to concrete structures. During tank filling, both the tank and the water storage chamber fill simultaneously. When the water level reaches the set elevation, the vacuum system activates to evacuate air from the chamber and maintain negative pressure. After the tank is emptied, the diaphragm valve breaks the vacuum, allowing air to rush into the chamber. The stored water free falls, generating powerful flushing waves to clean the tank floor. The flushed water then returns to the interception chamber for discharge.

Working Process

When the stormwater storage tank receives inflow, water level signals trigger the vacuum pump to start, creating a vacuum in the water storage chamber. The chamber fills to the set level, and the vacuum diaphragm valve closes, with a bottom water seal maintaining the level. After rainfall ends, the emptying pump activates. When the tank water level drops to the set elevation, the diaphragm valves at the top of the chamber open sequentially to break the vacuum, instantly releasing stored water and completing the tank floor cleaning process.

Technical Advantages

- No external water source required, with intelligent control;
- High flushing pressure for excellent cleaning performance;
- No confined-space maintenance required;
- Suitable for all types of tank structures.

Working Principle

The Vacuum Flush Gate evacuates air from the water storage chamber to create a vacuum. As atmospheric pressure in the tank is higher than in the chamber, the water level in the chamber rises to the set elevation. When cleaning is required, the diaphragm valve at the top of the chamber opens to break the vacuum, instantly releasing stored water. The high-kinetic-energy water forms powerful, sweeping jets that lift sediments from the tank floor, carrying them to the collection channel at the end of the tank for discharge by the emptying pump. Powered by vacuum pumps, the system requires no external water supply. A single vacuum pump can control multiple valves, resulting in low energy consumption and stable operation.

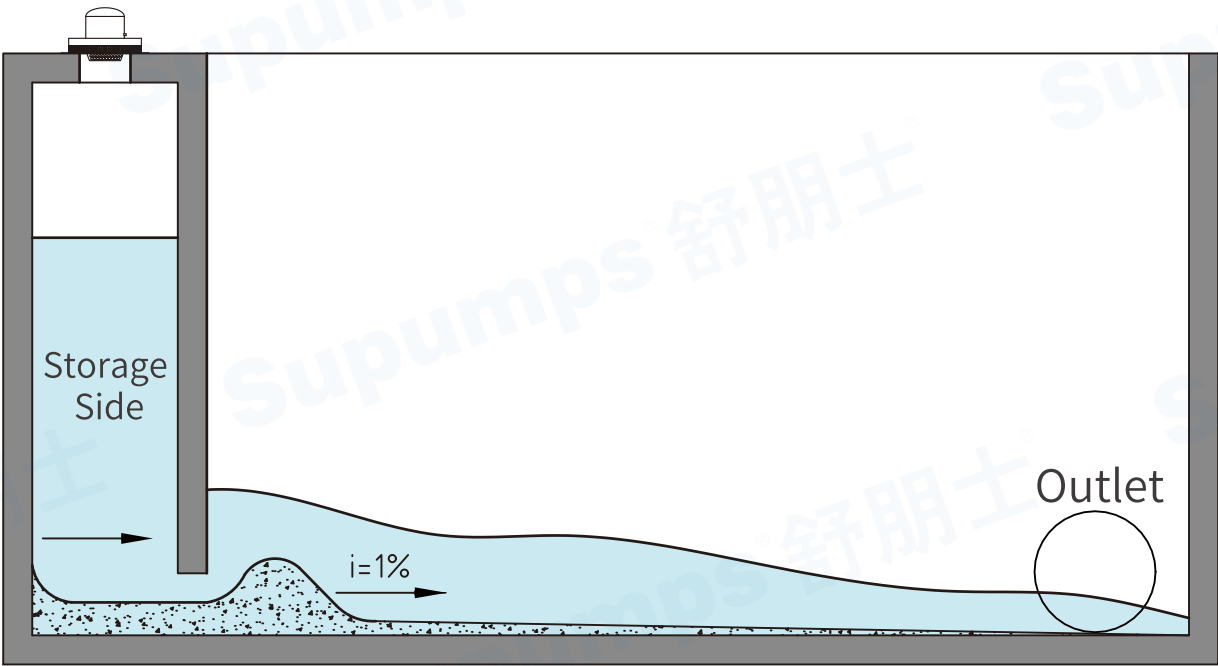
Technical Parameter

Model	Outer Dimensions	Opening Size	Conduit Width	Flushing Length	Power
SPS-VFG-1200	φ1200	φ1200	≤10	>100	≤3
Optional additional configurations: liquid level monitoring, video surveillance, and cloud platform integration.					
Note: For other sizes and requirements, please consult Supumps engineers.					
Model Description: SPS-VFG-1200. SPS: Supumps; VFG: Vacuum Flush Gate; 1200: Outer dimension.					

