给水设备 water supply facilities

辰禹流体（重庆）有限公司

Chen Yu Fluid (Chongqing) Co., LTD

目录 Catalogue

管网叠压（无负压）给水设备 Overlapping pipe network (no negative pressure) water supply equipment

◆ 产品简介 Product Introduction

管网叠压(无负压)给水设备是一种加压供水机组直接与市政供水管网联接、在市政管网剩余压力基础上串联叠压供水而确保市政管网压力不小于设定保护压力(可以是相对压力的 0 压力，小于 0 压力时称为负压)的二次加压供水设备。

A pipe network pressure-boosting (non-negative pressure) water supply equipment is a type of secondary pressurization system that directly connects to the municipal water supply network. It ensures the pipeline pressure remains no lower than the preset protection pressure (which can be set as zero relative pressure; negative pressure occurs when the pressure falls below zero). This system achieves this by serially combining the remaining pressure from the municipal pipeline network.

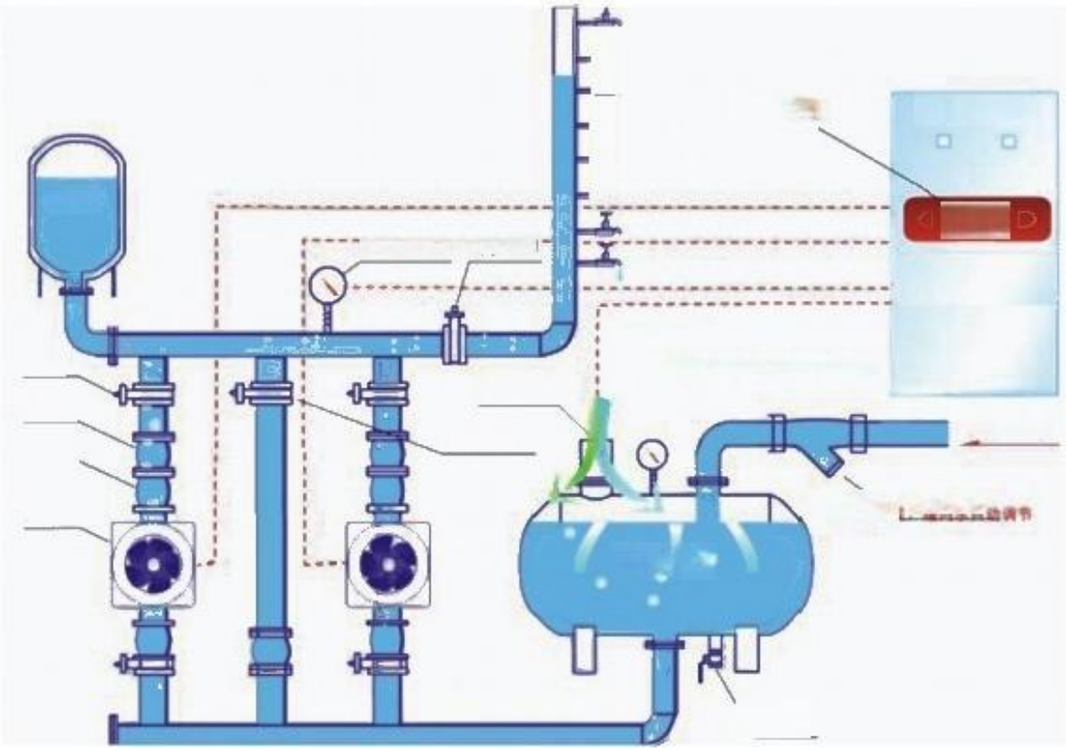
管网叠压(无负压)给水设备的核心是在二次加压供水系统运行过程中如何防止负压产生，消除机组运行对市政管网的影响，在保证不影响附近用户用水的前提下实现安全、可靠、 平稳、持续供水。

The core of the pipe network superposition (no negative pressure) water supply equipment is how to prevent the generation of negative pressure during the operation of the secondary pressurized water supply system, eliminate the impact of the unit operation on the municipal pipe network, and realize safe, reliable, stable and continuous water supply without affecting the water use of nearby users.

罐式无负压给水设备 Tank type negative pressure free water supply equipment

管网叠压(无负压)给水设备，目前市场上主要有罐式无负压给水设备与箱式无负压给水设备。

Pipe network superposition (no negative pressure) water supply equipment, the main tank type no negative pressure water supply equipment and box type no negative pressure water supply equipment are available in the market.



罐式无负压给水设备工作原理图

Working principle diagram of tank type negative pressure

管网叠压(无负压)给水设备是以市政管网为水源，充分利用了市政管网原有的压力， 形成密闭的连续接力增压供水方式，节能效果好，没有水质的二次污染，是变频恒压供水设备 的发展与延伸。在市政管网压力的基础上直接叠压供水，节约能源，并且还具有全封闭、无污 染、占地量小、安装快捷、运行快捷、运行可靠、维护方便等诸多有点。

The pipeline network pressure-boosting (non-negative pressure) water

supply system utilizes municipal pipelines as its source, fully harnessing the existing pressure to create a closed-loop continuous pressurization mechanism. This energy-efficient solution prevents secondary water contamination and represents an evolution of variable-frequency constant-pressure systems. By directly boosting water supply based on existing pipeline pressure, it achieves energy savings while offering multiple advantages including full enclosure, pollution-free operation, compact footprint, rapid installation, efficient operation, reliable performance, and convenient maintenance.

