FAGGIOLATI[®]



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FAGGIOLATI®

FPS Integrated Prefabricated Pumping Station

FAGGIOLATI's modern approach to continuously upgrading wastewater collection networks FAGGIOLATI's unique technological capabilities and innovative products keep us at the forefront of the market.

FAGGIOLATI always designs its products to be energy efficient while ensuring high reliability. This makes a significant contribution to reducing daily operating costs and saving on the whole life cycle costs of the complete system.

Low energy consumption equals low carbon All products developed by FAGGIOLATI are centered around one fundamental goal: to reduce energy consumption while increasing efficiency and reliability. Low energy consumption not only helps to cut operating costs for wastewater operators, but also reduces carbon emissions.

Improving equipment reliability

grit after heavy rain or storms.

A major trend in improving the functional reliability of pumping stations is to reduce energy consumption and minimize the risk of clogging to reduce the incidence of failures. Both of these place high demands on the pump's ability to handle debris. Keeping the pumps running smoothly and avoiding clogging is an important goal in FAGGIOLATI's product design.

Sizing is critical to efficiency

Energy is one of the most important factors in life-cycle costs, and one of the recognized criteria for pump selection is to find the optimum efficiency of the pump. The environment in which wastewater is pumped is particularly demanding and it is important to have a comprehensive solution in place to ensure that the pumping station does not require frequent on-site repairs in later years of operation. Failure to consider the maintenance and operation methods required when selecting equipment will only result in higher costs for the operator. Our design solutions provide a more accurate mix of equipment for the customer's application, resulting in greater energy cost savings.

Continuous Monitoring

Easy-to-use alarm management and telemetry systems specifically designed for wastewater collection networks assist our customers in the event of a malfunction, and our systems put them in control. In addition, we offer a worldwide management program for service and spare parts to support our customers when they need it.

Total System Solutions

Our solutions are designed for harsh wastewater environments, larger solids handling capacity to prevent clogging, performance-optimized pumping station control systems, protection of standby equipment, catchment pit cleaning, and management of energy costs

In addition, parts of the network may contain a number of smaller pumping stations scattered over a wider area. The day-to-day operation of these pumping stations will be faced with blockages, long term operational failures, increased energy costs, overflow risks, understaffing and constant pressure to reduce costs.

Our products have proven to be very successful in practice.

Optimization expertise

Effective operation of network pumping stations requires a strong connecting link between equipment selection, maintenance and operational strategy. With equipment that has not been carefully selected, additional costs may be added over the life cycle due to blockages and failures and subsequent maintenance on site. We support our customers with application knowledge from pumping station design to optimization of equipment operation.

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Pumping conditions are changing, and pumping stations must be able to handle sewage mixed with sanitary products, packaging materials and road grit, as well as adapt to dry seasons with salts and

Integrated Prefabricated Pumping Station



FAGGIOLATI FPS integrated prefabricated pumping stations, specializing in rainwater/wastewater collection and transfer. The pumping stations are precisely prefabricated in FAGGIOLA-TI's factory according to the customer's specific requirements and are shipped after installation. The cylinders of the integrated pumping stations are customized and manufactured using advanced materials, including pumps, piping, valves, instrumentation, control equipment, and maintenance facilities to ensure cost-effective and reliable operation of the system.

Fully customized production of FRP integrated prefabricated pumping station to meet the different applications from rainwater to sewage, from small flow to large flow.

FAGGIOLATI's integrated pumping station is fully buried construction, with a series of advantages such as small footprint, easy installation and maintenance, convenient management, and friendly to the environment. After years of testing, FAGGIOLATI has been perfectly used in municipal engineering, railroads and highways, under the interchanges and other occasions of rainwater sewage collection and lifting discharge, as well as raw water intake and other fields.

FAGGIOLATI integrated prefabricated pumping station using on-demand manufacturing, completely according to customer requirements and engineers on-site survey measurement results, customized to meet customer needs of the cylinder system. Pumps, grates, valves piping, electrical equipment and other internal equipment installed after the factory, on the day of shipment can be directly transported to the site for lifting, effectively solving the integrated pumping station construction and operation of a variety of troubles in the process.