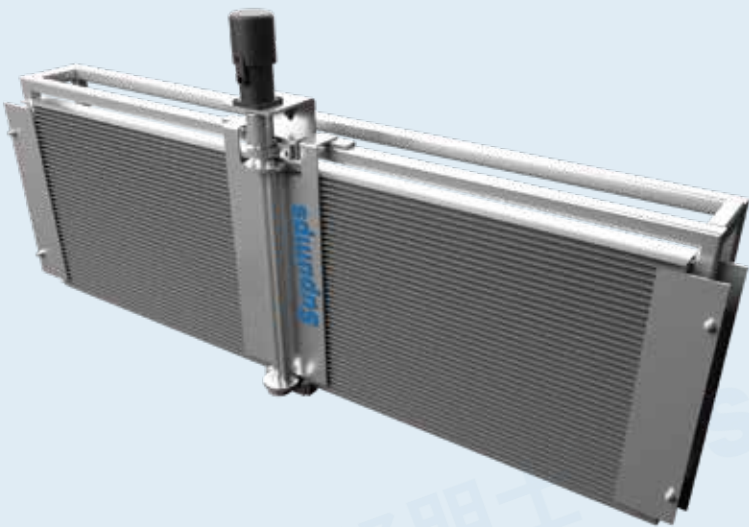
Equipment Components

Mechanical Components	Liquid Level Monitoring	Intelligent Control System	Cloud Platform	Power System

Installation Diagram



Installation Diagram



Self-Cleaning Flat Screen Bar

The Self-Cleaning Flat Screen Bar is installed at the inlet of stormwater storage tanks. Manufactured entirely of stainless steel and hydraulically driven, the system uses hydraulic control units to feed signals to the hydraulic motor as water passes through the screen, driving the screen's shearing motion to remove debris. It effectively reduces water pollution caused by fine particles entering the storage facility. Custom operating cycles can be tailored to site-specific conditions.

Supumps Flat Screen Bar
Patent No.: 202122055471.0

Product Features



Smarter Operation



Enhanced Safety



Higher Reliability

- Intelligent cleaning and anti-clogging control, with real-time equipment monitoring via a remote cloud platform;
- Standard 304 stainless steel construction for excellent corrosion resistance;
- Shear-type debris removal combined with backwashing pump flushing delivers higher cleaning efficiency than brush-type systems;
- Modular design for easy installation and maintenance.