罐式无负压供水设备，适用于市政供水相对稳定的低区。

Tank type negative pressure free water supply equipment, suitable for municipal water supply relatively stable low area.

◆ 技术参数 Technical parameter

1、流量范围：≤1000m²/h

2、 压力范围：≤2.0MPa

3、 控制单台水泵功率：315KW

4、 压力调节精度：<±0.01MPa

5、环境温度：0~□40℃

6、相对湿度：≤90%（电控部分）

7、电源：380*（1+10%）50Hz±2Hz

8、防护等级：控制柜(IP30)、水 泵(IP55)

1.Flow rate range: ≤1000m²/h

2. Pressure range: ≤2.0MPa

3. Power control for single pump: 315KW

4. Pressure regulation accuracy: <±0.01MPa

5. Ambient temperature: 0~□40°℃

6. Relative humidity: ≤9 0 % (electronic control section)

7. Power supply: 3 8 0 V×(1+1 0 %) 5 0Hz±2Hz

8. Protection ratings: Control cabinet (IP30), Pump (IP55)

◆ 型号意义 Model significance

WG 40/60-21600 W

WG----------代表无负压供水 Represents non-negative pressure water supply

40----------额定供水流量(m/h) Rated water supply flow (m/h)

60----------额定供水扬程(m) Rated water supply head (m)

2----------水泵台数 Number of pumps

1600----------补偿罐规格 Compensation tank specifications

W----------稳流补偿罐形式(W 表示卧式，L 表示立式) Stable flow compensation tank form (W means horizontal, L means vertical)

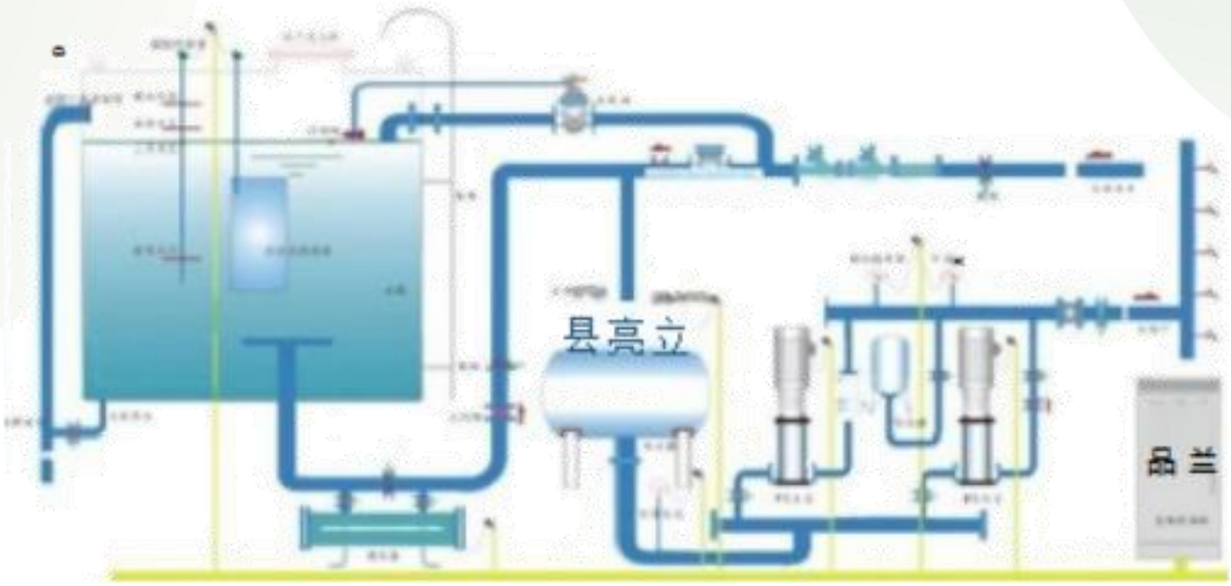
箱式无负压供水设备 Box type negative pressure free water supply equipment

箱式无负压供水设备是组合式不锈钢水箱和变频恒压供水设备的基础上开发研制的，并加装防负压、防倒流、防水质恶化等控制装置。该设备与普通的变频供水设备和无负压供水设备相比，具有节能显著、噪音低、占地少、可靠性高等有点，是目前最先进的供水模式。

The box-type non-negative pressure water supply system is developed based on modular stainless steel tanks and variable frequency constant-pressure water supply equipment, with added control devices for negative pressure prevention, backflow protection, and water quality degradation prevention. Compared to conventional variable frequency water supply systems and non-negative pressure systems, this equipment demonstrates significant energy efficiency, low noise operation, compact footprint, and high reliability, making it the most advanced water supply solution currently available.

箱式无负压供水设备适用于市政供水极不稳定(间歇性供水)的低区。

Box-type negative pressure free water supply equipment suitable for low areas with unstable municipal water supply (intermittent water supply).



箱式无负压给水设备工作原理图

Working principle diagram of box type negative pressure water supply equipment

当公共供水管网≤0.2Mpa 时(可自由设定 0.2—0.4Mpa)无负压装置关闭，无负压进水装 置打开，由水箱供水，反之当公共供水管网压力≥0.2Mpa 时，延时 10 分钟(时间可调整)无负压 装置打开无负压进水装置关闭，由公共供水管网供水。无负压水箱内存储的水通过智能控制 每 6 小时循环一次确保水质新鲜、纯净。

When the public water supply network pressure is ≤0.2MPa (adjustable via 0.2—0.4Mpa parameter), the non-negative pressure device remains inactive, allowing water supply from the tank. Conversely, when the network pressure reaches ≥0.2MPa, the non-negative pressure device activates after a 10-minute delay (adjustable duration), while the non-negative pressure intake valve remains closed. The system then switches to direct water supply from the public network. The non-negative pressure tank maintains water circulation every 6 hours through intelligent control, ensuring continuous freshness and purity of the water supply.

