

专注提高 专业服务

**YIMAN 艺迈®**

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YIMAN 艺迈® 专注提高 专业服务

**YMPS**

Integrated prefabricated  
pumping station



With the development of products, we reserve the right to alter the data. Please understand.

# ABOUT YIMAN

Shanghai Yimai Industrial Co. , LTD. IS A HIGH-TECH ENTERPRISE INTEGRATING EQUIPMENT R & D, production and sales. It is in collaboration with the Tongji University, and is the editor-in-chief of three national industry standards, committed to providing users with a systematic intelligent water one-stop service and the best system solutions, production base is located in Shanghai Jinshan Industrial and economic development zone, convenient transportation. Yimai has been adhering to the pragmatic work style and the value concept of integrity and responsibility, has become the industry leader in the company has branches in all provinces and cities across the country, comprehensive strength is among the best in the country, and has won a good reputation in the industry.

The company currently has more than 200 sets of production and testing equipment, including laser hand-held spectrometers, large-scale laser cutting machines, automatic welding machines, and has dozens of national patents, in cooperation with the Tongji University of Environmental Science and Engineering, we have established the "Tongji university-shanghai Yimai practical education base" and the "Tongji environment-yimai Joint Laboratory" and granted the division I "Tongji University 'program of Excellence' school-enterprise, Alliance Unit" title; At the same time, Yimai has won many honorary titles such as Shanghai High-tech Enterprise, Shanghai famous brand, Shanghai contract heavy credit unit, AAA credit grade enterprise and Five-star After-sales Service Enterprise. Yimai products are now widely involved in environmental protection, civil construction, municipal engineering, real estate, and other fields. The company has passed ISO 9001:2008 quality management system certification, Gb/t 24001-2004/ISO14001:2004 Environmental Management System Certification, Gb/t 28001-2011/OHSAS18001:2007 Occupational Health and Safety Management, system certification, electrical products 3C certification, various products energy conservation, water conservation and environmental protection certification certification, and other qualifications; products sell well in the domestic market and overseas market.

Yimai is willing to "focus on improving, professional services" business philosophy, to provide you with high-quality products and more reasonable solutions to achieve win-win and development.



