
wilo
威乐
智能截流井系统解决方案
Wilo Intelligent Interception Well System

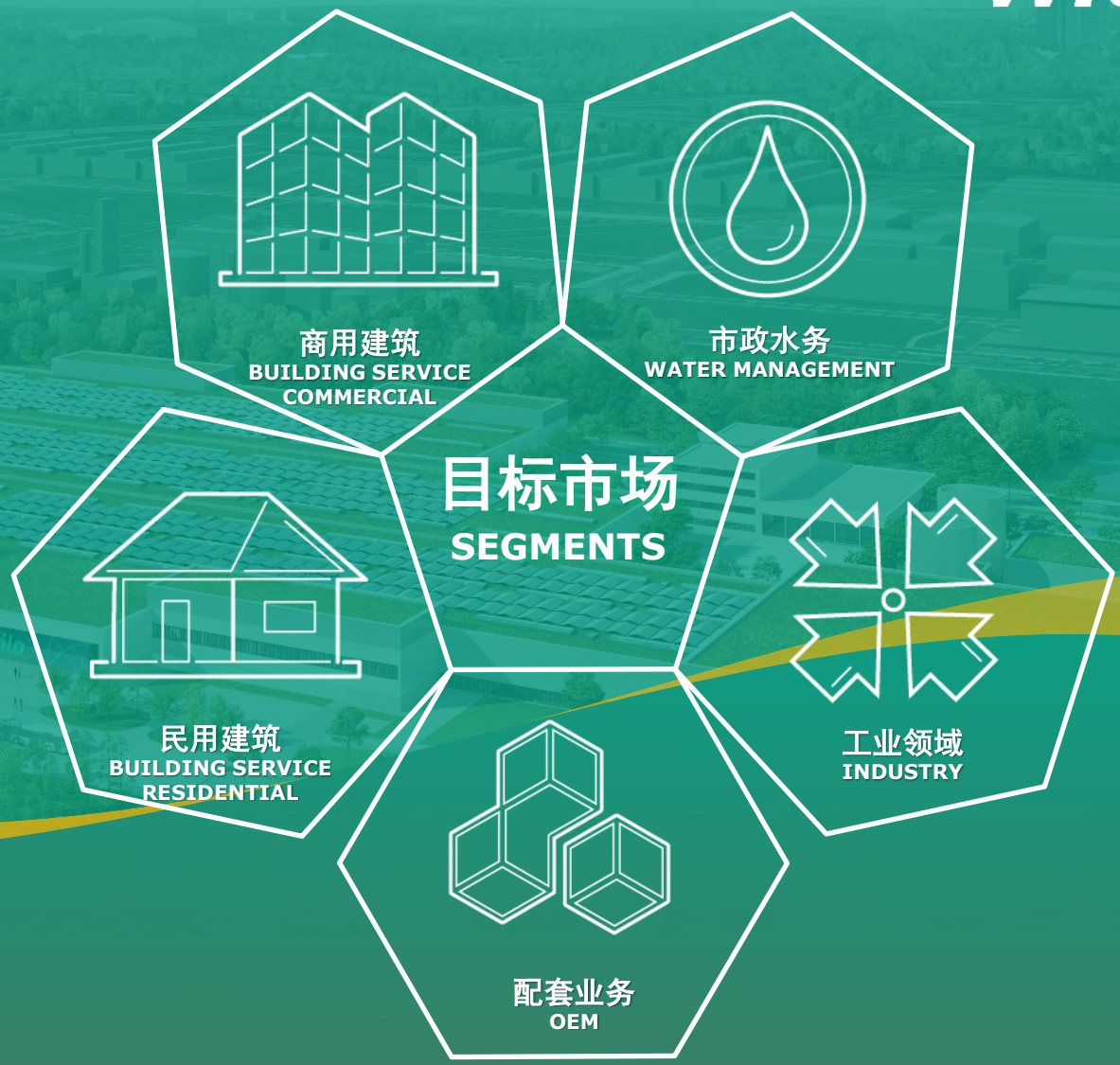
威乐集团简介
About Wilo

威乐集团是**全球领先的优质水泵及水泵系统供应商**之一，广泛的产品线主要应用于建筑服务、水务管理和工业领域中。

Wilo Group is one of the world's leading suppliers of high-quality pumps and pump systems with a broad product range for building services, water management and industry.