自来水管网停水无负压装置自动关闭，水箱的无负压进水装置自动打开由水箱供水。 当水箱液位低至一定程度时，无负压进水装置自动关闭，设备自动停机，复电时自动投入运行。

The water pipe network is automatically shut down without negative pressure device, and the non-negative pressure water intake device of the water tank is automatically opened to supply water. When the water level of the water tank is low to a certain extent, the non-negative pressure water intake device is automatically closed, and the equipment is automatically shut down. When power is restored, the equipment is automatically put into operation.

变频恒压供水设备 Variable frequency constant voltage water supply equipment

◆ 产品简介 Product Introduction

变频恒压供水设备是一种新型的节能供水设备。变频恒压供水设备系运用当今最先进的微电脑控制技术，将变频调速器与电机水泵组合而成的机电一体化高科技节能供水装置。变频 恒压供水设备以水泵出水端水压(或用户用水流量)为设定参数,通过微机自动控制变频器的 输出频率从而调节水泵电机的转速，实现用户管网水压的闭环调节，使供水系统自动恒压稳于 设定的压力值：即用水量增加时，频率提高，水泵转速加快；用水量减少时，频率降低，水泵转速减慢。这样就保证了整个用户管网随时都有充足的水压(与用户设定的压力一致)和水量 (随用户的用水情况变化而变化)。

Frequency conversion constant pressure water supply equipment is an innovative energy-efficient solution. Utilizing cutting-edge microcomputer control technology, this integrated electromechanical system combines variable frequency drives with motor-driven pumps to deliver high-performance water supply solutions. The system automatically adjusts pump speed through frequency modulation based on real-time parameters from the pump outlet (water pressure) or user consumption flow rate. This closed-loop regulation maintains stable water pressure across the entire network: increased usage triggers higher frequency and faster pump rotation, while reduced demand causes lower frequency and slower operation. The design ensures continuous water pressure (aligned with user-set targets) and flow rate (responsive to actual consumption) throughout the pipeline network.

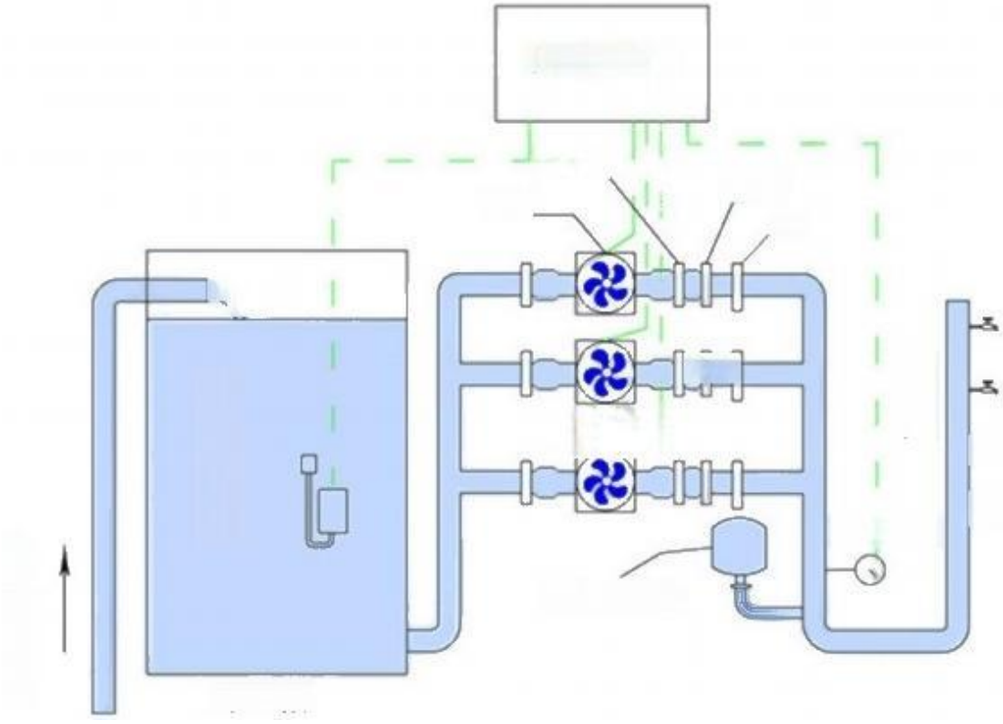
随着二次供水加压技术的发展，变频恒压供水设备从根本上解决了这些问题。据“供水 设备推广中心”的资料显示，变频恒压供水设备不需建造水塔，投资小、占地少，采用水气自 动调节、自动运转、节能与自来水自动并网，停电后仍可供水，调试后数年不需看管。比建造水塔节约投资 70%,比建造高位水箱节约投资 60%，大大节约土建投资。

With advancements in secondary water supply pressurization technology, variable frequency constant-pressure water supply systems have fundamentally resolved these challenges. According to data from the Water Supply Equipment Promotion Center, these systems eliminate the need for water towers, requiring minimal investment and space. They feature automatic water-air regulation, continuous operation, energy efficiency, seamless

integration with municipal water networks, and uninterrupted water supply during power outages. After commissioning, they require no maintenance for years. Compared to traditional water tower construction, this approach saves 70% on initial costs and 60% on elevated tank installation expenses, significantly reducing infrastructure investments.