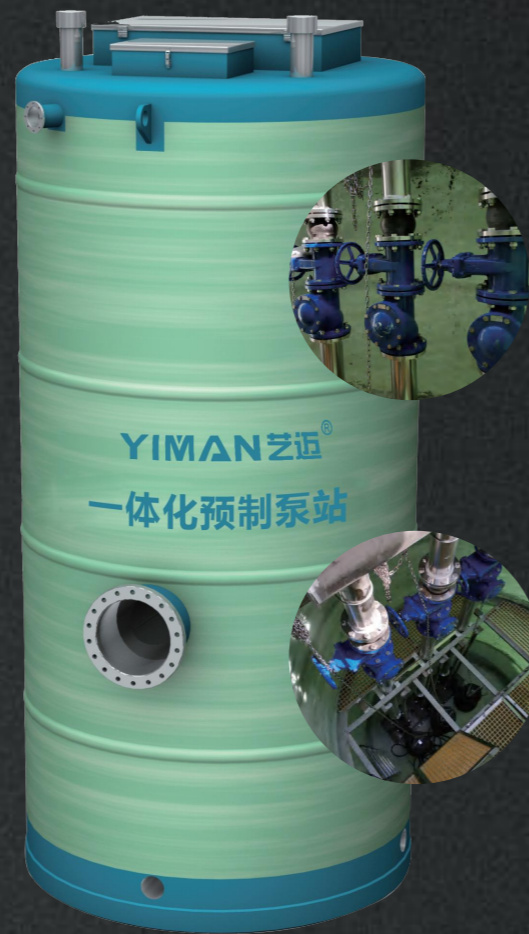
YMPS

INTEGRATED  
PREFABRICATED  
PUMPING STATION

滚滚长江东逝水

## YIMAN ADVANTAGE

- Yimai integrated prefabricated pumping station has the function of Water Hammer, which can effectively solve the problem of vibration and abnormal sound caused by the backflow of water in the pipeline after pump stop;
- The utility model can also solve the damage problem caused by the backwater in the project pipeline with high drop to the water pump;
- It is required to add filter device to inlet valve well of integrated precast pump station, which can effectively solve the problem of sundries blocking in pipeline.
- Factory pre-integrated installation of all pumping station piping accessories and equipment, perfect match, to achieve turnkey project;
- The optimized pump pit design, reduces the pump station bottom deposition, reduces the odor the generation, the pump station noise is small;
- The structure of pumping station is compact, and the optimum pump pit size is realized by design
- Glass fiber reinforced plastic material, no leakage
- Short cycle, easy installation
- Integrated Equipment, easy to install, flexible location



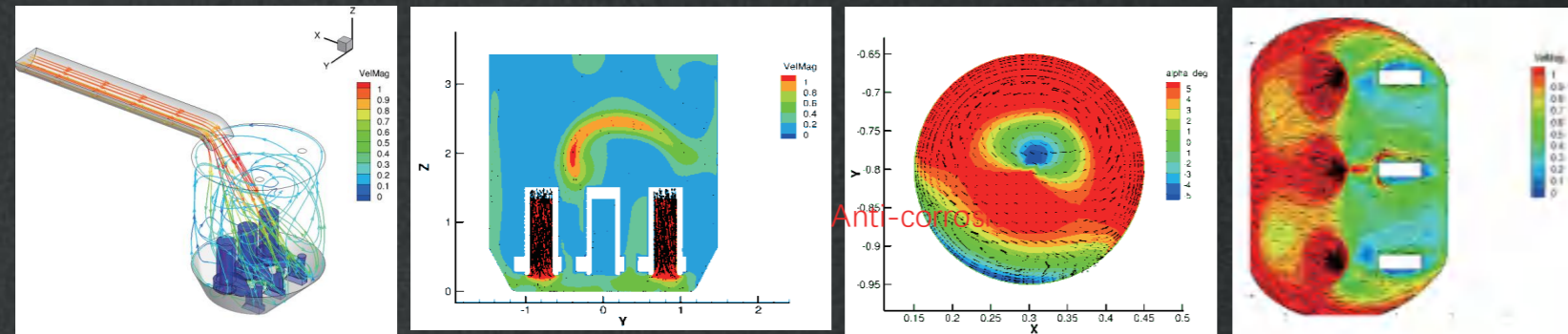
## Yimai integrated pre-casting pump station material description

PARTS	STANDARD FITTING	OPTION
Bottom of pumping station	Glass Reinforced Plastic (GRP)	-
Pump-station cylinder	Glass Reinforced Plastic (GRP)	-
Top cover of pumping station	Glass Reinforced Plastic (GRP)	-
Protective Grille	Glass Reinforced Plastic (GRP)+304 skeleton	-
Well lit	Embossed aluminum sheet	-
Intake pipe	Glass Reinforced Plastic (GRP)	Stainless Steel 304
Outlet Pipe	Stainless Steel 304	-
Air duct	Stainless Steel 304	Add axial flow fan
Pressure nconduit	Stainless Steel 304	Carbon steel
Check Valve	CAST iron	Stainless Steel
Gate Valve	CAST iron	Stainless Steel
Grille	Basket grille (304)	Crushing grille
Guide Rod	Stainless Steel 304	Galvanized Steel
Service Platform	Stainless Steel 304 frame	-
Level gauge casing	Stainless Steel 304	-
Climbing ladder	Stainless Steel 304	-
Hanging Hook	Stainless Steel 304	-
Handrail	Stainless Steel 304	-

## OPTIMIZATION OF CFD HYDRAULICS DESIGN FOR SELF-CLEANING BASE

Without special design and optimization, the bottom of pumping station is easy to be deposited and need to be cleaned up regularly, which not only increases the cost of operation and maintenance, but also consumes time and energy, toxic fumes from silting can also threaten the lives of downhole operators.