威乐智能解决方案，可成功实现人、产品和服务之间的连接。威乐集团始终致力于成为行业**数字化先锋**，现已在全球范围内拥有近8200名员工。

Wilo intelligent solutions that successfully connect people, products and services. Wilo Group has always strived to be a digital pioneer in the industry and now employs nearly 8,200 people worldwide.



百年威乐 - 传承与创新
150 YEARS OF WILO

CASPAR LUDWIG OPLÄNDER

LOUIS OPLÄNDER

WILHELM OPLÄNDER

ING. H.C. JOCHEN OPLÄNDER 博士

OLIVER HERMES

1872

在德国创建，立志帮助人们改善供水条件

Founder of Wilo, Determined to help people improve water supply conditions

1928

全世界第一台暖通循环增压泵

The world's first HVAC booster pump

1972

威乐建立第一家子公司开启全球化进程

Established the first international subsidiary

1995

威乐进入中国市场

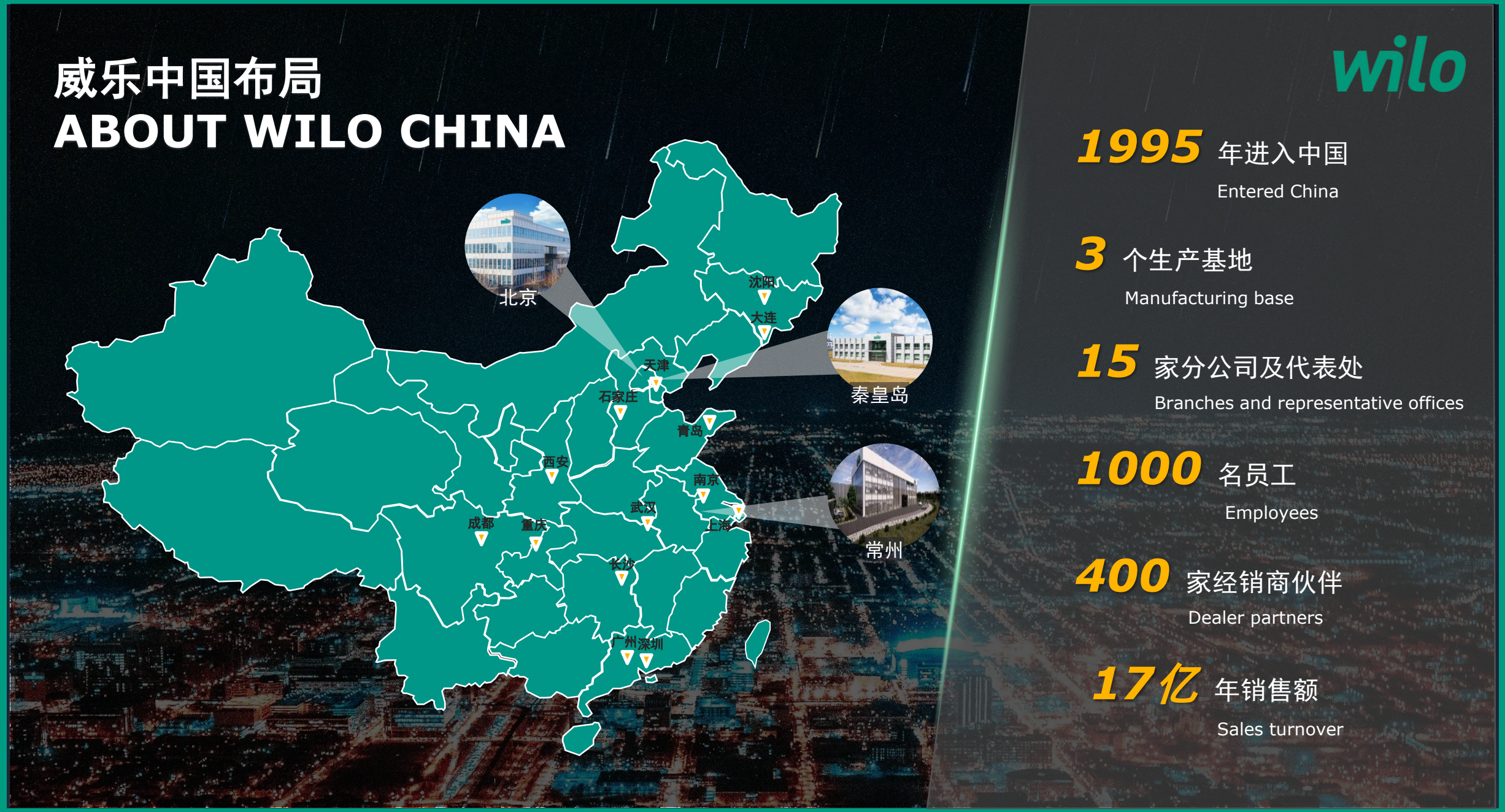
Wilo entered China market

2021

德国多特蒙德总部WiloPark建成开启智能生产与服务新时代

The Industry 4.0 factory: Wilopark founded in Dortmund.

威乐中国布局
ABOUT WILO CHINA



1995 年进入中国
Entered China

3 个生产基地
Manufacturing base

15 家分公司及代表处
Branches and representative offices

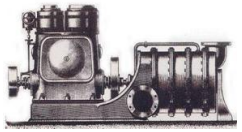
1000 名员工
Employees

400 家经销商伙伴
Dealer partners

17亿 年销售额
Sales turnover

威乐市政水务产品发展里程碑
HISTORY OF WILO WATER MANAGEMENT PRODUCTS

1875
研发第一台离心叶轮和涡轮泵(Mather+Platt)
The first centrifugal impeller and turbopump