变频恒压供水设备广泛用于企事业单位、住宅区及农村的生产、生活、办公用水。供水 户在 20-2000 户。日供水量在 20-50000m3 ， 供水高度达 150 米，即 50 层楼房。

Frequency conversion constant voltage water supply equipment is widely used in enterprises, residential areas and rural production, living, office water. The water supply household is 20-2000 households. The daily water supply is 20-50,000m3, the water supply height is up to 150 meters, that is, a 50-story building.



变频恒压给水设备工作原理图

Working principle diagram of variable frequency constant pressure water supply equipment

◆ 技术参数 Technical parameter

1. 流量范围：≤1000m³/h Flow rate: ≤1000m³/h

2. 压力范围：≤2.0MPa Pressure range: ≤2.0MPa

3. 控制单台水泵功率：315KW Control the power of a single pump: 315KW

4. 压力调节精度：<±0.01MPa Pressure regulation accuracy: <±0.01MPa

5. 环境温度：0-□40℃ Environment temperature: 0-□40℃

6. 相对湿度：≤90%(电控部分) Relative humidity: ≤90% (electronic control part)

7. 电源：380*(1+10%)50Hz±2Hz Power supply: 380* (1+10%) 50Hz±2Hz

8. 防护等级：控制柜(IP30)、 水泵(IP55) Protection class: control cabinet (IP30), pump (IP55)

◆ 型号意义 Model significance

HG 40/60-2/600

HG----------代表变频恒压供水设备 Represents variable frequency constant voltage water supply equipment

40----------额定供水流量(m3/h) Rated water supply flow (m3/h)

60----------额定供水扬程(m) Rated water supply head (m)

2----------水泵台数 Number of pumps

600----------稳压补偿罐(气压罐) Stable pressure compensation tank (pressure tank)

◆ 产品优势 product superiority

变频恒压供水设备由水泵、稳压罐、阀门、底座、管路附件及变频控制系统等部分组成，其突出有点是:不需要建造水塔，投资小，占地少，布置灵活，建成投产快;采用水气自动调节、自动运转，调试后不需专人看管;广泛用于企业单位、住宅区及农村的生产、生活、办公供水。

The variable frequency constant pressure water supply system consists of a pump,

pressure stabilizing tank, valves, base, pipeline accessories, and frequency conversion control system. Its key advantages include: eliminating the need for water tower construction, low investment costs, minimal space requirements, flexible installation layout, and rapid commissioning. The system features automatic water-air regulation and continuous operation, requiring no dedicated personnel after initial debugging. Widely adopted in enterprises, residential communities, and rural areas for industrial, domestic, and office water supply systems.

智能化优质健康直饮水设备 Intelligent high quality healthy direct drinking water equipment

◆ 产品简介 Product Introduction

纯净水设备是生产纯净水的，在我们的身边纯净水已经被我们广泛的应用，并且在业界也得到大量的好评和认可。设备的结构简单，工艺精湛，作为纯净水生产的依托是非常重要的。所以要生产纯净水一定是要选择原水水质比较好的地方，如山泉、深井等。在这里牵扯到一个非常重要的指数，“电导率”。一般而言电导率越低，水越纯净。现在采用的水处理工艺都是采用的反渗透系统，经过处理后的水一般能达到 90%—99%的脱盐率。

Purified water equipment, which produces purified water, has been widely adopted in daily life and has received substantial acclaim within the industry. The equipment features a simple structure and sophisticated manufacturing processes, serving as a crucial foundation for purified water production. Therefore, it is essential to source raw water from areas with high-quality water sources such as mountain springs or deep wells. This process involves a critical parameter: "conductivity." Generally, lower conductivity indicates higher purity of water. Current water treatment technologies employ reverse osmosis systems, achieving desalination rates of 90%-99% for treated water.

纯净水设备可以有效地清除水中的细菌，重金属离子等有害物质，还可清除无法清除的氟等致癌的物质（需要按照说明书上所说要定时的进行维护和保养）。纯净水设备是一种技术成熟，操作便捷的系统。

Purified water equipment can effectively remove bacteria, heavy metal ions and other harmful substances in the water, but also can remove carcinogenic substances such as fluorine that cannot be removed (it is necessary to carry out regular maintenance and maintenance according to the instructions). Purified water equipment is a mature technology and convenient operation system.

设备所用装置均为食品级不锈钢 sU304 、SUS316 材料制造，符合国家相关规范标准要求，不对水质产生任何污染，为绿色产品：

1. 设备全天候智能化全自动运行、无人值守，具有强大的功能系统，能满足用户的适时要求，配置的监控、监测系统能够全天候对设备的运行状态、水质情况及管道安全进行监控，保证安全供水；

2. 直饮水标准符合国家 GB5749 规定的 106 项水质指标及卫生标准，与国际接轨；

3. 直饮水中具有人体健康所必需的微量元素和矿物质，硬度适中；

4. 直饮水中不含病原微生物，经过严格的消毒处理，无病毒、病菌；

5. 直饮水中不含危害人体健康的化学物质和放射性物质；

6. 系统水利用率可达到 90%以上，产出成品水水率高、水处理成本较其他膜过滤及渗透传统方式降低 80%；

7. 直饮水是 一 种可以直接冷饮、加热或做饭的优质健康直饮水；

8. 产品可用于制水厂、居民小区、工厂学校、新农村、楼堂馆所等高标准饮用水。

The equipment is manufactured from food-grade stainless steel (SUS304 and SUS316) materials, complying with national regulatory standards and ensuring zero water contamination. As a green product:

1. The system operates in intelligent, fully automated mode around the clock without human intervention, featuring robust functionalities to meet users 'real-time needs. Its integrated monitoring system ensures round-the-clock tracking of operational status, water quality, and pipeline safety for reliable drinking water supply;

2. Direct drinking water meets China's GB5749 standard with 106 specified water quality indicators and hygiene requirements, aligning with international benchmarks;

3. The purified water contains essential trace elements and minerals beneficial to human health, with moderate hardness levels;

4. Strict sterilization processes eliminate pathogens and viruses from the water;

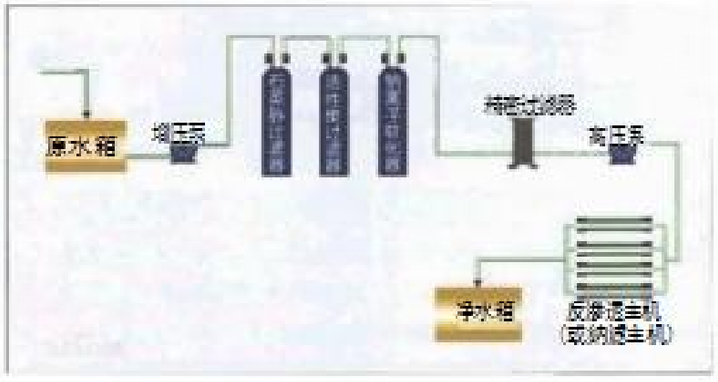
5. Free from harmful chemicals and radioactive substances;

6. Achieves over 90% water utilization efficiency, producing high-quality water at 80% lower costs than traditional membrane filtration or osmosis methods;

7. Provides premium drinking water suitable for direct consumption, heating, or cooking;

8. Ideal for high-standard water supply in water treatment plants, residential communities, factories, schools, rural areas, and public facilities.

◆ 工艺流程图 Engineering flow sheet



一体化污水提升设备 Integrated sewage lifting equipment

◆ 产品简介 Product Introduction

SY(W/N) 智能污水提升器，是我供水针对 实际排污领域排污要求高，污水物质复杂，不易排出，给排污管道和排污设备造成堵塞及 破坏使设备不能正常工作等问题，研发设计 推出的新一代智能排污提升器。W/N 智能污水提升器，具有多项创新涉及，并且有完全自主知识产权。产品经权威部门测试多项性能指标均达到国内先进水平，产品投放后以其独特的设计、可靠的质量和优越的性能受到广大用户的一致好评，被多家单位选用为代替进口和改造排污工程首选产品。

SY (W/N) Intelligent Sewage Lift is a next-generation smart sewage lifting system developed by our water supply company to address the high discharge standards and complex wastewater composition in practical sewage treatment applications. This innovative solution effectively prevents pipeline

blockages and equipment damage that typically occur with conventional methods. Featuring multiple proprietary innovations, the W/N Intelligent Sewage Lift has been certified by authoritative institutions as meeting China's advanced technical benchmarks. Since its market launch, it has garnered widespread acclaim for its unique design, reliable performance, and superior functionality, becoming the preferred choice for domestic organizations replacing imported systems and upgrading existing sewage treatment projects.

◆ 产品优势 product superiority

1.SYWT 智能污水提升器型号广、能满足不同容积、不同扬程、不同工况用户的实际需求。解决了常规污水提升设备很难解决的堵塞、缠绕、臭味，需要人工定时清理污水池等难题，设备实际将污水中的纤维物质和颗粒物质瞬间切碎后排出。

2、输送时无堵塞、无缠绕、无臭味，顺利将分离物质输送到排污管道，到过指定地点和处理地点，使设备真正达到最佳排放。

3、专用机电一体化控制电气智能系统可根据污水量变化而变化启动及停止设备。实际无人值守，智能管理 。

4、SYWT 智能污水提升器，占地面积小，不须专为排污建污水水池和机房，降低初期投入。后期大大降低设备维护及人员清洗清理污水池费用。

5、SYWT 智能污水提升器可根据用户不同工况要求选择不同品种提升泵，满足用户需求。

6、SYWT 智能污水提升器真正实现了泵在工作时完全高效率运行。

1.SYWT Intelligent Sewage Lifters offer diverse models to meet users' practical needs across different capacities, elevations, and operational scenarios. They effectively resolve common issues like clogging, entanglement, odor, and manual cleaning of sewage tanks that traditional equipment struggles with. The device instantly breaks down fibrous and particulate matter in sewage before discharge.

2. Seamless operation ensures unobstructed material transfer to pipelines, delivering separated substances to designated treatment sites for optimal discharge.

3. A dedicated mechatronic control system automatically adjusts

startup/suspension based on flow variations, enabling fully automated management without human intervention.

4. Compact design eliminates the need for dedicated sewage tanks or machine rooms, reducing initial investment while significantly lowering maintenance and cleaning costs.