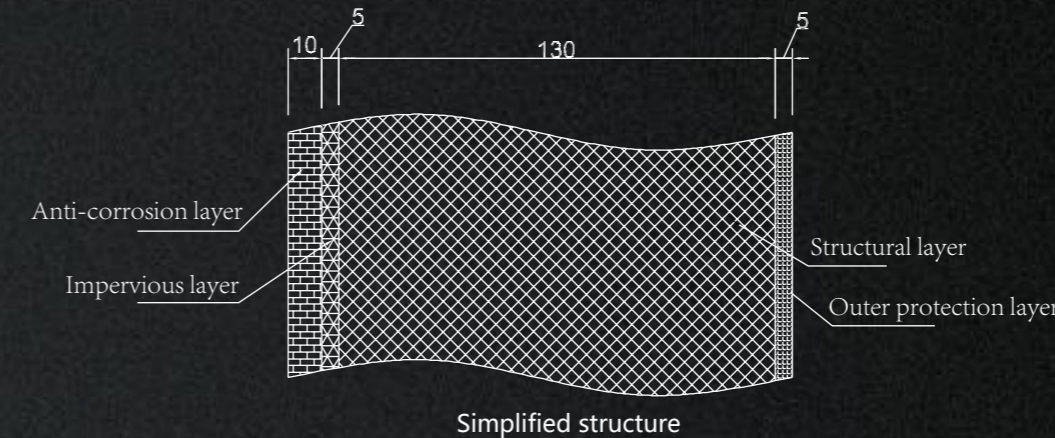
The YIMAI integrated precast pump station adopts FRP base, and the flow pattern at the bottom of pump pit is improved by CFD hydraulic optimization. More solid particles in the pumping station are removed by disturbing the settled solid particles in the way of increasing the turbulence, so that the sediment is pumped out with the sewage pump.



Pump pit optimization design, reduce the deposition of dirt, as far as possible to avoid toxic and harmful gas generation, reduce maintenance costs, while ensuring the maximum safety of the well maintenance personnel.

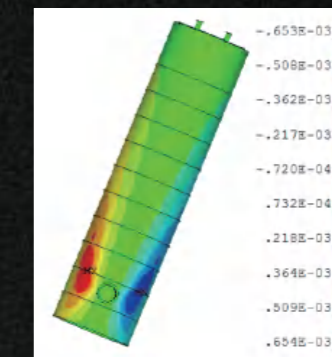
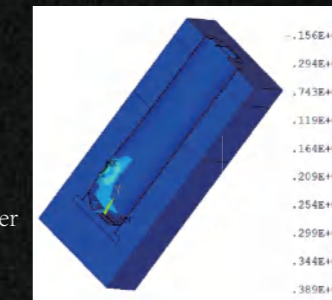
## SAFE AND RELIABLE SHELL DESIGN

The casing of Yimai Integrated Pump Station is made of glass fiber and its products as reinforcing materials, thermosetting resin as Matrix, and is produced by winding process. The Shell is composed of an anti-corrosion layer, an anti-permeability layer, a structural layer and an outer protective layer. The thickness of each layer is shown in fig. The outer protective layer adds UV resistant material to prevent exposure to sunlight and aging.



The characteristics of the shell made of FRP:

- Strong Corrosion;
- anti-permeability, increase in the surface of the anti-permeability layer of glass fiber reinforced plastic;
- density is about 0.25 times of steel, but the strength of steel lost about 2 times.