1949
第一台深井泵投入生产
The first borehole pump

1995
WILO-EMU TR
全球第一台三叶片低转速高效推流器
The first 3-blade high-efficiency mixer

1997
Wilo-EMU Ceram
威乐水泵技术中的首款双组分涂层
The first two-component coating in Wilo

ceram protected

2001
WILO-EMU FA
全球第一台集成了密封冷却系统的潜污泵
The first submersible sewage pump with seal cooling system

2002
Wilo-EMUport 固液分离污水泵站 – 用于污水输送的创新且经济解决方案
Wilo-EMUport pump station – an innovative and economical solution for wastewater transport

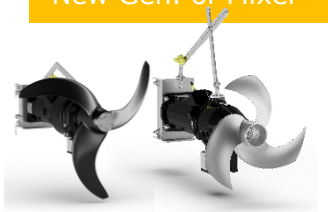
2005
Wilo-EMU KM + NU
采用 CoolAct 技术的潜水深井泵
Borehole pump with CoolAct technology

coolact

2014
Wilo-Sevio AIR
Wilo-EMU TRE
污水处理的高效系统

2018
Wilo-Rexa SOLID-Q
开创智能污水泵新时代
Smart Sewage pump

2022
威乐新一代搅拌器
Wilo-Flumen TR(E)
New Gen. of Mixer



Pioneering for You

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Wilo Whitepaper Edition 01/21

Intelligent waste water systems: the smart response

The challenges of the future have long since arrived in the planning and operation of sewage pumping stations, in the form of new framework conditions and circumstances that make the life cycle from planning to maintenance and repair, operation and further development of the systems an increasingly demanding task.

