追 求 卓 越　　智 造 精 品

Strive for excellence / Craft quality products

福士德锅炉

福士德锅炉有限公司

FIRSTD BOILER CO.,ltd

Toll-free: 400-180-1966

E-mail: fsdgl@163.com

Website: www.firstdboiler.com
www.cnfirstdboiler.com
www.frstd.com

服务更专业更贴心

24小时服务专线 400-180-1966

FIRSTD BOILER | 福士德锅炉

详情请访问 www.frstd.com

For more information, please visit www.frstd.com

蒸汽锅炉产品手册 / STEAM BOILER / PRODUCT MANUAL

FIRSTD BOILER

- SZS系列燃油气蒸汽水管锅炉
  SZS Series Fuel Gas Steam Water Pipe Boilers
- WNS系列超低氮燃油气蒸汽锅炉
  WNS Series Ultra-Low Nitrogen Fuel Gas Steam Boilers
- WNS系列空预一体燃油气蒸汽锅炉
  WNS Series Integrated Air Preheating Fuel Gas Steam Boilers
- SF系列水冷丰能管蒸汽锅炉
  SF Series Water-Cooled High- Efficiency Tube Steam Boilers
- S系列水冷全预混低氮蒸汽发生器
  S-Series Water-Cooled Fully Premixed Low-Nitrogen Steam Generators

新能源集成方案专家 >>>

EXPERT IN NEW ENERGY INTEGRATION SOLUTIONS

关于福士德 ABOUT FIRSTD >>>

福士德锅炉有限公司是一家专业研发、制造节能环保锅炉的高新技术企业，作为绿智低碳能源集成运营服务商的福士德锅炉拥有标准的现代化生产基地，先进的自动化锅炉生产设备；公司注册资金1.02亿元，现为国家A级锅炉、压力容器制造单位，拥有国家A级安装改造维修资质和GC2工业管道安装资质，通过了ISO9001质量管理体系、ISO14001环境管理体系、ISO45001职业健康安全管理体系认证，入围《国家工业节能技术装备推荐目录》及《“能效之星”产品目录》，拥有专业的技术及精湛的工艺。

福士德锅炉有限公司主要生产燃（油）气SZS系列水管蒸汽锅炉、水管热水锅炉；烟气深度冷凝系统（深冷器）；内核三段式垃圾焚烧炉；WNS系列冷凝蒸汽、热水、真空锅炉；F系列卡能管低氮真空、热水锅炉；S系列水冷蒸汽、热水、真空锅炉、蒸汽发生器；D系列全预混低氮铸铝、全预混不锈钢冷凝锅炉、全预混商用热水机组及电加热系列蒸汽、蒸汽发生器、热水、真空、开水锅炉、高压电极锅炉；FSD全预混燃烧器和FSD双贫氧燃烧器等产品，产品热效率高、烟温低、配置高，主要辅机、配件均为原装进口或合资品牌，福士德锅炉的PLC控制系统可为客户实现集中和远程监测。福士德锅炉的远程监测系统，可以为客户实时提供增值服务，通过画面组态将锅炉的运行数据以生动形象的方式展现给客户。

福士德锅炉有限公司研发中心通过反复测试、实验，设计合理的炉膛结构和尺寸，匹配全进口和自主品牌低氮燃烧器，使用全预混、FGR烟气再循环、FIR双贫氧内循环燃烧技术，加上自主研发的PLC控制系统，使锅炉运行更加节能环保、安全可靠。通过测试数据显示，锅炉的NOx排放浓度可降至30mg/m³以下。

福士德锅炉有限公司已在国内各省市地区形成了拥有300多家合作经销商的销售网络，在全国各地区设置了百余个24小时全天候售后网点，本公司产品有中国平安财险股份有限公司予以担保，有效解除客户的后顾之忧。

福士德锅炉有限公司将继续以造福世界、以士为本、厚德载物为公司理念，为客户创造价值，提供更优质的技术、产品和服务。

Firstd Boiler Co., Ltd. is a high-tech enterprise specializing in the R&D and manufacturing of energy-saving and environmentally friendly boilers. As a green, intelligent and low-carbon energy integration and operation service provider, Firstd Boiler is equipped with a standardized modern production base and advanced automated boiler production equipment. With a registered capital of 102 million yuan, the company is a national Grade A boiler and pressure vessel manufacturer, possessing national Grade A installation, renovation, and maintenance qualifications as well as GC2 industrial pipeline installation qualifications. It has been certified for ISO 9001 Quality Management System, ISO 14001 Environmental Management System, and ISO 45001 Occupational Health And Safety Management System. The company has been included in the National Industrial Energy-Saving Technology and Equipment Recommendation Catalogue and the "Energy Efficiency Star" Product Catalogue, demonstrating its professional technology and exquisite craftsmanship.

Firstd Boiler Co., Ltd. mainly manufactures the following products: fuel gas SZS series water pipe steam boilers, water pipe hot water boilers, flue gas deep condensation systems (deep coolers), three-stage core waste incinerators, WNS series condensing steam, hot water and vacuum boilers, F series high-efficiency tube low-nitrogen vacuum and hot water boilers, S series water-cooled steam, hot water and vacuum boilers, as well as steam generators, D series fully premixed low-nitrogen cast aluminum boilers, fully premixed stainless steel condensing boilers, fully premixed commercial hot water units, electric heating series steam boilers, steam generators, hot water boilers, vacuum boilers, water boilers and high-voltage electrode boilers, and FSD fully premixed burners and FSD double lean-oxygen burners.. These products feature high thermal efficiency, low flue gas temperature and high configuration. All key auxiliary machines and accessories are originally imported or from joint-venture brands. Firstd Boiler's PLC control system enables centralized and remote monitoring for customers. Firstd Boiler's remote monitoring system provides real-time value-added services for customers, and vividly displays boiler operation data to customers through screen configuration.

The R&D center of Firstd Boiler Co., Ltd. has designed a reasonable furnace structure and dimensions through repeated testing and experimentation. It is equipped with fully imported and self-owned brand low-nitrogen burners, and adopts fully premixed technology, FGR (flue gas recirculation), and FIR (Flue gas Internal Recirculation) dual lean oxygen internal circulation combustion technology. Combined with the self-developed PLC control system, it ensures that the boiler operates with higher energy efficiency, better environmental performance, and enhanced safety and reliability. Test data shows that the NOx emission concentration of the boiler can be reduced to below 30 mg/m³.