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FPS Integrated Prefabricated Pumping Station Application

Stormwater Emergency drainage

Design

Adopting the highest groundwater anti-floating and pressure-bearing design at a maximum depth of 20m, with full consideration of additional loads such as earthquakes and material attenuation, the main structure meets a service life of more than 50 years, and there is a professionally designed and stabilized improvement program for projects with a depth of more than 20m, which can be installed on the side of highways and railroads, and also be used for the drainage of water underneath overpasses, deep tunnels, and other applications.

Product

The cylinder is made of high-strength glass fiber reinforced plastic (FRP), with the whole continuous winding process, which fundamentally eliminates the risk of process quality, with higher strength, more stable quality and more beautiful appearance. The bottom of the cylinder is specially designed by CFD, adopting aviation technology materials and vacuum filling technology, which reduces the silt accumulation at the bottom of the pumping station to a greater extent.

Inspection

Tested by the National Center for Supervision and Inspection of Glass Fiber Product Quality, CFD flow field analysis by the National Research Center for Water Pump and System Engineering Technology, and finite element analysis by FEA and CAE, it has strong anticorrosive, seepage-proof and aging-resistant properties, and meets all kinds of extreme working conditions.

Railroad, highway and

underpass drainage

FAGGIOLATI® Integrated Prefabricated Pumping Station **Urban Sewage** Stormwater Upgrading

Water supply

Attractions Storm Sewerage Collection and Upgrading

Building drainage





FPS Integrated Prefabricated Pumping Station Technical Advantages

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Selectable

-Basket grating with guide rails [light and medium duty] / Crusher type grating -Crusher -Simple deodorizing device -Inlet pipe bushings -Watertight drains -Pressure tapering tube -Mixer and mounting accessories -Flexible joints, rubber expansion hoses with flanges -Built-in service platform ladder -Optional insulation



Sizes

-Design flow rate and head -Number of pumps required, including working pumps and standby pumps -Ground elevation, inlet/outlet pipe elevation -Inlet/outlet pipe diameter

Applications

-Application areas: municipal engineering, industry, construction or others -Installation requirements: indoor/outdoor.



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Structural form

-Modular wet well pumping station -Customized pumping stations

Internal piping material

-304 stainless steel (standard), 316, PE



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Liquid Level Sensor

-Pressure sensor (standard) -Float switches -Ultrasonic level sensors, etc.

Control system

-Local Control -Remote Auto / Remote Manual -Remote Cloud Configuration Manual



Engineered Systems Design

Pump

[Systematic product design so that each component matches perfectly]

Cylinder

Shell strength optimization, comprethe FEA strength finite element analwater impact analysis, etc., to achieve the optimization of the overall structure and design, greatly increasing the strength of the pumping station prevention of seepage, ultra-long service life.

FAGGIOLATI uses CFD fluid dynamics simulation to design the self-cleaning bottom, which reduces the accumulation of sludge at the bottom to a greater extent, avoids clogging, effectively inhibits the generation of toxic and foul-smelling gases, and thus avoids the problem of frequent manual slag removal and salvage under adverse working conditions.

Intelligent Remote Control System

Equipped with centralized database and web server, no need to set up a central control room, users only need to use the Internet to access smart phones, tablets or PCs, you can real-time monitoring of the pumping station operating status, such as operating time, load points, set points, sensor values, alarms and so on. It realizes unattended operation, reduces staffing and saves more energy.



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Equipped with advanced technology impeller, it has super high hydraulic efficiency, while ensuring larger overflow diameter and providing more anti-clogging ability.

Dedicated pumping stations Control System

By a locally integrated stand-alone

monitoring module with associated electrical connections, real-time monitoring of the pumping station's operating status, and rapid response in case of failure

monitoring of the pumping station's operating status and quick response in the event of a fault. Numerous features minimize oper ating costs and provide easy installation and trouble-free operation.

Integrated design

For each project, the hydraulic components of the pumping station, the overall structure, the ventilation system, deodorization, and dehazardous gas detection are integrated into the overall design.