Four problems in particular (sewage quality, extreme weather phenomena, compatibility and a shortage of skilled workers) call for new solutions in sewage management today. The challenges themselves are nothing new. However, what is new is the speed at which they are becoming increasingly noticeable. So it's high time that we examine these questions in more detail and look into the answers that smart, networked pump technology can already provide today.

The top 4 challenges in waste water management:

Sewage quality
Extreme weather
Compatibility
Shortage of specialists

Sewage quality: The amount of solids in sewage is continually increasing. We don't know the cause of this but at the moment we can't make a difference when it comes to fibre residues, e.g. from the increased use of wet wipes[1] or people throwing non-woven tissues down the toilet and reduced sewage quantities due to water-saving measures[2] and this makes the transport fluid slower, more aggressive, more problematic and increasingly difficult to process. All across Europe, over 380,000 tonnes of wet wipes are not thrown away properly each year.[3] Outdated systems in particular are reaching their limits, and pump malfunctions and failures are unavoidable here. This results in high maintenance costs, poor energy efficiency and malfunction repairs up to system failure.[4]

→ **Extreme weather:** Never-before-seen weather patterns present challenges to the sewage management as current systems are usually inadequately designed to handle this. This includes long dry periods, during which too little of the transport fluid is available, followed by heavy periods of rainfall, where suddenly occurring large water masses must be reliably processed. In North Rhine-Westphalia, for example, the state government speaks of an increase in heavy rainfall events since 1950, which is not classified as significant due to the high variability of precipitation data. Nevertheless, in their "Konzept Starkregen" ("Heavy Rainfall Concept") from 2016, the responsible ministries assume that these kinds of events are actually on the rise: "According to current climate projections up to 2050, this trend is likely to continue in the future."[5]

[1] Cf. Sator, M. (2019): Sieben Sichtweisen auf die Feuchttuch-Problematik (Seven Perspectives on the Wet Wipe Problem), P. 34.
[2] Cf. Umweltbundesamt (German Federal Environmental Agency) (2014): Wassersparen in Privathaushalten: sinnvoll, ausgereizt, übertrieben? (Saving Water in Private Households: Sensible, Exhausted, Exaggerated?), P. 5 and P. 39.
[3] https://www.edana.org/nw-related-industry/nonwovens-markets, accessed on 03.06.2020
[4] Cf. Sator, M. (2019): Sieben Sichtweisen auf die Feuchttuch-Problematik (Seven Perspectives on the Wet Wipe Problem), P. 36.
[5] https://www.umwelt.nrw.de/fileadmin/redaktion/PDFs/klima/starkregen_konzept.pdf, accessed on 03.06.2020

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德国废水管理4.0-废水管理面临的四大挑战
Intelligent wastewater systems 4.0 – Four key challenges for wastewater management.

废水水质
Sewage quality

极端天气频发
Extreme weather

系统兼容性
Compatibility

专业人士短缺
Shortage of Specialists

Our Solution

48%

与具有类似运行可靠性的涡流系统相比较，大幅降低系统管网损失*

Significantly lower system network losses compared to eddy current systems with similar operational reliability*

20%

凭借Nexos LSI高效控制器减少管道摩擦损失，从而最大程度地节省额外能源

Reduce pipe friction losses with the Nexos LSI High Efficiency Controller to maximize additional energy savings

The 1st

污水泵带有集成以太网接口和全图形网络接口，用于泵监测和控制

Integrated Ethernet interface and a full graphical network interface for pump monitoring and control

NEXOS INTELLIGENCE

Wilo-Rexa SOLID-Q

智能潜水污水泵

Wilo-Rexa SOLID-Q

Wilo-DDI:
集成芯片及网络服务器；阻塞反转；
智能判断转速；多泵互联

Wilo-DDI:
Integrated chip and network server; Clogging reversal; Intelligent judgment of rotational speed; Multi-pump interconnection