5. SYWT supports flexible pump selection according to specific operational requirements.

6. This intelligent system achieves peak efficiency during continuous operation, ensuring reliable performance.

◆ 技术参数 Technical parameter

1 、流量范围：≤5-20m³/h　　Flow range: ≤5-20m³/h

2、扬程范围：7-30m　　Head range: 7-30m

3、控制单台水泵功率：0.75-7.5KW　Control the power of a single pump: 0.75-7.5KW

4、进出水口径： DN50-DN200　　Inlet and outlet water diameter: DN50-DN200

5、环境温度：0~□40℃　　Ambient temperature: 0~□40℃

6、 电源：380*(1+10%)50Hz±2Hz　Power supply: 380* (1+10%) 50Hz ±2Hz

◆ 型号意义 Model significance

SY(W/N) 15/ 80-2.2

SY(W/N)----------免维护密闭智能污水提升器(W 为外置式、N 为内置式)　Maintenance-free closed intelligent sewage lift (W is external, N is internal)

15----------污水排放能力(m/h)　Sewage discharge capacity (m/h)

80----------额定提升能力(m)　Rated lifting capacity (m)

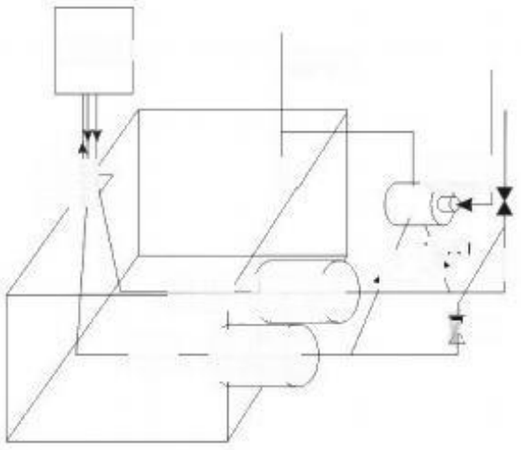
2.2----------单台水泵功率(KW)　Power of a single pump (KW)

- **免维护密闭智能污水提升器适用范围：Scope of application for maintenance-free closed intelligent sewage lifters:**

免维护密闭智能污水提升器，普通公共建筑，医院，别墅，商城，餐饮娱乐等场所中需要强排污水的 场所 。

Free maintenance of closed intelligent sewage lifters, ordinary public buildings, hospitals, villas, shopping malls, catering and entertainment and other places that need to discharge strong sewage.

- **免维护密闭智能污水提升器适用工况： Working conditions suitable for maintenance-free closed intelligent sewage lifters:**



免维护密闭智能污水提升器可广泛应用与地下设施中需要强排污水的场所，如人防工程、地下室、地铁站、地下通道、卫生间等无法顺利排污的场所。传统解决地下设施污水的方法是设置污水坑再用污水泵将污水打到室外污水管网。然而，这种排放形式存在诸多弊端，由于污水中的杂物复杂，甚至含有极难搅碎的物质，如铁丝、瓶盖等，很难避免污水泵因堵塞而损坏，必须定时清掏，二污水坑内所散发的臭味不仅污染环境并且对清掏人员的身体健康造成极大伤害。

Maintenance-free sealed intelligent sewage lifters are widely applicable in underground facilities requiring efficient wastewater discharge, such as civil defense projects, basements, subway stations, underground corridors, and restrooms where conventional drainage methods prove inadequate. Traditional solutions involve constructing sewage pits and using pumps to transfer wastewater to external networks. However, this approach presents multiple drawbacks: The complex debris in sewage—containing hard-to-crush materials like metal wires and bottle caps—frequently causes pump blockages requiring regular cleaning. Moreover, the foul odors emitted from these pits not only pollute the environment but also pose significant health risks to sanitation workers.

传统排污方式与密闭式污水提升器对比 Comparison between traditional sewage discharge mode and closed sewage lifters