Maintenance-free product design

FPS Integrated Prefabricated Pumping Station Product Type

conveying capacity

Wellbore Diameter	1200	2000	3000	3800	多井筒方案
Maximum flow rate	240m ³ /h	450m ³ /h	1650m ³ /h	5000m ³ /h	16000m ³ /h

control system. Wellbore

Wellbore Maximun

Customized pumping stations

Completely tailored to the customer's requirements and designed by FAGGIOLATI professionals, customized pumping stations can consist of two or more integrated wellbores or stand-alone wellbores, with a wide range of special equipment or special pumps that can be installed inside as required.

Wellbore Diameter (mm) Wellbore height Maximum pipe diameter (DN

As you need, FAGGIOLATI integrated prefabricated pumping stations are fully customized according to the demand of working conditions, flow rate and head, equipped with submersible sewage pumps for sewage lifting, and submersible axial flow pumps for rainwater and flood water discharge. In addition, FAGGIOLATI offers services for the retrofitting of traditional pumping stations. For more solutions please contact FAGGIOLATI.



Modular Wet Well Pumping Station

Internally equipped with maintenance platform and ground

Diameter (mm)	1200、2000、2500、3000、3800					
neight	Customized to design elevation					
pipe diameter	150、200、250、300、500					

Customized by design Customized by design Customized by design

FPS Integrated Prefabricated Pumping Station Dedicated control systems

PREMIUM



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In order to adapt to the performance needs and working

conditions of integrated pumping stations, FAGGIOLATI has

designed a special control system for integrated precast

pumping stations. The system offers enhanced clogging

FAGGIOLATI has extensive experience in operating and

maintaining pumping stations and obtaining the lowest life

In order to be able to optimally operate different types of

pumping stations, FAGGIOLATI has developed controllers

and control panels that come standard with unique built-in

From the comfort of their office and with an internet-connect-

ed computer or smartphone, customers can monitor the

pumping system in real time, analyze and adjust parameters, and share records with open access to the relevant person-

nel in order to notify the scheduling of personnel according to

prevention, energy savings and flexible configuration.

cycle costs.

features.

Control System Functional Characteristics

·Startup Wizard

·Continuous energy optimization according to operating conditions

·Free start/stop and alternation of pumps

·Free setting of the starting level

·Quick commissioning through wizard function ·Measurement of inlet flow and pumping flow ·Accurate and clear alarms for fast troubleshooting

Adoption of electronic sensors, with better anti-interference ability.

Recording, querying and exporting of operation logs.

·Remote monitoring of the pumping station from the web site without installing software.

·Remote monitoring of the pumping station by cell phone APP

the actual operating conditions.

The control system reduces energy consumption and maintenance with a detailed interface that enables operators and engineers to accurately monitor pumping station operating conditions, randomize start/stop levels, pump out and change start/stop levels based on energy costs and the required catchment pit volume in anticipation of high loads. It also solves pump clogging problems caused by residue/sludge buildup in problematic pumping stations.

The Fagiolati Remote Management System is a customized solution. It focuses on the control and operational management of pumps and grating systems. The system allows for continuous monitoring 24 hours a day, 7 days a week and the storage and backup of data. FAGGIOLATI provides the wastewater industry with improved service capabilities.



and so on.

·Build a multi-pump station monitoring station

Monitoring and management on computer

Mobile phone monitoring and management

·Pump station on-site console

Mobile phone SMS alarm

Through various sensors installed inside the pump and pump station, the signal is transmitted to the data acquisition and control module, the data acquisition and control module filters out the interfering models and removes the useful signals to make a comprehensive judgment, and sends out control instructions to the pump, and at the same time, the collected data are uploaded to the remote server through the GPRS module in the form of wireless data streaming. The remote server receives the pumping station data for classification and storage, and authorized users can log in to the server from anywhere through the client to check the real-time and historical data of sensors, and can intervene in the operation of the pumping station according to the actual situation. The system reserves the option of automatic alarm setting, through the wired or wireless signal to the specific personnel of the computer or mobile terminal for alarm.