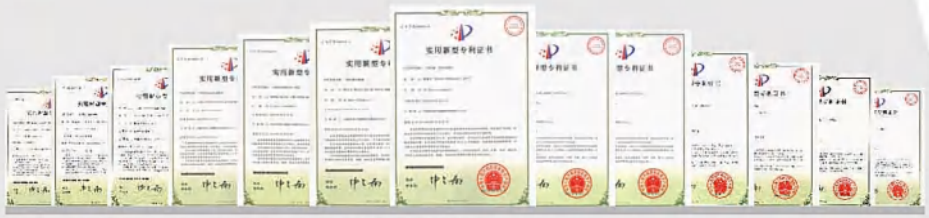
Firstd Boiler Co., Ltd. has established a sales network with over 300 cooperative dealers across various provinces and cities in China. Additionally, we have set up more than 100 24/7 after-sales service outlets throughout the country. Our products are guaranteed by Ping An Property and Casualty Insurance Company of China, Ltd., effectively eliminating any concerns customers may have.

Firstd Boiler Co., Ltd. will continue to uphold the corporate philosophy of Benefiting the World, People-oriented and Great Virtue Upholds All, creating value for customers, and providing superior technology, products, and services.

专业制造20年 打造冷凝、节能、低氮、环保锅炉

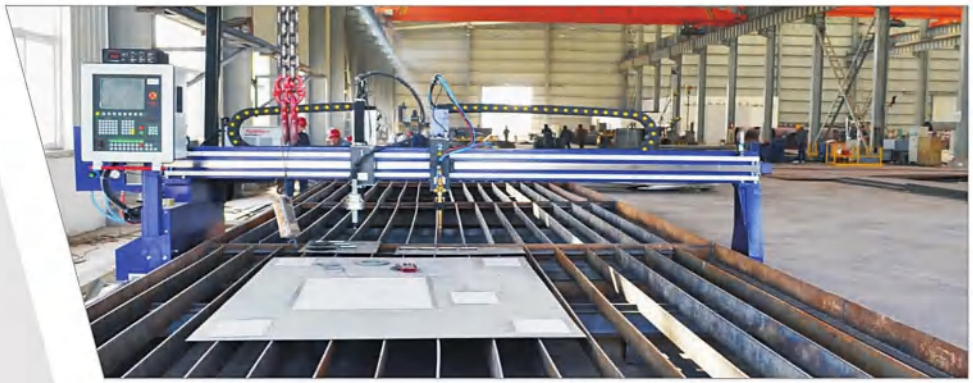
With 20 years of professional manufacturing experience,
we craft condensing, energy-saving, low-nitrogen, and environmentally friendly boilers.

资质/装备 >>>
EXCELLENT EQUIPMENT



现代化标准厂房+自动化锅炉生产设备+专业的技术及精湛的工艺
自科技为先，精益求精，为您打造专业的产品。

It boasts modern standard factory buildings and automated boiler production equipment.
With professional technology and exquisite craftsmanship, we prioritize science and technology, strive for excellence, and create professional products for you.



△数控等离子切割机 CNC Plasma Cutting Machine

△数控四辊卷板机CNC Four-Roller Plate Bending Machine

△埋弧自动焊 Automatic Submerged Arc Welding

△机器人焊接 Robot Welding

△激光焊接设备 Laser Welding Equipment

△自动管板焊 Automatic Tube-To-Sheet Welding

△膜式壁生产线 Membrane Wall Production Line

△热工测试平台 Thermal Engineering Testing Platform

科技智领未来

感受科技 + 铸就冷凝 · 节能 · 低氮 · 环保锅炉

实现「低碳」排放 共创美丽中国

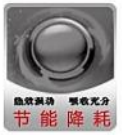
TECHNOLOGY LEADS THE FUTURE WITH INTELLIGENCE

Technology and craft a condensing, energy-saving, low-nitrogen, and environmentally friendly boiler

Achieve low-carbon emissions and jointly create a beautiful China

Reasonable design

Safe and reliable



Energy conservation and consumption reduction

Technological innovation

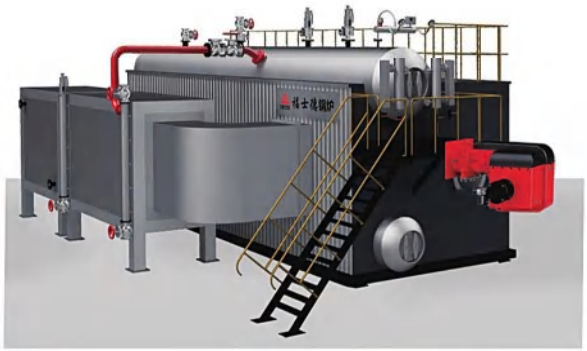
Standard production

Easy to operate

分体蒸汽锅炉
Split Steam Boilers

冷凝一体蒸汽锅炉
Integrated Condensing Steam Boilers

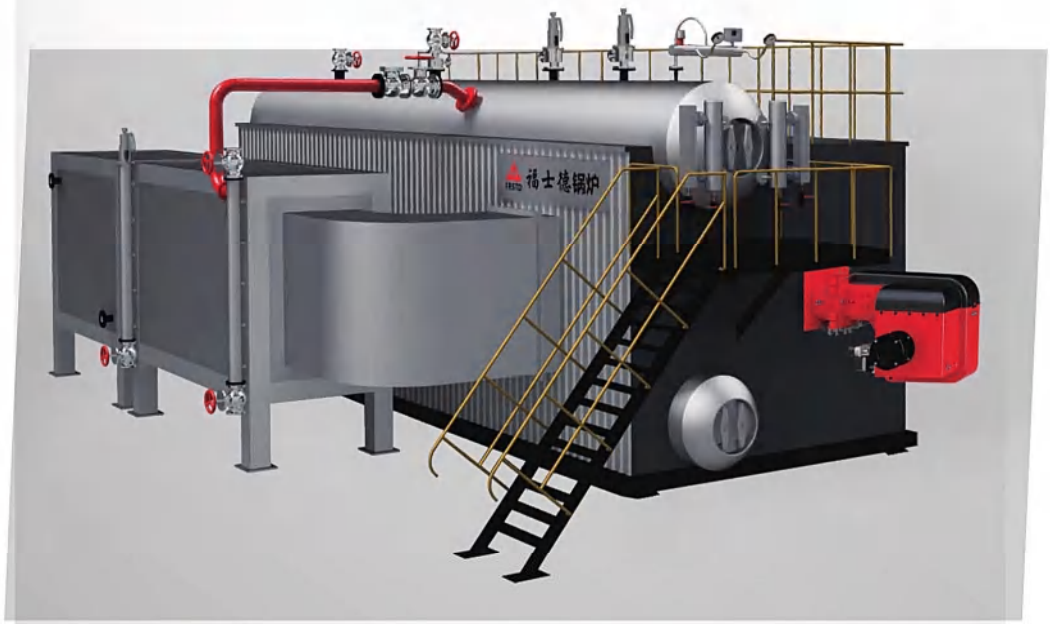
水冷丰能管蒸汽锅炉
Water-cooled High-efficiency Tube Steam Boilers