## FEA stress analysis and optimization design of cylinder:

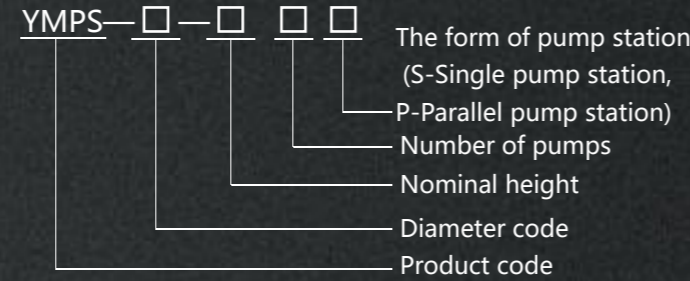
In the design of pump station shell, the pressure of surrounding backfilling medium, inner accessories and fluid on the shell should be taken into account. The professional design team of Emay combined with FEA stress analysis carried out a comprehensive design optimization on the pump station shell to ensure the safety and reliability of its operation.

The inside of the barrel can be supported by cross bars to strengthen the compression capacity of the shell

APPLICATIONS

- Construction and reconstruction of municipal sewage pipe network
- Circulation of water in a lake
- Community or rural community sewage collection and transport
- Reconstruction and expansion of the old pumping station
- Collection and transportation of urban sewage treatment
- Rainwater collection and transportation in low-lying areas of urban areas

MODEL MEANING



For example: the Pump station housing with nominal inner diameter of 2000mm and height of 8m, a single pump station with 2 pumps

Specification for yi-mai integrated prefabricated pumping station

Diameter (mm)	Maximum depth (m)	Number of pumps	Recommended flow (l/s)	Outlet diameter (mm)	Environmental temperature	Model of pump	Grid form	Boundary dimension
Φ1200	8	2	0~5	DN50-80	-20°C~+40°C	Non-clogging sewage pump, Diced sewage pump	Smash grille series, Basket grille series	Diameter xHeight, Drawing requirements or customer requirements
Φ1600	10	2	5~10	DN80-100				
Φ2000	12	2-3	10~20	DN100-150				
Φ2500	12	2-3	20~60	DN100-200				
Φ3000	16	2-4	60~100	DN150-400				
Φ3500	16	2-4	100~200	DN200-600				
Φ3800	20	2-4	200~350	DN300-800				
Φ4200	20	2-4	350~500	DN400-1400				
Customized	30	2-5	0~1000	DN50-1600				

How to design and select pre-casting pump station?

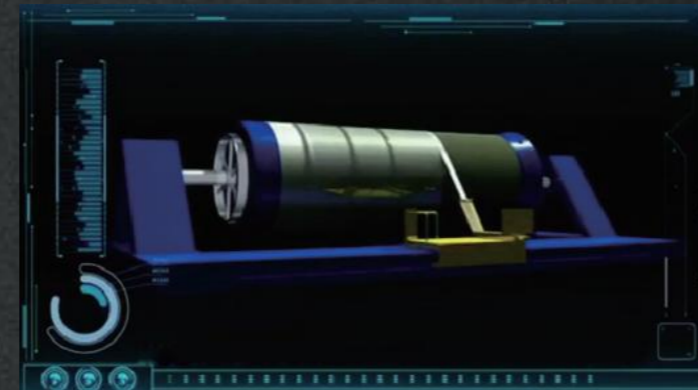
The key factor of design pump station - effective volume

The distance between the start and stop level of the pump will determine the optimal size of the pump station

- Too short distance may cause the pump motor to overload due to frequent start-up
- Too long distance may lead to sludge deposition, and also because of the long retention time of sewage in the pump pit, it will cause the blockage of the pump.

In order to ensure the safe and normal operation of the drainage pump station, the water storage part of the sump must have an appropriate effective volume, which will determine the size of the pumping station. Article 5.3.1 of the Standard for design of outdoor wastewater engineering (GB50014-2006) : The volume of the sump shall be determined by these factors such as the design flow, pump capacity and pump operation, and conform to the following requirements:

- The volume of the sewage pumping station sump should not be less than the water output of the maximum pump for 5 minutes;
- The volume of the rainwater pumping station sump should not be less than the water output of the maximum pump for 30 seconds;
- The volume of the combined sewage pumping station should not be less than the water output of the maximum pump for 30 seconds.