超高效电机:
电机能效等级高达IE5*
支持干式和湿式安装

Ultra-efficient motors:
Motor efficiency class up to IE5*
Supports both dry and wet installations

最新一代Solid-Q水利模型:
自清洁功能
超高效率

New SOLID-Q Hydraulics
Self-Cleaning features
Ultra-efficiency

*(Following IEC/TS 60034-30-2)

Wilo-Rexa SOLID-Q

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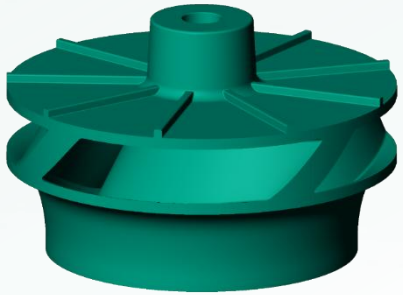
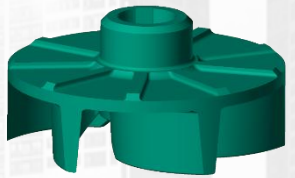
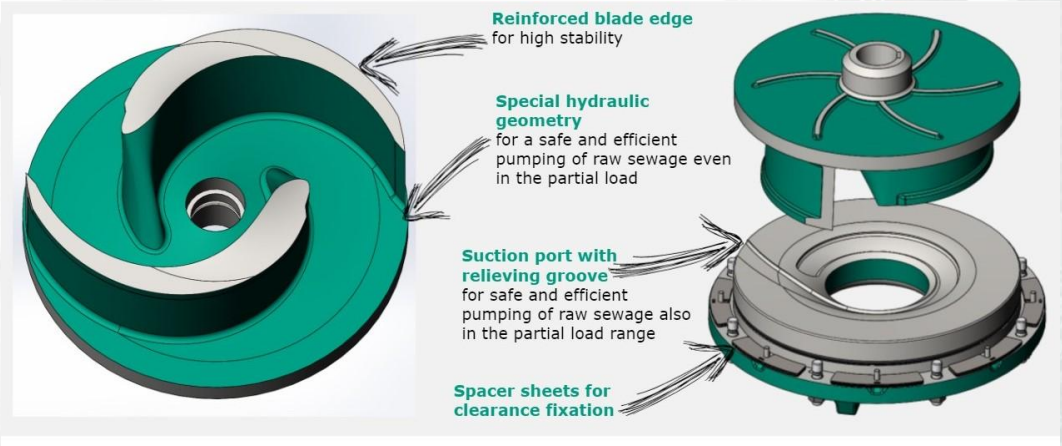




水利效率 Hydraulic efficiency

通过能力 Pass competence



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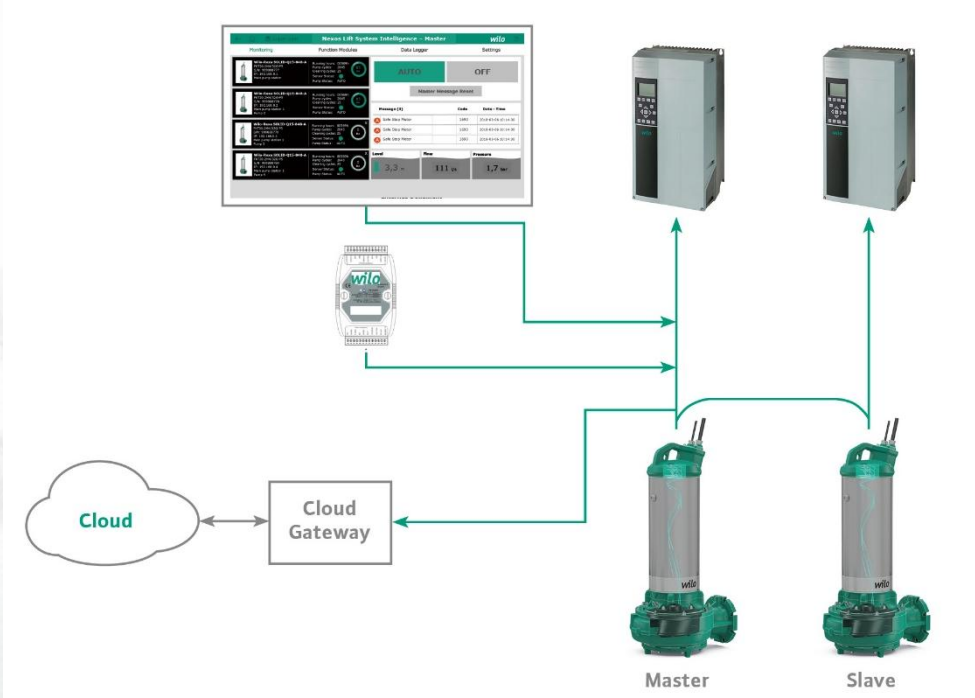
NEXOS INTELLIGENCE