全自动燃油气蒸汽水管锅炉
Fully Automatic Fuel Steam Water Pipe Boilers

SZS系列 SZS SERIES

SZS系列燃油气蒸汽水管锅炉
SZS SERIES FUEL GAS STEAM WATER PIPE BOILERS



SZS(10～50)－(1.25/1.6/2.5/3.8)－Y.Q

FRSTD BOILER

SZS系列燃油气蒸汽水管锅炉的优势
Advantages of the SZS Series Fuel Gas Steam Water Pipe Boiler

先进的全自动智能控制系统
Advanced fully automatic intelligent control system

- 采用先进的控制技术，保证高可靠性的控制系统；
- 先进的机电一体化，全自动化锅炉控制技术；
- 可编程逻辑控制（PLC）技术群控或集控技术；
- 采用抗干扰性能强、寿命长、可靠性高的进口品牌控制元件；
- 全程采用三元（三冲量）锅炉水位控制；
- 符合欧洲标准的：蒸汽超压控制器自测试程序技术。

1.Adopt advanced control technology to ensure a highly reliable control system;
2.Advanced mechatronics and fully automated boiler control technology;
3.Programmable Logic Control (PLC) technology for group control or centralized control;
4.Imported control components with strong anti-interference performance, long service life, and high reliability are adopted;
5.The entire process adopts ternary (three-element) boiler water level control;
6.In line with European standards: steam overpressure controller self-testing program technology.

全中文、智能化、直观简捷的人机操作界面
Fully Chinese, intelligent, intuitive and user-friendly human-machine interface

- 全中文触摸屏为锅炉人机操作界面，全中文菜单显示，使锅炉监控简单化、条理化、智能化；
- 触摸屏可实时、动态地显示锅炉水位、压力、温度、燃烧火力、风机、水泵等运行状况，使锅炉运行状态一目了然；
- 各控制参数可在触摸屏上根据需要自由设定；
- 操作程序的多重窗口显示和丰富的在线帮助功能，提示操作人员如何进行下步操作。

1.The fully Chinese touch screen serves as the boiler's human-machine operation interface, featuring a fully Chinese menu display. It significantly simplifies, systematizes, and intelligizes boiler monitoring.
2.The touch screen can display the operating status of boiler water level, pressure, temperature, combustion heat, fan, water pump, etc. in real-time and dynamically, making the boiler operating status clear at a glance;
3.All control parameters can be freely set on the touch screen according to needs;
4.The operating program features multiple window displays and a comprehensive online help function, providing guidance to operators on how to proceed with the next step.

实现真正的全自动运行
Achieve truly fully automated operation

- 燃气泄漏程序的自动检测；
- 点火前的预吹扫炉膛、自动点火、火焰自动监控，燃烧故障报警与停机后吹扫炉膛；
- 三元给水自动调节，锅炉负荷的自动调节，保证长期稳定输出高品质的蒸汽；
- 温度、压力、水位、流量、氧含量的自动检测、控制和保护；

1.Automatic detection of gas leakage procedures;
2.Pre-ignition purging of the furnace, automatic ignition, automatic flame monitoring, combustion failure alarm, and post-shutdown purging of the furnace;
3.Automatic adjustment of ternary feedwater and boiler load ensures long-term stable output of high-quality steam;
4.Automatic detection, control, and protection of temperature, pressure, water level, flow rate, and oxygen content;

故障和历史记录
Fault and history records

- 自动记录当前故障发生的时间和原因；
- 累计记录总点火次数，风机、水泵和燃烧器运行时间；
- 自动绘制压力、温度等参数的曲线。

1.Automatically record the time and reason for the current fault occurrence;
2.Accumulate and record the total number of ignitions, as well as the operating hours of fans, water pumps, and burners;
3. Automatically plot curves for parameters such as pressure and temperature.

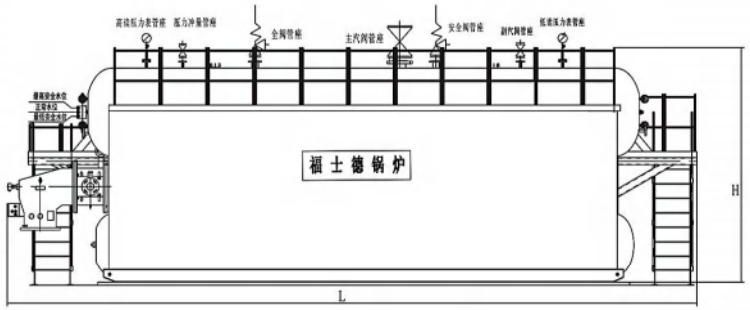
SZS系列燃油气蒸汽水管锅炉技术参数
TECHNICAL PARAMETERS OF SZS SERIES FUEL GAS STEAM WATER PIPE BOILER

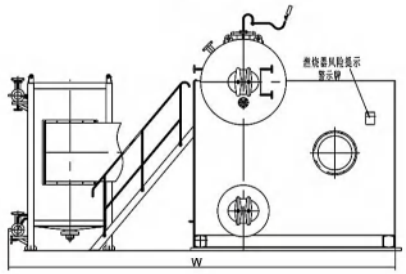
项目 /型号 Item/Model		SZS10	SZS20	SZS30	SZS40	SZS50
额定蒸发量 Rated evaporation capacity （t/h）		10	20	30	40	50
额定蒸汽压力 Rated steam pressure （MPa）		1.25/ 1.6/ 2.5				
过热蒸汽温度 Superheated steam temperature （℃）		250 - 450				
饱和蒸汽温度 Saturated steam temperature （℃）		194 （1.25 MPa） /204 （1.6 MPa） 225 （2.5 MPa）				
设计热效率 Designed thermal efficiency （%）		100-104	100-104	100-104	100-104	100-104
排烟温度 Exhaust gas temperature （℃）		70- 90	70- 90	70- 90	70- 90	70- 90
柴油耗量 Diesel consumption （Kg/h）		627.9	1274.3	1911.4	2548.5	3176.9
天然气耗量 Natural gas consumption （Nm^3/h）		658.9	1346.6	2019.9	2693.1	3203.2
煤气耗量 Gas consumption （Nm^3/h）		1298.6	2735	4102.6	5470.1	6509.7
电源 Power supply （V/ Hz）		380 /50	380/ 50	380/ 50	380/ 50	380/ 50
主蒸汽口Main steam outlet （mm）		DN150	DN150/ 200	DN200	DN200 /250	DN300
副蒸汽出口Auxiliary steam outlet （mm）		DN40				
给水口Water supply port （mm）		DN150	DN65	DN80	DN100	DN125/150
连续排污口 Continuous discharge outlet （mm）		DN40	DN40	DN50	DN50	DN50
外形尺寸 Overall dimensions (mm)	长L	7580	9720	10425	11940	14470
	宽W	3100	3655	3910	4020	5320
	高H	3700	4370	4397	4390	5570
重量Weight(T)		35	45	53.8	65.7	71.7
供气口Air supply port (mm)		根据供气压力定. According to the gas supply pressure				
安全阀 Safety valve	接口Interface （mm）	DN80	DN100	DN150	DN150	DN150
	泄放口Relief port （mm）	DN125	DN125	DN175	DN175	DN175