Multi-modal management

Monitoring Management Advantages

Switching between field control and center control Internet-based data transmission

Remote monitoring to ensure safe and stable operation of the pur

FAGGIOLATI FPS integrated prefabricated pumping station has the self-detection, self-control, self-protection functions necessary for outdoor or field working environment, but also has the intelligent functions of data teleportation, automatic storage, automatic alarm, manual intervention, logging, historical data query, remote login hierarchical management

FPS Integrated Prefabricated Pumping Station Selection parameters

Model description and technical parameters

No	0.		Title	Standard specification material
		cylinder	GRP/SUS304	
		Cylinder systems	manhole cover	Embossed aluminum plate
			safety grille	GRP
	1		ventilation duct	SUS304
			Inspection platform	GRP/SUS304
			armrests	SUS304
			climbers	GRP/SUS304
		Submersible pumping systems	submersible pump	FAGGIOLATI Standard
	2		coupling base	FAGGIOLATI Standard
			slideway	SUS304
	3	Grid system	Crush Grating / Basket Grating	Foundry iron+SUS304 / SUS304
			Guide rails and lifting chains	SUS304
			Grille bracket	SUS304
	4 Plu		water inlet pipe	GRP / SUS304
		Plumbing	Water inlet flexible connector	Flange + Rubber
			pressure piping	SUS304
			Outlet flexible coupling	Flange + Rubber
	5	Gate systems	check valves	Ductile iron, epoxy lined
			Resilient SeatedGate Valves	Ductile iron, epoxy lined
	6	Control system	Level meter protection tube	SUS304
			Double Liquid Level Meter	SUS304
			Electrical control cabinets	SUS304

For other material options, please contact FAGGIOLATI.

The following units in the table are shipped bundled with the pumping station, the rest are assembled in the factory before shipment Submersible pumps, lifting chains, inlet and outlet flexible couplings, input level gauges, electrical control cabinets

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Material Description

FPS Integrated Prefabricated Pumping Station Submersible pump performance

FAGGIOLATI submersible sewage pumps have always been highly recognized by the wastewater industry.

The new series of FAGGIOLATI submersible sewage pumps is based on a completely new concept. The design makes full use of current technology. It focuses on providing users with more reliable operation, including advanced design, greater safety margins and market-leading anti-clogging performance with better debris handling.

The FAGGIOLATI FS series submersible sewage pumps have a built-in IEC 60034-compliant IE3 ultra-high efficiency motor to optimize motor efficiency. The benefit of using this type of motor is that it provides higher efficiency without increasing the frequency of clogging due to increased hydraulic efficiency.

Total efficiency includes:

-Motor efficiency

-hydraulic efficiency [pump efficiency

When trying to achieve a balance between the risk of clogging and energy consumption, the more economical available motor efficiency should be selected first. The reason for this is that the total motor efficiency is only more efficient if it is obtained when there is no risk of clogging.

The advantages of using this motor include:

- -No risk of clogging
- -Recognized international standards



FAGGIOLATI electric pumps, with a new liquid cooling system and a wide choice of materials, are able to meet the needs of "solving" a wide range of application problems. As the IE3 motors are suitable for management through frequency converters, FAGGIOLATI saves you management costs in addition to machine efficiency and reliability.

> 45% Mechanical structure and selection of the most suitable materials 30% Plugging and wear resistance 15% RPM management 10% Total output [motor + hydraulic]



Long-term reliability

-Reduced failure costs -Reduced tank truck transportation costs -Lower maintenance costs

More energy efficient

-Superior interference immunity

Superior debris handling

-Lower failure costs

-Reduced tank truck transportation costs

Designed for the future and other countries.

-Extended pump life

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PUMPINGSTATION 法乔拉蒂·一体化预制泵

IE 3

- -Reduced risk of contamination from overflows
- -Reduced risk of customer service interruptions

-Reduces energy consumption and carbon emissions -Reduces motor heating [Delta T min. 45° max. 80°C]. Optimum shaft temperature for long term continuous operation.

- -Provides lower risk of clogging on the market -Reduces risk of contamination from overflow -Reduced risk of customer service interruptions

- -Complies with laws and regulations for conventional motors in the U.S.
- -Impeller design based on future effluent content
- -High reliability ensures that overflow reduction targets are met.

Sustainability in manufacturing and operation

- -Reduced maintenance costs through adjustments rather than repairs

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FPS Integrated Prefabricated Pumping Station Anti clogging impeller

More than 60% of pump-related failures are directly attributable to clogging. This problem has not improved in recent years. Although the design of impellers has improved considerably, the requirement to reduce energy consumption and changing personal hygiene habits have also increased the risk of clogging.