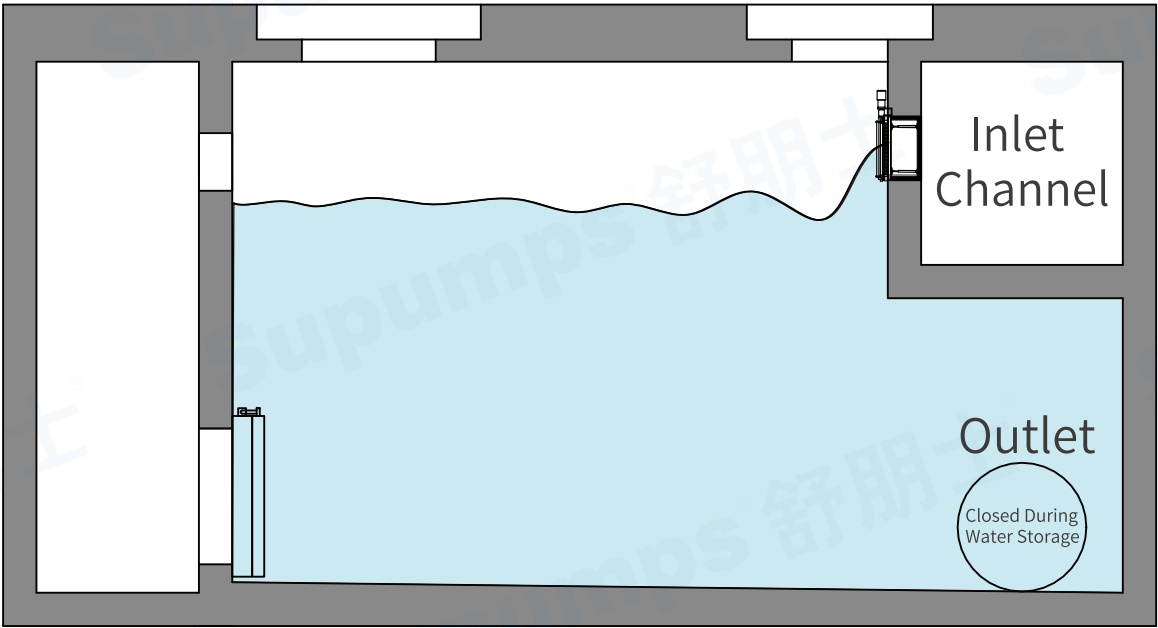
Technical Parameter

Model	Length (m)	Height (m)	Standard Size (m×m)	Power (kW)	Power System	Installation Method
SPS-HSFB-L×H	1.0~2.2	0.5~0.7	2.13*0.735	2~7	Electro-Hydraulic Actuated	Embedded Steel Plate Channel
Optional additional configurations: liquid level monitoring, video surveillance, and cloud platform integration.						
Note: For other sizes and requirements, please consult Supumps engineers.						
Model Description: SPS-HSFB-L×H. SPS: Supumps; HSFB: Hydro Screen Fine Bar (Self-Cleaning Flat Screen Bar); L×H: Length × Height.						

Equipment Components

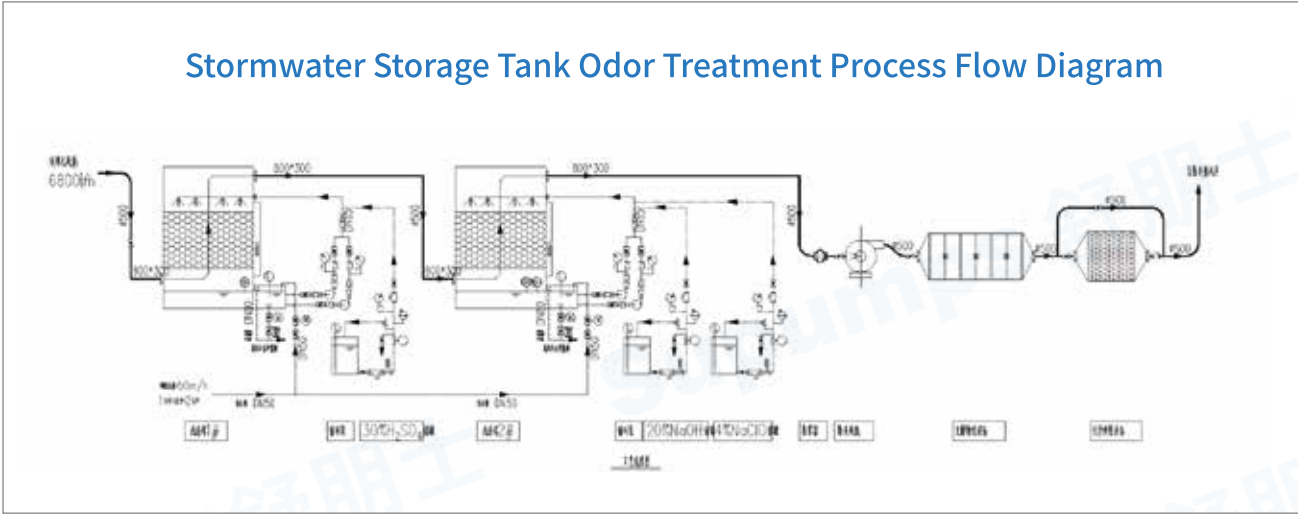
Mechanical Components	Liquid Level Monitoring	Intelligent Control System	Cloud Platform	Power System

Installation Diagram



Self-Cleaning Flat Screen Bar Installation Diagram

Deodorization Process & Related Equipment

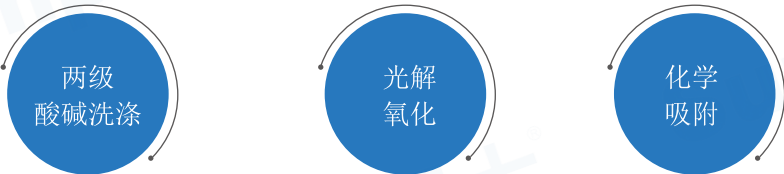


Case Site



Deodorization Process & Equipment

To address the industry pain points of odor generation from stormwater storage tanks and their impact on the surrounding environment, we have developed a multi-process combined deodorization system. Centered on a three-stage treatment process of "Two-Stage Acid-Base Scrubbing + Photolysis Oxidation + Chemical Adsorption", it achieves efficient odor treatment and stable compliance discharge.