According to the different needs of customers, can choose different specifications of integrated pump station, can also be customized according to the special needs of production

YIMAN professional optional accessories



HYDROSTATIC DIFFERENTIAL LEVEL GAUGE



BALL FLOAT TYPE LEVER CONTROLLER



HAND-HELD HARMFUL GAS DETECTOR



PROFESSIONAL QUALITY VALVE



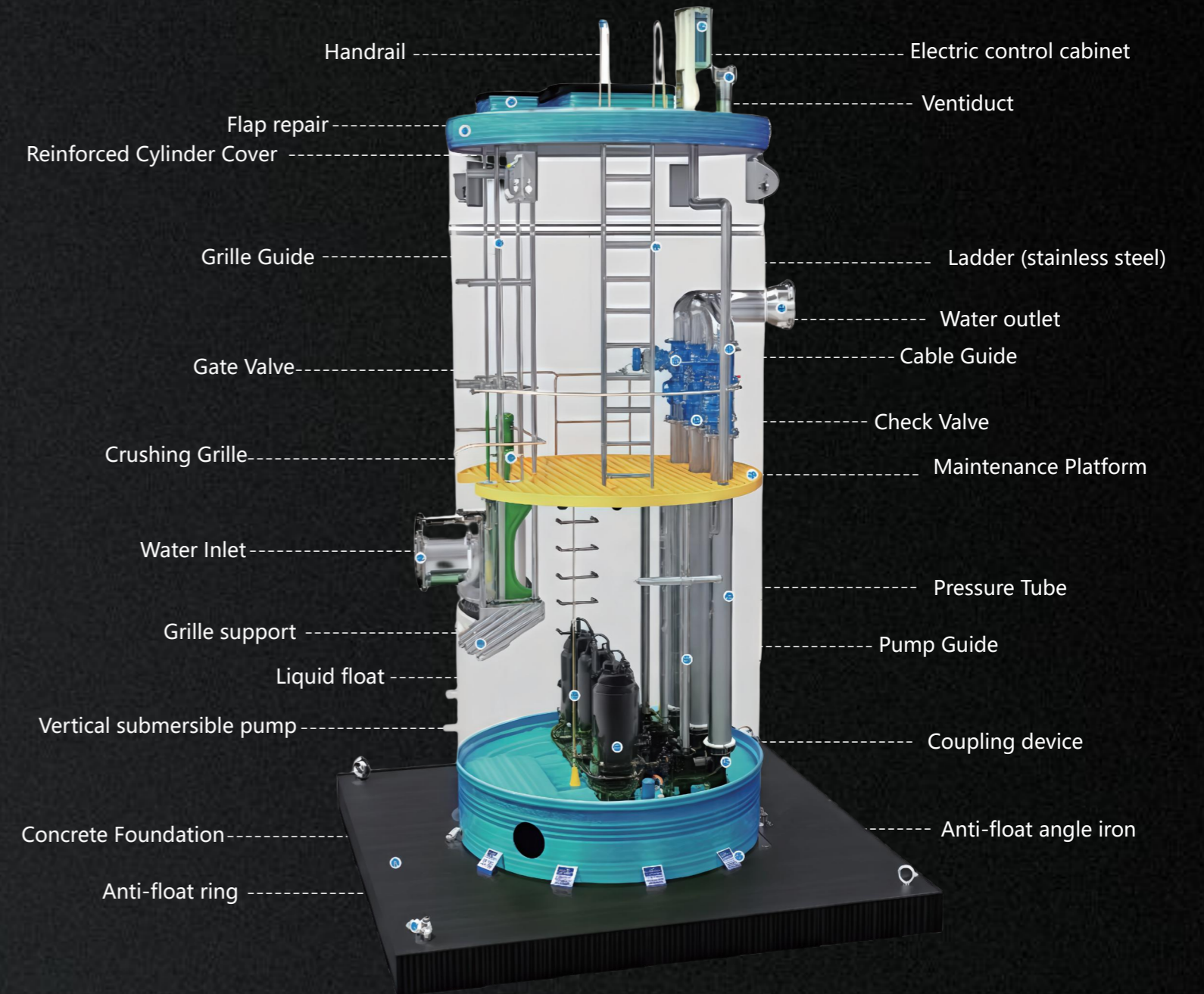
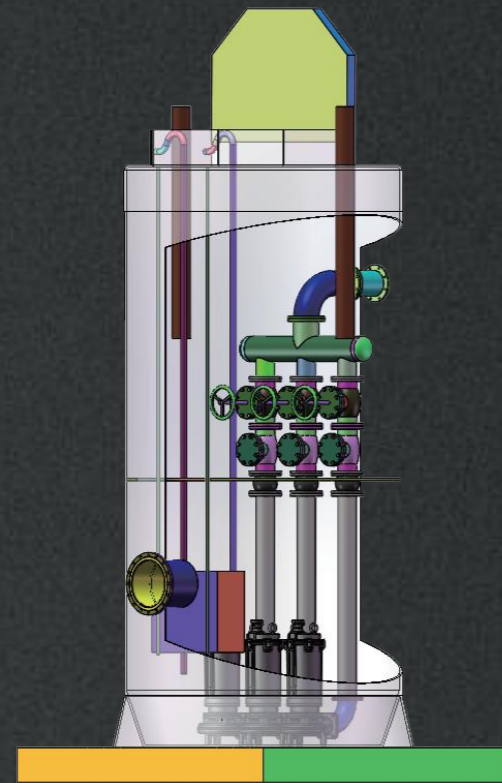
PZG