New impeller concept

The FAGGIOLATI range of submersible sewage pumps features a new impeller concept: reinforced anti-clogging. Greater safety margins and market-leading anti-clogging performance with better debris handling. This solution not only makes better use of the various tried-and-tested anti-clogging type designs, but also adds new features to ensure that the solids free passage can pass waste such as fibers from waste cloths, personal hygiene products and other debris with a diameter of no less than 80% of the outlet diameter, thus further enhancing the pump's anti-clogging performance.

We are confident in our design because we have conducted over 5,000 man-hours of clogging tests, thoroughly understood the contents of the effluent to benchmark the existing design and optimize the impellers used in the FAGGIOLATI FS series.

Superior debris handling

-Provides a product with lower risk of clogging in the market

-Reduced risk of contamination from overflows -Reduced risk of customer service interruptions

-Reduced breakdown costs

-Reduced tank truck transportation costs

Optimized hydraulic design with CFD technology

The FAGGIOLATI range of optimized impellers, using CFD technology, matches your precise needs, providing you with better efficiency and reliability. The strategy used combines the Design of Experiments (DOE) method and numerical simulation (CFD). DOE is able to effectively analyze multiple design parameters, and the end result is a series of impellers optimized for a variety of applications.







Drainage Multi-blade п Impeller



Vortex Impeller V



Cutting Impeller J



Sand Vortex Impeller S



Single Channel М Impeller



Blade Impeller н



Grinder Impeller T



Open-blade Impeller P



Open vane Ν impeller

Performance Graph

The product range includes several models from 0.5 kW 350 kW, 2-4-6-8-10-12 poles (50 Hz and 60 Hz).









La gama de los productos incluye varios modelos, en múltiples versiones, desde 0,5 kW a 350 kW, de 2-4-6-8-10-12 polos (50Hz y 60 Hz).

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The product range includes different models in several versions, from 0,5 kW to 350 kW, 2-4-6-8-10-12 poles (50Hz and 60 Hz).

Das Produktangebot sieht verschiedene Modelle und mehrere Versionen vor, von 0,5 kW bis 350 kW, 2-4-6-8-10-12 Pole (50 Hz und 60 Hz).

Эта серия включает много моделей и их вариантов, в диапазоне мощностей от 0,5 до 350 кВт, 2-4-6-8-10-12 полюсов (50 и 60 Гц).

FPS Integrated Prefabricated Pumping Station Crush type grating

Choosing the right combination of crushed grates and high performance submersible pumps

Keeping the flow flowing smoothly

When building brand new pumping stations, you also need to consider the future challenges and risks they pose. The key to wastewater treatment is that blockages not only increase costs, but also pose a potential threat to the entire wastewater recycling network. Therefore, the ability to operate consistently and efficiently without clogging is a core requirement for all equipment.

In the modern world, the composition of wastewater is constantly changing. With the increase in waste, grease and debris in effluent, cost effectiveness and reliability are key to ensuring the flow of effluent is unimpeded. At the same time, environmental legislation is placing higher demands on the water treatment industry.

Pumps and crushed grates are used together to ensure safe operation.

To meet the high functionality requirements of major pumping stations and to provide additional protection against severe clogging, we have combined crushed grizzly grids with high-performance FAGGIOLATI pumps to form a complete wastewater solution that is robust enough to cope with today's and tomorrow's wastewater challenges, ensuring that the wastewater treatment system operates correctly and for a longer service life.

The FAGGIOLATI FGR Crushing Grate can be used to capture and crush difficult solid sewage wastes in high flow systems.

FAGGIOLATI has always been at the forefront of anti-clogging and energy-saving technology. Today, we also offer a wide range of rugged, highly reliable twin-shaft pulverizing grizzlies that can pulverize virtually any substance that could damage your system. Dual Shaft Dirt Crusher Grate features low speed and extremely high torque to crush hard solids. It also utilizes advanced and unique technology that captures all wet paper towels in the wastewater stream and crushes them into tiny pieces, thus preventing them from collecting in the wastewater system.