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Wilo-EMUport IW 智能截流井 Interception Well

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产品优势 Advantages

施工快、抗渗漏、占地小、全智能自控程度高等优势。

Fast construction, anti-leakage, small land occupation, high degree of fully intelligent automatic control and others.

应用场景 Application

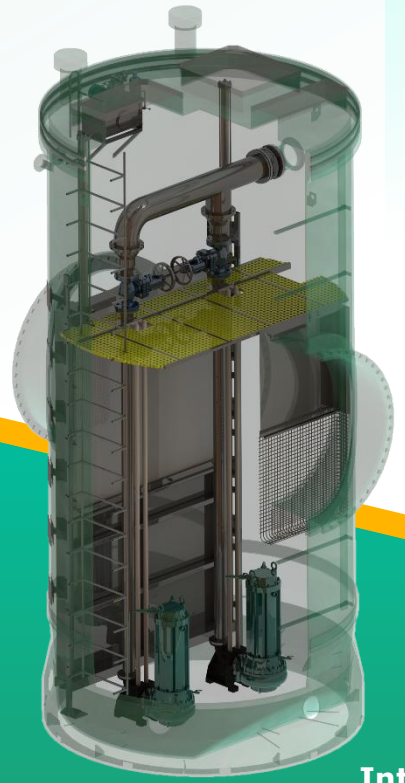
污水截流、雨污分流、初雨限流、汛期防倒灌

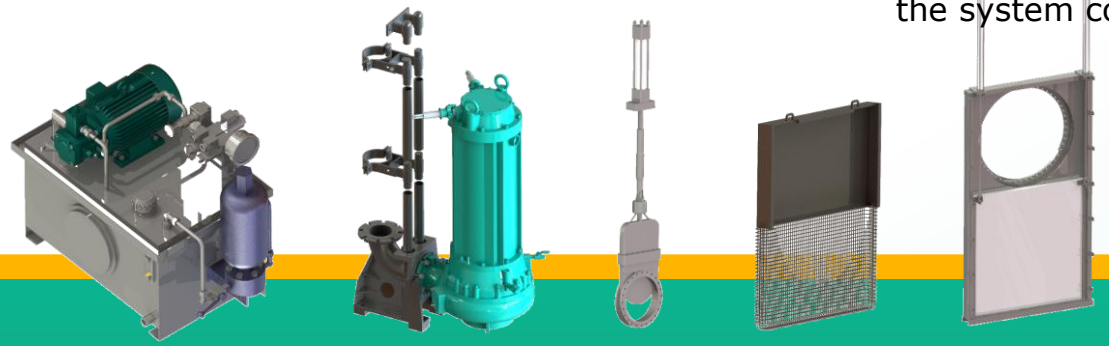
Sewage interception, rainwater diversion, initial rainfall flow restriction, flood season prevention.

技术参数 Parameters

外径尺寸与IPS一致，内部设备依据系统情况进行设计

The outer diameter size is consistent with the IPS, and the internal equipment is designed according to the system conditions.