- 1 Pre-Treatment Stage Two-Stage Scrubbing** Acid/alkaline scrubbers remove acid-base pollutants from the odor gas, paired with an automatic chemical dosing system to stably control treatment efficiency.
- 2 Advanced Treatment Stage Two-Stage Scrubbing** Photolysis oxidation decomposes organic pollutants, while chemical adsorption further removes residual odor, providing dual assurance for treatment efficiency.
- 3 Intelligent Operation Assurance** Equipped with automatic operation mode, the system adjusts operating frequency in real time based on online monitoring to prevent odor leakage and mitigate the risk of resident complaints.



Other Supporting Equipment

TRAP-DOOR



The flush-mounted trap-door is designed for building mezzanines, underground facility access passages, equipment maintenance hatches, and other scenarios, suitable for schools, commercial buildings, industrial zones, and other sites requiring high floor flatness. Featuring a hidden flush design, it integrates seamlessly with the floor when closed, balancing accessibility, aesthetic appeal, and excellent waterproof performance, compatible with concrete, tiles, stone, and other floor materials. Equipped with a servo electric cylinder drive system, it operates stably and quietly with high control precision. Full-range safety protection mechanisms, including pinch-proof sensors and anti-mislock functions, support remote and emergency opening. The stainless steel body is heavy-duty and durable, with a maximum C250 load class available. Full-process support is also provided.

STAINLESS STEEL FLAT GATE

The stainless steel flat gate is widely used at water intakes, interception chambers, stormwater storage tanks, and other sites, providing forward water stop and backflow prevention functions. It is compatible with square or circular flow-through structures and can be integrated with water level and rainfall monitoring systems. The fully enclosed design effectively isolates odors, enabling intelligent regulation and control. Constructed from SUS304/316 stainless steel, it offers excellent corrosion resistance for full-range use in water environments. Available in downward-opening and upward-opening configurations, it supports standard and custom sizes. Hydraulic/electric cylinder actuation enables manual, automatic, and remote control via a dedicated control cabinet. With self-adjusting zero-leakage sealing and a flat-bottom anti-clog structure, it operates stably under fully submerged conditions, featuring easy installation, low maintenance costs, and adaptability to diverse scenarios.



CRUSHING GRID



The crushing grid is an efficient wastewater pre-treatment device integrating solid waste crushing, screen filtration, and screenings treatment. Featuring a dual-shaft parallel cutting system, it can be integrated with prefabricated pumping stations, with a fully enclosed design for effective odor isolation. Widely used in municipal drainage, industrial wastewater treatment, and underground sewage systems, it provides reliable protection for downstream equipment. Available in drumless, single-drum, and dual-drum configurations, it covers flow rates from 50 m³/h to 13,000 m³/h for different treatment scales. Core components include high-strength alloy blades, SKF bearings, and silicon carbide seals, paired with an IP68 wet/dry explosion-proof motor. Constructed from stainless steel and ductile iron, it offers excellent impact and corrosion resistance. Supporting underground installation, its compact design saves space, efficiently crushes solid waste to ensure smooth drainage, and simplifies system maintenance costs.

ECCENTRIC HEMISPHERE VALVE

The eccentric hemisphere valve features an eccentric sealing structure. The ball automatically disengages from the seat during opening and closing, reducing sealing surface wear and enabling reliable zero-leakage sealing. Suitable for sewage, solid-laden media, industrial wastewater, pulp, coal ash, and other fluids, it is widely used in municipal drainage, stormwater storage tanks, industrial pipelines, and the steel/paper industries, providing both shut-off and high-precision regulation functions. With nominal pressures from 0.6 to 4.0 MPa and nominal diameters from DN40 to DN1200, it supports custom large-diameter designs. Manual, electric, and pneumatic actuation options are available for local and remote control. Its approximate equal-percentage flow characteristics offer a 100:1 turndown ratio for high regulation accuracy. Constructed with a WCB cast steel body, stainless steel/alloy steel stem and ball, and a hard alloy overlay-welded seat, it is corrosion and erosion resistant. Flange and wafer connections are supported, with vertical and horizontal installation suitable for various pipeline conditions.