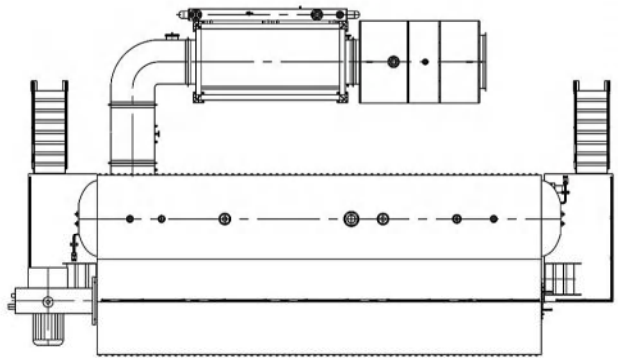
备注：1、燃料发热量按以下标准计算：柴油热值42900KJ/kg（即10248kcal/kg），天然气热值36000KJ/Nm^3(即8600kcal/Nm^3)，城市煤气16000KJ/Nm^3（即3800kcal/Nm^3）。
2、如气源为煤气，定货时请提供煤气热值，供气压力范围，海拔高度。
3、燃料耗量均为锅炉满负荷时耗量，根据工况不同，实际耗量将不同。
4、保留在不事先通知的情况下重新定义或更改产品信息的权利（包括外形、技术、内部结构）具体以提供图纸为准。

Note: 1. The calorific value of fuel is calculated according to the following standards: diesel has a calorific value of 42,900 KJ/kg (equivalent to 10,248 kcal/kg), natural gas has a calorific value of 36,000 KJ/Nm^3 (equivalent to 8,600 kcal/Nm^3), and city gas has a calorific value of 16,000 KJ/Nm^3 (equivalent to 3,800 kcal/Nm^3).
2. If the gas source is coal gas, please provide the calorific value of the coal gas, the range of gas supply pressure, and the altitude when placing the order.
3. The fuel consumption is the consumption at full load of the boiler, and the actual consumption may vary depending on different operating conditions.
4. We reserve the right to redefine or modify product information (including appearance, technology, and internal structure) without prior notice. Please refer to the provided drawings for specific details.

SZS系列燃油气蒸汽水管锅炉外型图
OUTLINE DRAWING OF SZS SERIES FUEL GAS STEAM WATER PIPE BOILER







WNS系列 WNS SERIES

超低氮冷凝一体FGR蒸汽锅炉
ULTRA-LOW NITROGEN CONDENSING INTEGRATED FGR STEAM BOILERS

冷凝器、节能器采用ND钢或钢铝复合翅片管制作，抗腐蚀性强，延长使用寿命。
The condenser and economizer are made of ND steel or steel-aluminum composite finned tubes, which have strong corrosion resistance and extend the service life.

锅筒内置极低水位保护系统，避免产生虚假水位，提高锅炉安全性。
The boiler drum is equipped with an ultra-low water level protection system to prevent false water levels and enhance boiler safety.

荣获国家专利的双开门烟箱及带D型铰链的烟箱门设计，结构简单，便于开启、运行和维修。
专利号:
ZL 2015 3 0330898.4
The double-door smoke chamber, which has been granted a national patent, and the smoke chamber door design with D-shaped hinge feature a simple structure that facilitates easy opening, operation, and maintenance.
Patent number:
ZL 2015 3 0330898.4.

特殊炉膛设计，配置节能器、冷凝器，使锅炉热效率≥98%。
The specially designed furnace, equipped with an economizer and a condenser, ensures a boiler thermal efficiency of ≥98%.

配套新型超低氮燃烧机，增加FGR烟气再循环系统，可有效降低氮氧化合物的排放，满足NOx排放量在30mg/m³以下。
Equipped with a new type of ultra-low nitrogen burner and an FGR (Flue Gas Recirculation) system, it can effectively reduce the emission of nitrogen oxides, ensuring that the NOx emission is below 30mg/m³

■WNS(1～20）-(1.25/1.6)-Y. Q

节能器、冷凝器
Economizer and Cond enser

专 利 设 计/高 效 节 能
Patented design /
High efficiency and energy saving

烟气再循环
FGR(Flue Gas Recirculation)

增加再循环系统
NOx排放量更低
With the addition of a recirculation system results in lower NOx emissions.

自主冷凝技术
Independent condensation technology

先进 / 节能 / 美观
耐用 / 降噪 / 环保
Advanced / Energy-saving /Aesthetically Pleasing
Durable / Noise reducing / Environmentally Friendly

非FGR烟气再循环
Non- FGR (Flue Gas Recirculation)

内部烟气再循环(FIR)技术,无FGR无风调节,无需担心烟气冷凝水对燃烧机的影响,更节能、高效、环保。
The flue gas internal recirculation (FIR) technology eliminates the need for flue gas recirculation (FGR) and air adjustment, thus eliminating concerns about the impact of flue gas condensate on the burner, making it more energy-efficient, efficient, and environmentally friendly.

感受科技＋低氮 环保 Nox的排放量低于30毫克

Technology + Low nitrogen/Environmental protection
NOx emissions of less than 30 mg.

福士德锅炉作为科技、节能、环保专家，根据北京锅炉大气污染物排放最新排放标准，开发并投放市场一体冷凝FGR烟气再循环系列锅炉。

FGR烟气再循环燃烧，将部分烟气与空气混合后送至燃烧室助燃，混合后的助燃风可以有效降低燃烧室内温度和氧量浓度。由于燃气与氧气的燃烧反应活化能，远远小于氧气与氮气的反应活化能，所以燃气首先与氧气发生燃烧反应。当氧气有剩余时，燃气才进行与氮气的反应生成NOx，但是较低的反应区温度使得与氮气的反应变得非常缓慢，从而有效抑制热力型NOx的生成。

福士德研发中心通过反复测试、实验，设计合理的炉膛结构和尺寸，匹配全进口低氮燃烧器，使用FGR烟气外循环燃烧技术，加上自主研发的PLC控制系统，使锅炉运行更加节能环保、安全可靠。通过测试数据显示，采用烟气再循环后锅炉的NOx排放浓度可降至30mg/m³(O_2=3.5%)以下。

福士德锅炉通过研发、生产一体冷凝烟气再循环系列锅炉，进一步将燃气锅炉低氮排放的环保水平提高到一个新高度，为适应市场多样性的变化，福士德公司正在研发、投放全预混系列低氮锅炉，为推动我国环保事业发展贡献一份力量。

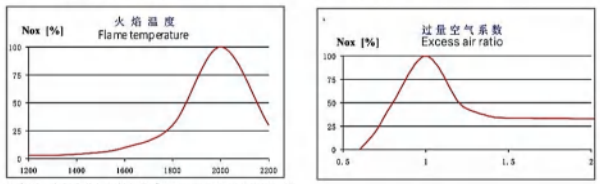
As an expert in technology, energy conservation, and environmental protection, Firstd Boiler has developed and launched the integrated condensing FGR flue gas recirculation series boiler on the market in accordance with the latest emission standards for atmospheric pollutants from boilers in Beijing.