ALAT PENCEGAH BAU



FLOWLINE

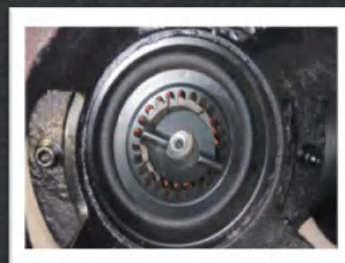


## New cutting sewage pump without clogging



National Utility Model Technology Patent "new cutting non-blocking sewage pump" equipment blocking the probability is very small, with cutting impeller, can be large waste removal after cutting treatment.

Yimai takes the lead in applying the grinding cutting technology to the cutting sewage pump, which thoroughly solves the problem of clogging, and greatly reduces the clogging probability by using the grinding cutter.



## Non-clogging sewage pump



1. Flow components: the pump body and impeller are optimized to make the pump with good performance, high efficiency, not overload, safer and more energy saving;

2. Motor: the submersible motor is carefully designed. The rotor of the motor and the hydraulic parts share a shaft to avoid connection errors. The motor runs more smoothly and has a protection grade of IPX8 and reliable protection for submersible work;

3. Shaft sealing: Two sets of mechanical seals (or rubber skeleton oil seal with mechanical seal) are installed in series to form a reliable seal. One set is installed in the machine sealing room to prevent the conveying medium from entering the oil room, and the other set is installed in the oil room to prevent the oil from entering the motor;

4. Protection: The water pump can choose motor winding overheat protection components float switch (optional installation above 11kW) and leakage probe head protection components. Combined with special electric control cabinet and liquid level float ball switch, it perfectly realizes automatic monitoring and alarm of leakage and winding overheat, and power off protection in case of short circuit overload and lack of phase.

## ADAPT TO LOCAL CONDITIONS

Yimai integrated pump station has also selected Grundfos, Weile, KSB and other imported pump brand suppliers as strategic partners to meet the needs of a variety of configuration customers.

- Can carry on the special size custom-made China Production Factory
- Centralizes the assembly, the body delivers, realizes the turn-key pump station



Custom Turnkey Projects – Worry-free and Effortless!

## TRANSPORTATION AND INSTALLATION

### 1. Transportation

When leaving the factory, the pump station barrel outside the middle of the body to dosupport to prevent the transport process of vibration damage to the barrel.