VIDEO SURVEILLANCE



Video surveillance systems can be deployed at urban flood-prone points, drainage pumping stations, lift pumping stations, sluice gates, overflow outlets, and other locations. They capture real-time high-definition images, providing intuitive data support for drainage facility operation monitoring and flood emergency response, enabling remote unmanned operation and safety management of water utilities. Equipped with a 2560×1440 high-definition camera, they support 4G wireless transmission and dual-carrier automatic switching. Featuring white light/infrared dual fill light technology, they offer night vision up to 30 meters, paired with digital wide dynamic range, strong light suppression, and 3D noise reduction for clear, stable images. Two-way audio intercom, up to 512GB local storage, and an IP66 dustproof and waterproof rating ensure reliable all-weather operation in complex outdoor conditions.

UPPER COMPUTER CONFIGURATION SETUP

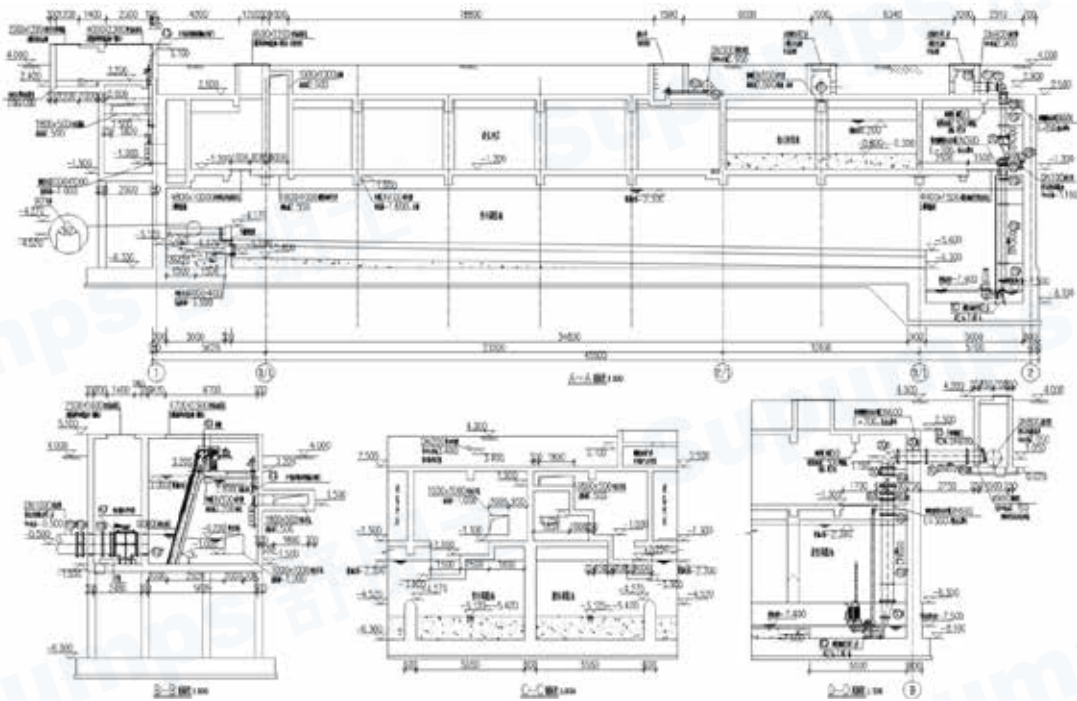


The upper computer configuration setup builds an integrated intelligent monitoring and control platform for municipal drainage networks, stormwater storage tanks, interception chambers, and rainwater-sewage diversion systems. Compatible with the full range of storage, interception, and pre-treatment equipment, it enables centralized monitoring, intelligent linkage, and unmanned operation of network conditions, addressing industry pain points such as seasonal overflow, first flush pollution, and distributed facility maintenance. It provides digital control support for Sponge City construction and black and odorous water body treatment.

The system supports coordinated control of interception chambers, flat gates, crushing grids, and other equipment, enabling automatic switching between sunny and rainy conditions. Real-time monitoring of liquid level, flow, water quality, and other data generates reports and analysis, supporting remote control, fault alarm push, and hierarchical permission management to significantly reduce maintenance costs. It optimizes operating conditions based on rainfall and liquid level data to improve interception efficiency, while supporting customized monitoring interfaces and control logic. With operation logs, data backup, and other safety compliance functions, it adapts to diverse water utility project management needs.