FGR (Flue Gas Recirculation) combustion involves mixing a portion of flue gas with air and then feeding it into the combustion chamber to support combustion. The mixed combustion air can effectively reduce the temperature and oxygen concentration within the combustion chamber. Since the activation energy for the combustion reaction between fuel gas and oxygen is much lower than that between oxygen and nitrogen, the fuel gas reacts with oxygen first. Only when there is excess oxygen does the fuel gas react with nitrogen to generate NOx. However, the lower temperature in the reaction zone slows down the reaction with nitrogen, effectively inhibiting the formation of thermal NOx.

Through repeated testing and experimentation, the Firstd R&D Center has designed a reasonable furnace structure and dimensions, matched with fully imported low-nitrogen burners, and employed FGR flue gas external circulation combustion technology, coupled with its self-developed PLC control system, to make boiler operation more energy-efficient, environmentally friendly, safe, and reliable. Test data shows that the NOx emission concentration of the boiler can be reduced to below 30mg/m3 (O2=3.5%) after adopting flue gas recirculation.

Firstd Boiler has further elevated the environmental protection level of low-nitrogen emission gas boilers to a new height by developing and producing the integrated condensing flue gas recirculation series boilers. To adapt to the changes in market diversity, Firstd is currently developing and launching a fully premixed series of low-nitrogen boilers, contributing to the development of China's environmental protection cause.

对于NOx排放来源的分析： Analysis of NOx emission sources:



热力型：空气中的氮气被氧化成NOx；>1500℃的高温区域。
Thermal type: Nitrogen in the air is oxidized to NOx in a high-temperature zone of >1500℃.

WNS系列 WNS SERIES

冷凝一体式蒸汽锅炉
INTEGRATED CONDENSING STEAM BOILER

■WNS(1～20)－(1.25/1.6)－Y.Q

两级冷凝器
专 利 设 计
高 效 节 能

自主冷凝技术
先进 节能 美观
耐用 降噪 环保

波纹内胆
增加受热面积
缓解热胀冷缩

冷凝器换热组件采用ND钢或者钢铝复合翅片管制作，高抗腐蚀性，大幅吸收烟气热量，降低排烟温度。
锅炉分一次节能、二次冷凝，一体化安装设计，热效率超过100%。
节能器、冷凝器双级布置，烟气余热梯级利用，内部采用无切削挤压螺旋翅片管强化传热排烟温度更低，热效率更高。

1.The heat exchange components of the condenser are made of ND steel or steel-aluminum composite finned tubes, which exhibit high corrosion resistance, significantly absorb heat from flue gas, and reduce the exhaust gas temperature.
2.The boiler features primary energy saving, secondary condensing, and an integrated installation design, achieving a thermal efficiency exceeding 100%.
3.The economizer and condenser are arranged in a dual-stage configuration, allowing for cascade utilization of waste heat from flue gas. The interior utilizes non-cutting extruded spiral finned tubes to enhance heat transfer, resulting in lower exhaust gas temperature and higher thermal efficiency.

冷凝一体式蒸汽锅炉简介：
Introduction to integrated condensing steam boilers:

冷凝一体式蒸汽锅炉不同于普通锅炉，是由锅炉本体、一节能器和冷凝器有机的结合为整体而成的锅炉，该锅炉安装简便易行，空间占用小，热效率高。该系列锅炉的热效率通过独特的设计已达到充分发挥，有害物质的排放量更低。

炉胆采用全波纹炉胆结构，既增加了辐射传热面积，又满足了炉胆受高温辐射后自由膨胀的需要。低阻高效的螺纹管代替传统的光管以强化传热，提高热效率。前烟箱门采用对开独立式设计，既保证了烟箱的密封性，又保证了维修的便利性。

烟气余热回收部分采用了高效DN钢高频焊翅片管及钢铝复合螺旋翅片管换热，换热面充足，烟气侧系统阻力小，进一步提高了锅炉热效率。

冷凝一体式蒸汽锅炉优点
Advantages of integrated condensing steam boilers:

冷凝一体式蒸汽锅炉比传统的燃汽锅炉多了冷凝余热回收装置，通过吸收高温烟气余热加热冷水，从而提高了热转换效率，节约了能源费。加装冷凝器后的燃气锅炉热效率能大大提高。

冷凝一体式蒸汽锅炉运行时，大量高温烟气在排放过程中通过冷凝器时温度降低，一部分烟气中的水蒸气被冷凝为冷凝水从冷凝器的排污口排到锅炉房地沟，从而大大降低了烟气中污染物对空气的污染。

冷凝一体式蒸汽锅炉排烟余热梯级设计，排烟温度低充分提高锅炉热效率，将锅炉的热效率充分发挥。

特殊炉胆设计，燃料在炉胆内微正压燃烧，高温烟气沿波形炉胆进行辐射换热，向后至炉胆尾部折转180° 进入第二回程烟管，向前回流至前烟箱向上折转90° 进入节能器进行对流换热，然后由节能器再进入冷凝器，在其中对流换热，最后经烟囱排入大气。本系列锅炉结构紧凑合理，占地面积小，运行周期长，安装维修、运行操作方便。

The integrated condensing steam boiler differs from conventional boilers in that it is an organic combination of the boiler body, an economizer, and a condenser. This boiler is easy to install, occupies little space, and has high thermal efficiency. The thermal efficiency of this series of boilers has been fully optimized through unique design, resulting in lower emissions of harmful substances.

The furnace tube adopts a fully corrugated structure, which not only increases the radiative heat transfer area but also meets the needs of free expansion after being exposed to high-temperature radiation. Low-resistance and high-efficiency threaded tubes replace traditional smooth tubes to enhance heat transfer and improve thermal efficiency. The front smoke chamber door adopts a split and independent design, which ensures both the sealing performance of the smoke chamber and the convenience of maintenance.