### 2. Installation

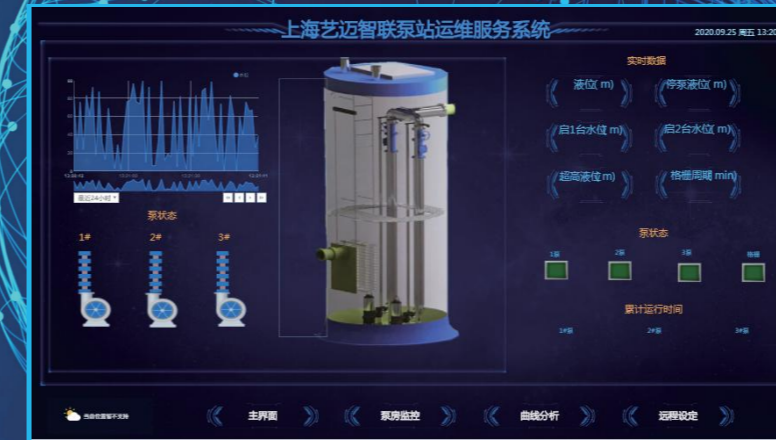
The support can not be removed when the Truss car is used for hoisting, and the soft joint can be installed to prevent the damage to the cylinder body. Only when the backfill is completed, after tamping to remove the support, and then the



# Intelligent control system



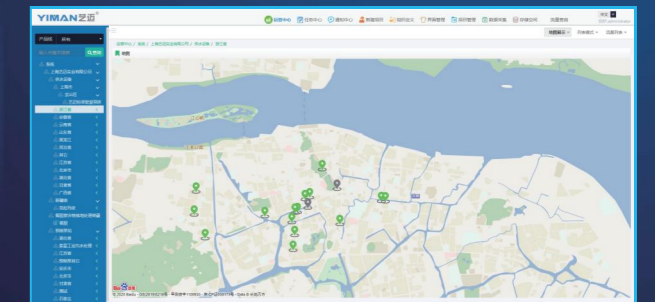
The new intelligent control system can realize the self-controlled operation of the pump station, and the user can control the pump station remotely without special personnel on duty



CFD optimization design of automatic cleaning cylinder bottom, prevent the formation of bottom sludge odor, avoid artificial cleaning, reduce maintenance costs



The control system is secure and easy to operate  
 With manual, automatic, remote, temperature, humidity, liquid level; grid control function, easy to operate  
 With surge protection, pump protection, anti-theft alarm, loss of power alarm and other functions to ensure safe operation of equipment  
 The utility model has the function of breath changing to ensure the personal safety of the operators



PROJECT CASE

HONORABLE MENTION

是非成败转头空，青山依旧在，几度夕阳红。



Jinan Tianqiao District rural Domestic Sewage Treatment Project  
MODEL: YMPS-380-7.25-3-S



Zhujiajiao Town rural domestic sewage Treatment project  
MODEL: YMPS-120-4.55-2-S



Linxia detention center armed police forces sewage upgrade  
MODEL: YMPS-160-3.6-2-S



Integrated precast pump station of Yanji vehicle inspection line  
MODEL: YMPS-200-3.1-2-S



Tongling Coking New Village Community Rain pollution diversion Project  
MODEL: YMPS-300-8.58-2-S



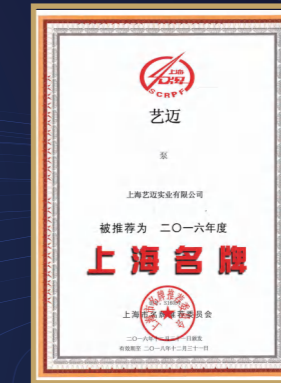
PPP project of sewage treatment for villages and towns in Honggan County  
MODEL: YMPS-300-5.3-2-S



Songzi form a complete set of the weishui river basin, the villages and towns sewage pipe network construction projects  
MODEL: YMPS-200-5.89-2-S



Louxing Industrial Group Central Sewage Treatment Plant official website  
MODEL: YMPS-300-5.5-3-S



One-stop Solution for Urban and Rural Drainage

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