Stormwater Storage Solution Introduction

This stormwater storage tank project has a design capacity of 12,000 m³, adopting a gate-type flushing and receiving tank process. It enables runoff pollution control and stormwater peak flow reduction, addressing the industry pain point of insufficient capacity in municipal wastewater treatment plants to receive first flush stormwater. The tank uses first flush stormwater as the storage medium. After being intercepted by the upstream interception chamber, stormwater enters the tank via gravity flow. When the water level reaches the high limit, the interception gate valve closes, allowing relatively clean later-stage stormwater to discharge directly into the river channel. After rainfall ends, submersible sewage pumps in the tank transport polluted first flush stormwater to the sewer network, while the gate-type flushing system is activated to complete tank cleaning, ensuring stable operation of the facility.

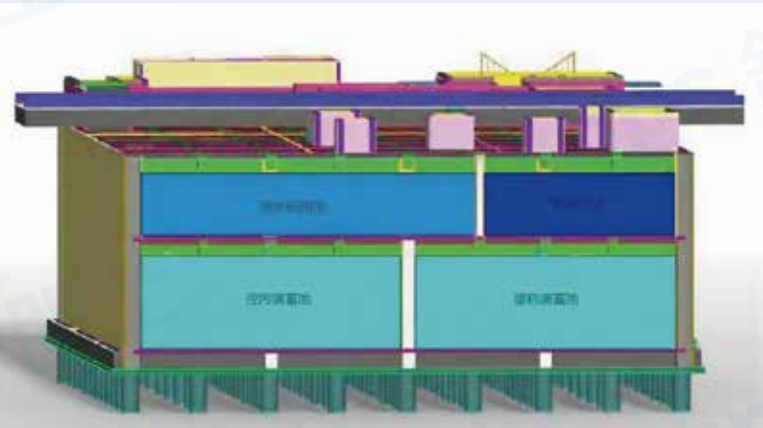


主要设备表

序号	名称	规格	单位	数量	备注
①	进水管	DN2200, N=4.0kN	套	1	上清式, 工作压力0.1MPa, 设计流量0.05Mpa, 管道连接处采用法兰, 防腐
②	电控箱	DN2200, N=5.5kW, P=110	套	1	立式, 全密封, 防腐等级IP54
③	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
④	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑤	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑥	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑦	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑧	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑨	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑩	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑪	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑫	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑬	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑭	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑮	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑯	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑰	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑱	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑲	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
⑳	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉑	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉒	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉓	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉔	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉕	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉖	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉗	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉘	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉙	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉚	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉛	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉜	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉝	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉞	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㉟	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊱	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊲	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊳	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊴	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊵	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊶	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊷	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊸	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊹	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊺	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊻	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊼	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊽	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊾	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW
㊿	立式轴流泵	流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW	套	2	潜水式, 流量: 80m³/h, 扬程: 5m, 功率: 0.55kW, α=80°, N=4.5kW

Adjust performance

Project Name	Fudan University (Shanghai) Drainage System First Flush Stormwater Storage Project	Project Scale	3400m ³	Contract Date:	2025.4.25
Project Name	Minxing North (Shanghai) Drainage System First Flush Stormwater Storage Project	Project Scale	12000m ³	Contract Date:	2025.9.12



Project overview

Project Name	Fudan University (Shanghai) Drainage System First Flush Stormwater Storage Project	Project Name	Minxing North (Shanghai) Drainage System First Flush Stormwater Storage Project
--------------	--	--------------	---

Constructed by Shanghai Communications Construction Co., Ltd., this project is located in the core area of Fudan University's Handan Campus, covering 1,125 m² with a total storage capacity of 3,400 m³, serving the 0.4 km² core campus area. The project innovatively adopts a three-tank phased operation mode, integrating first flush stormwater pollution control, drainage system peak shaving, and stormwater reuse for green spaces. Equipped with an efficient deodorization system, it completely solves the problem of campus waterlogging during rainy seasons, serving as a model demonstration project for Sponge City construction and precise regional water management in Yangpu District.

This project is the core pollution control and emission reduction project for the Minxing North area, serving a service area of 3.31 km². A new 12,000 m³ fully underground first flush stormwater storage tank is constructed, equipped with an efficient deodorization system and pipeline reconstruction works. It is a model demonstration project for regional water environment improvement.