The flue gas waste heat recovery section utilizes high-efficiency DN steel high-frequency welded finned tubes and steel-aluminum composite spiral finned tubes for heat exchange. The heat exchange surface is ample, and the flue gas side system resistance is low, further enhancing the boiler's thermal efficiency.

The integrated condensing steam boiler features a condensation waste heat recovery device, which is absent in traditional gas-fired boilers. By absorbing the waste heat from high-temperature flue gas to heat cold water, it enhances heat conversion efficiency and saves energy costs. The thermal efficiency of the gas boiler can be significantly improved after the installation of a condenser.

During the operation of the integrated condensing steam boiler, a large amount of high-temperature flue gas experiences a temperature drop when passing through the condenser during the emission process. A portion of the water vapor in the flue gas is condensed into condensate water, which is then discharged from the condensate discharge outlet of the condenser into the boiler room trench, thereby significantly reducing the air pollution caused by pollutants in the flue gas.

The cascade design of waste heat recovery from flue gas in the integrated condensing steam boiler ensures a low flue gas temperature, thereby significantly enhancing the boiler's thermal efficiency and maximizing its performance.

With a special furnace tube design, the fuel burns under micro-positive pressure inside the furnace tube. The high-temperature flue gas undergoes radiative heat transfer along the corrugated furnace tube, then turns 180 ° backward to the tail of the furnace and enters the second return flue tube. It flows back forward to the front smoke box, turns 90 ° upward, and enters the economizer for convective heat transfer. After passing through the economizer, it enters the condenser for convective heat transfer, and finally, it is discharged into the atmosphere through the chimney. This series of boilers has a compact and reasonable structure, occupies a small area, has a long operating cycle, and is convenient for installation, maintenance and operation.

WNS系列 WNS SERIES

空预一体燃油气蒸汽锅炉
INTEGRATED AIR PREHEATING FUEL GAS STEAM BOILERS

■WNS(4～25)-(1.25/1.6)-Y.Q

FIRSTD BOILER

空预一体燃油气蒸汽锅炉简介
Introduction to integrated air preheating fuel gas steam boilers

在工业生产中,蒸汽作为一种用途极为广泛的能源与几乎所有的企业有着不可分割的联系。大量的工业用水和以煤炭为主的能源被用来产生蒸汽,蒸汽的热力又被用来实现工业生产过程,而蒸汽释放出部分热能后生成的冷凝水往往被扔掉。

冷凝水拥有大量的热量,一般占蒸汽总热量的20～30%,某些设备可高达40%。因此若能将高温冷凝水作为锅炉补给水循环使用或二次闪蒸气利用,不仅节约了工业用水,更会节约大量的燃料。这样,锅炉在生产同样多的蒸汽时,就可节约30～40%的燃料、用水和水处理药品。燃料节约的同时减少锅炉烟气的排放,保护了环境。

对于普通的一体冷凝蒸汽锅炉而言,由于大量的冷凝水回收,导致锅炉的给水温度升高,没有了低温的给水,使得锅炉的排烟温度无法降低到烟气露点以下。

为此我司根据此种工况专门研发了适用于高温给水工况的冷凝蒸汽锅炉,此锅炉可在高温给水的情况下,利用空预器吸收烟气中的余热,同时提供热风给锅炉,大大提升了锅炉的效率,为用户节约大量的燃料费用。

空预一体燃油气蒸汽锅炉的优势
Advantages of Integrated Air Preheating Fuel Gas Steam Boilers

1、锅炉本体采用顺流湿背式结构,运行稳定可靠;

2、炉胆采用波纹炉胆结构,既增加了辐射传热面积,又满足了炉胆受高温辐射后自由膨胀的需要;

3、梯级余热利用:充分利用不同品位的热量,提高锅炉能效;

4、采用多种强化传热措施,提升换热效率;

5、前烟箱门与面板采用双层密封结构,优质保温材料,保证良好的密封和保温性能;

6、配置可拆式弹簧防爆门,保证安全运行安全,同时也可用作炉膛检查孔;

7、变频连续给水系统,使锅炉运行更加稳定,提升锅炉运行效率;

8、配置稳定高效的超低氮燃烧系统,在全功率段稳定达到30mg/m³的排放效果,满足国内最苛刻的排放要求;

9、配置锅炉触摸屏智能控制系统,保障锅炉安全稳定的运行;

10、锅炉本体、节能器、空预器等一体式安装,缩短了安装周期,节省了占地面积,减少了基建投资费用。

In industrial production, steam, as an energy source with extremely wide applications, is inextricably linked with almost all enterprises. A large amount of industrial water and energy primarily from coal are used to generate steam, and the thermal energy of steam is then utilized to facilitate industrial production processes. However, the condensate water generated after the steam releases some of its heat is often discarded.

Condensate water holds a significant amount of heat, typically accounting for 20-30% of the total heat in steam, and can even reach up to 40% in certain equipment. Therefore, if high-temperature condensate water can be recycled as boiler makeup water or utilized via secondary flash steam, it not only conserves industrial water but also significantly reduces fuel consumption. In this way, when the boiler produces the same amount of steam, it can save 30-40% of fuel, water, and water treatment chemicals. Fuel savings also reduce boiler flue gas emissions, thus protecting the environment.

For a typical integrated condensing steam boiler, the recovery of a large amount of condensate results in an increase in boiler feedwater temperature. Without low-temperature feedwater, the boiler flue gas temperature cannot be lowered below the flue gas dew point.

For this reason, our company has developed a dedicated condensing steam boiler suitable for high-temperature feedwater conditions. Under high-temperature feedwater conditions, this boiler uses an air preheater to recover waste heat from the flue gas while supplying hot air to the boiler, greatly improving boiler efficiency and helping users save substantial fuel costs.

1. The boiler body adopts a countercurrent wet-back structure, ensuring stable and reliable operation;
2. The boiler adopts a corrugated furnace tube structure, which not only increases the radiative heat transfer area but also meets the requirement for free expansion of the furnace tube after being exposed to high-temperature radiation;
3. Cascade waste heat utilization: fully utilize heat of different grades to improve boiler energy efficiency;
4. Adopt various heat transfer enhancement measures to improve heat exchange efficiency;
5. The front smoke box door and panel adopt a double-layer sealing structure and high-quality insulation materials to ensure excellent sealing and insulation performance;
6. Equipped with a detachable spring explosion-proof door, which ensures safe operation and can also be used as a furnace inspection hole;
7. The variable frequency continuous feedwater system makes boiler operation more stable and improves boiler operation efficiency;
8. Equipped with a stable and efficient ultra-low nitrogen combustion system, which achieves a stable emission level of 30mg/m³ across the full power range, meeting the most stringent emission requirements in China;
9. Equipped with a boiler touchscreen intelligent control system to ensure the safe and stable operation of the boiler;
10. The boiler body, economizer, air preheater, etc. are installed in an integrated manner, which shortens the installation period, saves floor space, and reduces infrastructure investment costs.