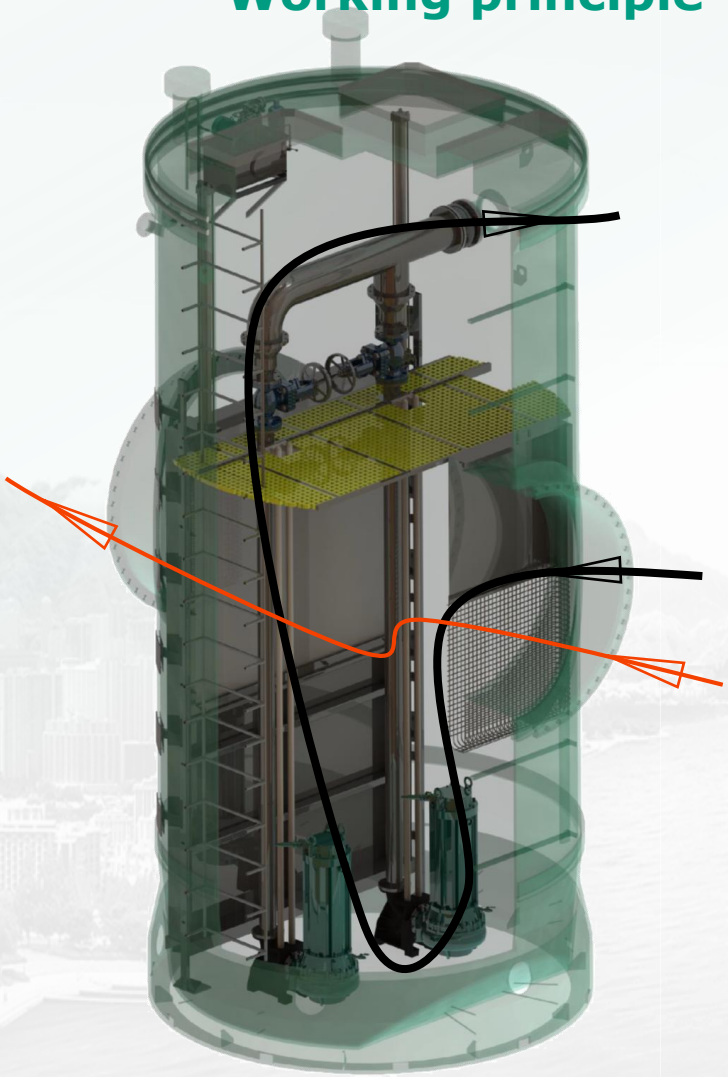




一体化压力流截流井
Integrated pressure flow interception well

一体化重力流截流井
Integrated gravity flow interception well

工作原理-压力式
Working principle - pressure flow



晴天时

Sunny

初雨时

Early rain phase

降雨中后期时

Late rain phase

管道内的污水通过潜污泵输送至污水管道，最终流向污水处理厂

The sewage in the pipeline is transported to the sewage pipeline through a submersible sewage pump and finally flows to the WWTP.

初期的地面雨水比较脏，这部分雨水仍然不可以进入河道。通过雨量计、液位计和浊度仪综合判断降雨情况，让脏的初期雨水进入污水管，最终输送至污水处理厂

The rainfall situation is comprehensively judged by rain gauge, level gauge and turbidity meter, and the dirty early rainwater is allowed to enter the sewage pipe and finally transported to the WWTP

降雨中后期时，雨水相对比较干净，通过排水口直接排入河道，减少雨水对污水网负荷，确保污水网正常运行

Rainwater is directly discharged into the river through the drainage outlet, reducing the load of rainwater on the sewage network.