	传统排污方式 Traditional sewage discharge method	密闭污水提升装置方式 Sealed sewage lifting device method
排污方式变革 Change of sewage discharge mode	在卫生间的同层或下一层修建污水泵房，在污水泵房内设污水集 水池，收集污水，再经过污水泵排出。 根据《建筑给水排水设计规范》规定，污水池有效容积不宜小于最大一台污水泵 5 分钟出水量，污水泵每小时不超过 6 次启动，污水池一般比较大。 A sewage pump house should be constructed on the same or lower level as the restroom. This facility contains a sewage collection tank that collects wastewater and discharges it through pumps. According to the "Code for Design of Water Supply and Drainage in Buildings", the effective capacity of the sewage tank must not be less than five minutes' output from the largest pump. Each pump is designed for no more than six startups per hour, and these tanks are typically large in size.	不雷修建污水集水池，污水直接进入集水箱内，再通过污水泵排 出，只需保证集水箱的进入口低于污水源水管即可。 参照 EN-12056-2,集水箱的有效容积仅为同条件污水池的 1/60 左 右，集水箱的作用不再是蓄水，而是“过滤”。 In the sewage collection system, wastewater flows directly into the collection tank and is then discharged through a sewage pump. The key requirement is to ensure the inlet of the collection tank is positioned below the sewage source pipe. According to EN-12056-2 standards, the effective capacity of the collection tank is approximately 1/60 of that of a conventional sewage tank under identical conditions. The primary function of the collection tank has shifted from water storage to filtration.
运营维护方便 Easy to operate and maintain	水池需定期清掏：污水泵长浸于污水池内，不仅受到污水腐蚀、 而且维护条件差，影响环境卫生。 The pool needs to be cleaned regularly: the sewage pump is immersed in the sewage pool for a long time, which is not only affected by sewage corrosion, but also affects environmental health due to poor maintenance conditions.	集水箱基本不需要清淘：水泵干式，易于清洁维护和保养或者内 置式水泵安装，污水及时排走，避免长时间浸泡。 The water tank basically does not need to be cleaned: the pump is dry, easy to clean and maintain, or the internal pump is installed, so that the sewage can be discharged in time to avoid long-term soaking.
卫生条件好 Good sanitary conditions	污水池无法密闭，污水在污水池内停留时间长，异味外溢和蚊姆 细菌滋生，影响环境卫生及舒适度。 The sewage pool is not closed, the sewage stays in the sewage pool for a long time, and the odor overflows and mosquitoes and bacteria breed, which affects the environmental health and comfort.	设备密闭，仅通过通气口与室外想通，泵房环境卫生，基本无异味 ， The equipment is closed and only communicates with the outdoor through the ventilation port. The pump room is clean and hygienic, and there is basically no odor.
反冲洗功能 Anti-flushing function	没有。No	两台泵相互反冲选，防止水泵意外堵塞，降低设备维护成本。 The two pumps are selected to back up each other to prevent accidental blockage of the pump and reduce equipment maintenance costs.
占地小，节省土建投资，安装简便 Small footprint, save civil engineering investment, easy installation	为了符合《建筑给水排水设计规范》,污水池和污水泵房占地面 积很大，建设工期长，土建投资大。 In order to meet the "Code for Design of Building Water Supply and Drainage", the sewage tank and sewage pump house occupy a large floor area, construction period is long, civil engineering investment is large.	无需设置土建污水池，土建投资少，占地小，设备结构紧凑，安 装快捷简便。 There is no need to set up a civil sewage tank, the civil construction investment is small, the area is small, the equipment structure is compact, and the installation is quick and simple.

供水变频控制柜 Water supply frequency conversion control cabinet

◆ 产品简介 Product Introduction

变频控制柜是技术人员充分吸收国内外水泵控制的先进经验,经过多年生产和应用，不断完善优化后，精心设计制作而成。

The frequency conversion control cabinet is carefully designed and made by technicians after absorbing the advanced experience of domestic and foreign water pump control, and constantly improving and optimizing after years of production and application.

变频控制柜产品具有过载、短路、缺相保护以及泵体漏水，电机超温及漏电等多种保护功能及齐全的状态显示，并 具备单泵及多泵控制工作模式，多种主备泵切换方式及各类 起动方式。可广泛适用于工农业生产及各类建筑的给水、排水、消防、喷淋管网增压以及暖通空调冷热水循环等多种场合的自动控制。

The frequency conversion control cabinet features comprehensive protection functions including overload, short-circuit, and phase loss detection, along with water leakage in pump bodies, motor overheating, and electrical leakage monitoring. It provides complete status display and supports single/pump control modes, multiple master/backup pump switching mechanisms, and various startup methods. This system is widely applicable for automatic control in industrial and agricultural production, as well as building applications such as water supply, drainage, fire protection, sprinkler network pressurization, and HVAC hot/cold water circulation systems.

变频控制柜内在质量优良，外形美观耐用，安装操作方便，是各类水泵安全可靠的伴侣。

The variable frequency control cabinet has excellent internal quality, beautiful appearance and durable, and is convenient for installation and operation. It is a safe and reliable companion for all kinds of water pumps.

◆ 产品优势 product superiority

1、节约能源 Save energy

变频器控制电机与传统控制的电机比较，能源节约是最有实际意义的，根据注水量、输油量需求 来供给的电机工况是经济的运行状，即可节电 48.8%。

Compared with the motor controlled by traditional control, energy saving is the most practical significance of frequency converter control motor. The operating condition of the motor supplied according to the demand of water injection and oil transmission is economical operation, which can save 48.8% of electricity.

2、运行成本降低 Reduced operating costs

传统电机的运行成本由三项组成：初始采购成本、维护成本和能源成本。其中能源成本大约占电机运行成本的 77%。通过能源成本降低 44.3%,再加上变频起动后对设备的冲击减少，维护和维修量也跟随降低，所以运行成本将大大降低。

The operational costs of traditional motors consist of three components: initial procurement costs, maintenance expenses, and energy costs. Notably, energy costs account for approximately 77% of total motor operation expenses. By reducing energy costs by 44.3%, combined with decreased equipment stress during variable frequency startup and reduced maintenance requirements, the overall operating costs can be significantly lowered.

3、提高压力控制精度 Improve the precision of pressure control

变频控制系统具有精确的压力控制能力。使电机的压力输出与系统所需的注水量相匹配。变频控制电机的输出量随着电机转速的改变而改变。由于变频控制电机速度的精度提高，所以它可以使管网的系统压力变化保持在 3pisg 变化范围，也就是 0.2bar 范围内，有效地提高了工况的质量。

The variable frequency control system delivers precise pressure regulation, ensuring motor output matches the required water injection volume. The motor's output is dynamically adjusted according to rotational speed variations. With enhanced speed control accuracy, the system maintains pipeline pressure fluctuations within a 3psig (0.2bar) range, significantly improving operational efficiency and maintaining stable system performance.