空预一体燃油气蒸汽锅炉现场图
On-site Photo of Integrated Air Preheating Fuel Gas Steam Boilers.

冷凝一体式蒸汽锅炉技术参数
TECHNICAL PARAMETERS OF INTEGRATED CONDENSING STEAM BOILERS

项目 /型号 Item/Model		WNS1-1.25-Y/Q	WNS2-1.25-Y/Q	WNS3-1.25-Y/Q	WNS4-1.25-Y/Q	WNS4-1.6-Y/Q	WNS6-1.25-Y/Q	WNS6-1.6-Y/Q	WNS8-1.25-Y/Q	WNS8-1.6-Y/Q	WNS10-1.25-Y/Q	WNS10-1.6-Y/Q	WNS15-1.25-Y/Q	WNS15-1.6-Y/Q	WNS20-1.25-Y/Q	WNS20-1.6-Y/Q
额定蒸发量Rated evaporation capacity（t/h）		1	2	3	4	4	6	6	8	8	10	10	15	15	20	20
额定蒸汽压力 Rated steam pressure（MPa）		1.25	1.25	1.25	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6
过热蒸汽温度 Superheated steam temperature（℃）		194	194	194	194	204	194	204	194	204	194	204	194	204	194	204
热效率 Thermalefficiency (%)		98%以上														
有效水容积Effective water volume(m^3)		2.6	5.8	6.8	9.1	9.1	12.1	12.1	17.3	17.3	17.5	17.5	23.21	23.21	32.36	32.36
柴油耗量 Diesel onsumption (Kg/h)		64	129	190	256	258	381	384	457.5	460	621	625	955	958	1270	1275
天然气耗量Natural gas consumption (Nm^3/h)		71.5	143.3	214	285	287	430	433	570	574	710	715	1050	1055	1431	1435
电源Power supply (V/ Hz)		220/50	380 /50													
主蒸汽口 Mainsteam outlet (mm)		DN65	DN80	DN100	DN100	DN100	DN125	DN125	DN150	DN150	DN150	DN150	DN200	DN200	DN200	DN200
副蒸汽出口 Auxiliary steam outlet（mm）		/	/	/	/	/	/	/	/	/	DN40	DN40	DN40	DN40	DN40	DN40
进水口 Water inlet (mm)		DN25	DN25	DN 32	DN 40	DN 40	DN50	DN50	DN50	DN50	DN50	DN50	DN50	DN50	DN65	DN65
安全阀出口 Safety valve outlet (mm)		DN40	DN50	DN 65	DN 50	DN 50	DN 65	DN 65	DN 65	DN65	DN80	DN 80	DN100	DN100	DN100	DN100
安全阀数量 Number of safety valves		1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
排污口 Discharge outlet (mm)		DN40	DN50													
烟囱Chimney (mm)（φ）		325	325	426	426	426	500	500	600	600	700	700	800	800	900	900
外形尺寸 Overall dimensions (mm)	长L	4112	4700	4790	5955	5955	6420	6420	7360	7360	8250	8250	8510	8510	9855	9855
	宽W	2595	2740	3085	3225	3225	3285	3285	3385	3385	3840	3840	4015	4015	4145	4145
	高H	3110	3415	3535	3765	3765	3950	3950	4130	4130	4220	4220	4530	4530	4850	4850
重量Weight (T)		4.7	6.9	8.5	10.4	11.1	13.6	14.6	17.7	19.1	21.6	22.3	26.8	29.5	35.1	37.7

备注: 1、燃料发热量按以下标准计算：柴油热值42900KJ/kg（即10248kcal/kg), 天然气热值36000KJ/Nm³(即8600kcal/Nm³), 城市煤气16000KJ/Nm³（即3800kcal/Nm³)。
2、如气源为煤气, 定货时请提供煤气热值，供气压力范围，海拔高度。
3、燃料耗量均为锅炉满负荷时耗量，根据工况不同，实际耗量将不同。
4、保留在不事先通知的情况下重新定义或更改产品信息的权利（包括外形、技术、内部结构）具体以提供图纸为准。

Note: 1. The calorific value of fuel is calculated according to the following standards: diesel has a calorific value of 42,900 KJ/kg (equivalent to 10,248 kcal/kg), natural gas has a calorific value of 36,000 KJ/Nm³ (equivalent to 8,600 kcal/Nm³), and city gas has a calorific value of 16,000 KJ/Nm³ (equivalent to 3,800 kcal/Nm³).
2. If the gas source is coal gas, please provide the calorific value of the coal gas, the range of gas supply pressure, and the altitude when placing the order.
3. The fuel consumption is the consumption at full load of the boiler, and the actual consumption may vary depending on different operating conditions.
4. We reserve the right to redefine or modify product information (including appearance, technology, and internal structure) without prior notice. Please refer to the provided drawings for specific details.

空预一体燃油气蒸汽锅炉技术参数
TECHNICAL PARAMETERS OF INTEGRATED AIR PREHEATING FUEL GAS STEAM BOILERS

项目 /型号 Item/Model		WNS4-1.25-Y、Q	WNS4-1.6-Y、Q	WNS6-1.25-Y、Q	WNS6-1.6-Y、Q	WNS8-1.25-Y、Q	WNS8-1.6-Y、Q	WNS10-1.25-Y、Q	WNS10-1.6-Y、Q	WNS15-1.25-Y、Q	WNS15-1.6-Y、Q	WNS20-1.25-Y、Q	WNS20-1.6-Y、Q	WNS25-1.25-Y、Q	WNS25-1.6-Y、Q
额定蒸发量Rated evaporation capacity（t/h）		4	4	6	6	8	8	10	10	15	15	20	20	25	25
额定蒸汽压力 Rated steam pressure（MPa）		1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6
过热蒸汽温度 Superheated steam temperature（℃）		194	204	194	204	194	204	194	204	194	204	194	204	194	204
热效率 Thermalefficiency (%)		99%以上													
有效水容积Effective water volume(m^3)		9.1	9.1	12.1	12.1	17.3	17.3	17.5	17.5	23.2	23.2	32.4	32.4	39.5	39.5
柴油耗量 Dieselconsumption (Kg/h)		251	251	380	380	455	455	621	621	950	950	1270	1270	1383	1383
天然气耗量Natural gas consumption (Nm^3/h)		284	284	426	426	568	568	710	710	1065	1065	1420	1420	1671	1671
电源Power supply (V/Hz)		380 /50													
主蒸汽口 Mainsteam outlte(mm)		DN100	DN100	DN125	DN125	DN150	DN150	DN150	DN150	DN200	DN200	DN200	DN200	DN200	DN200
副蒸汽出口 Auxiliary steam outlet（mm）		/		/		/		DN40	DN40	DN40	DN40	DN40	DN40	DN40	DN40
进水口 Water inlet (mm)		DN40	DN40	DN50	DN50	DN50	DN50	DN50	DN50	DN50	DN50	DN65	DN65	DN80	DN80
安全阀出口 Safety valve outlet (mm)		DN50	DN50	DN65	DN65	DN65	DN65	DN80	DN80	DN100	DN100	DN100	DN100	DN125	DN125
安全阀数量 Number of safety valves		2	2	2	2	2	2	2	2	2	2	2	2	2	2
排污口 Discharge outlet (mm)		DN50													
烟囱Chimney (mm)（φ）		426	426	500	500	600	600	700	700	800	800	900	900	1000	1000
外形尺寸 Overall dimensions (mm)	长L	5015	5015	5815	5815	6370	6370	7300	7300	7655	7655	8115	8115	8490	8490
	宽W	2560	2560	2830	2830	3060	3060	3330	3330	3440	3440	3620	3620	3830	3830
	高H	2895	2895	3020	3020	3180	3180	3305	3305	3640	3640	3900	3900	4025	4025
重量Weight (T)		12.1	13.3	15.4	16.9	19.8	21.8	23.3	25.4	29.5	32.4	40.7	44.7	49.6	53.6