工程实例 Reference

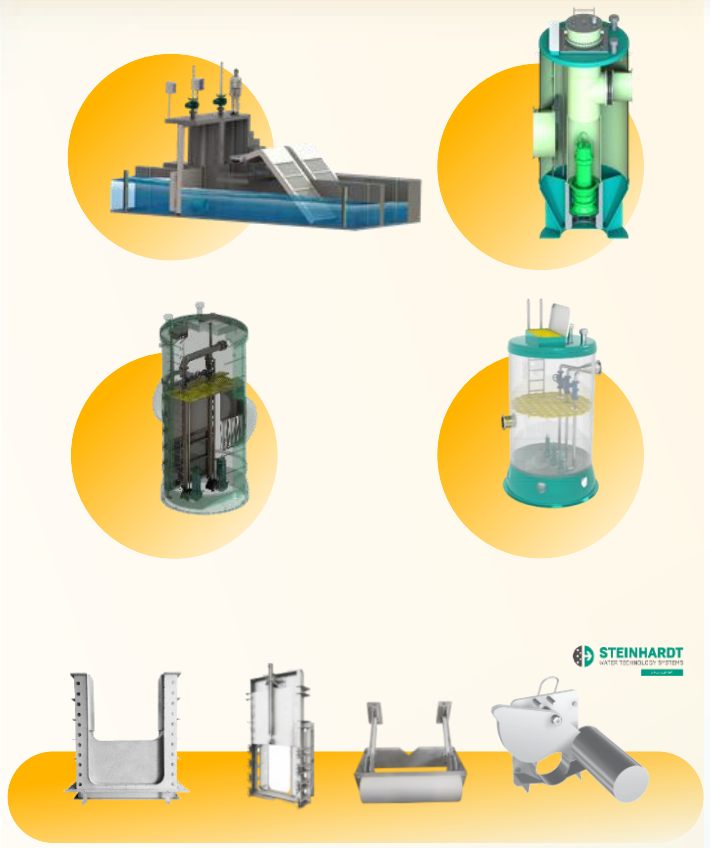
南宁市七一总干渠雨污综合改造提升工程

Wilo-EMUport IW in Nanning

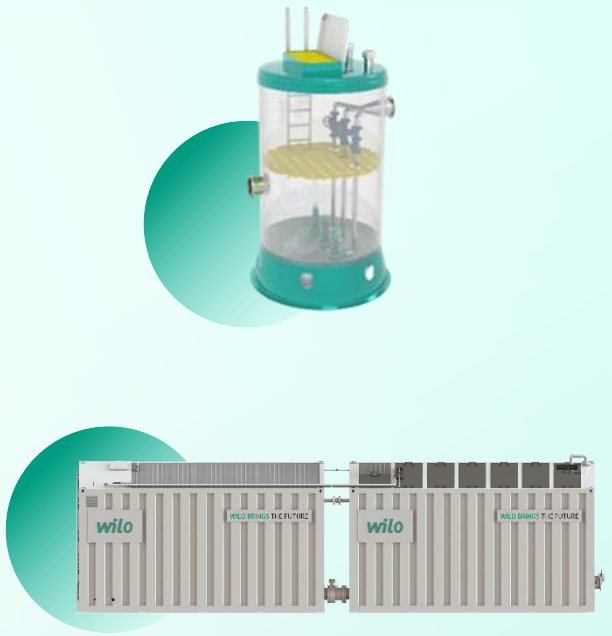
威乐水环境综合治理解决方案
WILO WATER GOVENANCE SOLUTIONS

防洪排涝 – Flood control

黑臭水体治理 - Odorous Water Treatment



农村污水 – Rural Wastewater Treatment



工程实例 References

上海浦东新区农村污水管网改造工程

湖北武汉汤逊湖流域治理项目

广西南宁雨污综合改造提升工程

湖北鄂州新港大道项目

宁波慈城古县城海绵城市综合整治工程

广东佛山里水河流域综合治理工程

威乐助力中国水环境综合治理

共创 绿水青山，鱼翔浅底 的美好生活

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威乐 让每一滴水更有价值

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