4、延长电机的使用寿命 Extend the service life of the motor

变频器从 0HZ 起动电机，它的起动加速时间可以调整，从而减少起动时对电机的电器部件和机械部件所造成的冲击，增强系统的可靠性，使电机的使用寿命延长。此外，变频控制能够减少机组起动时电流波动，这一波动电流会影响电网和其它设备的用电，变频器能够有效的将起动电流的峰值减少到最低程度。

The frequency converter starts the motor from 0HZ, with adjustable acceleration time during startup. This reduces mechanical and electrical component impacts on the motor during initial operation, enhancing system reliability and extending motor lifespan.

In addition, frequency conversion control can reduce the current fluctuation when the unit starts, which will affect the power consumption of the grid and other equipment. The frequency converter can effectively reduce the peak value of the starting current to a minimum.

5、低了电机的噪音 The noise of the motor is reduced

根据电机的工况要求，安装变频调速后，电机运转速度明显减慢，因此有效地降了电机运行时的噪音。

According to the working condition requirements of the motor, after the installation of frequency conversion speed regulation, the motor speed is significantly slowed down, so the noise during the operation of the motor is effectively reduced.

◆ 功能介绍 Function Introduction

1、变频控制柜的电源切换与保护功能 Power switching and protection functions of frequency conversion control cabinet

变频控制柜通常设计有断路器元件，它连接着进线电源，可以帮助变频控制柜完成电路的通断操作，并能够在电路和变频器出现短路或过载时提供保护。此外变频柜还可以在电机维护时切断电源保证操作人员安全。

Frequency converter control cabinets are typically equipped with circuit breakers that connect to the incoming power supply. These components enable the cabinet to perform on/off operations in circuits and provide protection against short circuits or overloads in both circuits and frequency converters. Additionally, the cabinets can cut off power during motor maintenance to ensure operator safety.

2、变频控制柜的变频调速功能 Frequency conversion control cabinet frequency conversion speed control function

变频控制柜的控制面板上设置有变频调速用的电位器，可以根据操作人员的输出频率，向电机输送指令信号，控制电机的转速。变频控制柜中的部分产品设置有工频切换功能，以保证在变频器出现故障时， 通过自动控制回路将电动机切换回工频电源。

The control panel of the variable frequency drive (VFD) cabinet is equipped with a speed-adjusting potentiometer that sends command signals to the motor based on operator input frequency, thereby controlling its rotational speed. Some models in this cabinet feature a power frequency switching function, which automatically reconnects the motor to standard power supply through an emergency control circuit when the VFD malfunctions.

3、变频控制柜的直观控制功能 Intuitive control function of frequency conversion control cabinet

变频控制柜的柜体上设计有显示设备与操作面板，它与变频控制柜内部的电器元件相连，可以直观显示变频控制柜的运行状态，同时方便操作人员控制变频装置的运行，及对电机等被控制设备进行现场操作。变频控制柜的柜体上，还安装有各种仪器仪表及指示灯，例如电压表、电流表、频率表，及电源指示灯、报警指示灯、运行指示灯、工频指示灯等。变频控制柜的运行及操作状态，可以直接反应在各项仪表及指示灯上，实现对变频器工作状态的时时监测。

The cabinet housing of the variable frequency control system features display panels and an operation interface connected to internal electrical components. This integrated design provides clear operational status visualization while enabling operators to control frequency conversion devices and perform on-site adjustments to motor systems. The cabinet is equipped with various instruments including voltage meters, ammeters, frequency meters, along with power status indicators, alarm signals, operational status indicators, and industrial frequency (50Hz) operation indicators. All operational parameters are directly reflected through these visual displays, allowing real-time monitoring of the frequency converter's performance status.

4、变频控制柜的安全防护功能 Safety protection function of frequency conversion control cabinet

变频控制柜将各种包括变频器在内的各种电气元件都集中在柜体内，这样可以减少外部环境对电气元件的影响程度，降低电气元件受环境污染的程度，也降低变频控制柜操作人员的触电危险，因此具有较好的安全防护效果。

The frequency conversion control cabinet concentrates all kinds of electrical components including frequency converters in the cabinet, which can reduce the impact of external environment on the electrical components, reduce the degree of environmental pollution to the electrical components, and reduce the risk of electric shock to the operators of the frequency conversion control cabinet, so it has a better safety protection effect.

◆ 控制类型 Type of control

1、液位控制：该控制柜配高性能 Key 浮球开关，根据液位的高、低变化，自动控制给排水泵的开、停。

2、压力控制：外接电接点压力表或压力控制器，可根据管网压力的变化自动开泵、关泵，大量应用于生活给水及消防增压系统。

3、温度控制：外接温度控制器，根据设定的温度范围开泵或关泵，应用于恒温、热交换系统 等需温度控制的场合。

4、时间控制：机箱面板设有时间设定按扭和显示器，用户可根据定时需要控制水泵的开启和关闭，适用于各种定时或有规律的间歇式工作方式的控制。

1. Level Control: This control cabinet is equipped with high-performance Key float switches that automatically activate or deactivate water supply/drainage pumps based on liquid level fluctuations.

2. Pressure Control: Connects to external contact pressure gauges or controllers to automatically start/stop pumps according to pipeline pressure changes, widely used in domestic water supply and fire protection pressurization systems.

3.Temperature Control: Connects to external temperature controllers to activate/deactivate pumps within preset temperature ranges, suitable for constant temperature control and heat exchange systems requiring temperature regulation

4. Time Control: The cabinet panel features a time-setting button and display, allowing users to control pump operation through scheduled timing. This system is ideal for various timed or periodic intermittent work modes.