备注: 1、燃料发热量按以下标准计算：柴油热值42900KJ/kg（即10248kcal/kg), 天然气热值36000KJ/Nm³(即8600kcal/Nm³), 城市煤气16000KJ/Nm³（即3800kcal/Nm³)。
2、如气源为煤气, 定货时请提供煤气热值，供气压力范围，海拔高度。
3、燃料耗量均为锅炉满负荷时耗量，根据工况不同，实际耗量将不同。
4、保留在不事先通知的情况下重新定义或更改产品信息的权利（包括外形、技术、内部结构）具体以提供图纸为准。

Note: 1. The calorific value of fuel is calculated according to the following standards: diesel has a calorific value of 42,900 KJ/kg (equivalent to 10,248 kcal/kg), natural gas has a calorific value of 36,000 KJ/Nm³ (equivalent to 8,600 kcal/Nm³), and city gas has a calorific value of 16,000 KJ/Nm³ (equivalent to 3,800 kcal/Nm³).
2. If the gas source is coal gas, please provide the calorific value of the coal gas, the range of gas supply pressure, and the altitude when placing the order.
3. The fuel consumption is the consumption at full load of the boiler, and the actual consumption may vary depending on different operating conditions.
4. We reserve the right to redefine or modify product information (including appearance, technology, and internal structure) without prior notice. Please refer to the provided drawings for specific details.

WNS系列 WNS SERIES

卧式全自动燃油气蒸汽锅炉
HORIZONTAL FULLY AUTOMATIC FUEL GAS STEAM BOILERS

WNS(0.5～20)-(1.25/1.6)-Y.Q

FRSTD BOILER

卧式全自动燃油气蒸汽锅炉的优势
Advantages of horizontal fully automatic fuel gas steam boilers

1、采用湿背式顺流燃烧三回程结构，此结构炉胆空间大，有效辐射受热面大，保证了锅炉的高效节能，湿背式结构后管板不受高温烟气冲刷，大大延长锅炉寿命。

2、全波形炉胆，螺纹烟管，具有良好的热伸缩性，科学的气流设计，炉内温度场均匀，且有效吸收火焰热量，有效抑制Nox的生成，加之优良可靠的进口燃烧器，使燃料得到完全燃烧，符合严格的环保要求。

3、全中文菜单液晶人机界面，触摸屏控制和动态图形化工作运行状态显示。用户仅需设定工作时间参数，选择连续，锅炉即能按所设定程序自动运行。

4、自动运行、自动补水、图形显示。设有多重连锁保护，加上双重独立的水位控制报警，三重压力保护及报警显示、记录，确保锅炉在各种工况下安全运行。

5、标准 RS485 接口，可以实现集中控制远程监控，并可组成多台锅炉网络，根据负荷变化自动运行。

6、采用触摸屏人机界面和可编程序控制器，中文菜单式人机对话、清楚直观、操作方便、容易掌握。

7、银灰色彩板、玻璃棉卷毡、硅酸铝针刺毯包装。美观大方，不锈蚀。

8、具有先进独特的设计，保证锅炉安全可靠、经济高效。前后烟箱均采用活动烟箱门，炉体开设人孔、头孔、手孔，简化了清洁工作，使维修、养护极为方便。

9、阀门采用知名品牌郑州高山阀门。10、整机快装出厂，外形美观，安装方便。

1. The boiler adopts a wet-back, downstream combustion, three-pass structure. This structure features a large furnace volume and a large effective radiant heating surface, ensuring high efficiency and energy conservation. The wet-back design protects the rear tube sheet from high-temperature flue gas erosion, greatly extending the boiler service life.
2. The full-wave furnace, threaded smoke tubes feature excellent thermal expansion and contraction. The scientific airflow design ensures uniform temperature distribution inside the furnace and effective absorption of flame heat, effectively suppressing the formation of NOx. Coupled with a high-performance and reliable imported burner, the fuel is burned completely to meet stringent environmental requirements.
3. It is equipped with a full Chinese menu LCD human-machine interface, touch screen control, and dynamic graphical display of operating status. Users only need to set the working time parameters and select continuous operation, and the boiler will au tomatically operate according to the set program.
4.It features automatic operation, automatic water replenishment, and graphical display. Equipped with multiple interlock protections, coupled with dual independent water level control and alarm functions, triple pressure protection, as well as alarm display and recording, it ensures the safe operation of the boiler under various operating conditions.
5. It is equipped with a standard RS485 interface, which enables centralized control and remote monitoring, and can form a network of multiple boilers that operate automatically according to load changes.
6. Equipped with a touch screen human-machine interface and a programmable controller, it features a Chinese menu-based human-machine dialogue, which is clear, intuitive, easy to operate, and easy to master.
7. Packaged with silver-gray color plates, glass wool rolls, and aluminum silicate needle-punched blankets, it is elegant in appearance and resistant to corrosion.
8. With its advanced and unique design, the boiler ensures safety, reliability, economy, and efficiency. Both the front and rear smoke boxes are equipped with movable smoke box doors. The boiler body is provided with manholes, head holes, and hand holes, which simplifies cl eaning work and makes maintenance and upkeep extremely convenient.
9. The valve is sourced from the renowned brand Zhengzhou Gaoshan Valve.
10. The whole machine is fully assembled before delivery, with a beautiful appearance and easy installation.

燃纯氢气锅炉现场
On-site Photo of Pure Hydrogen-Fired Boilers

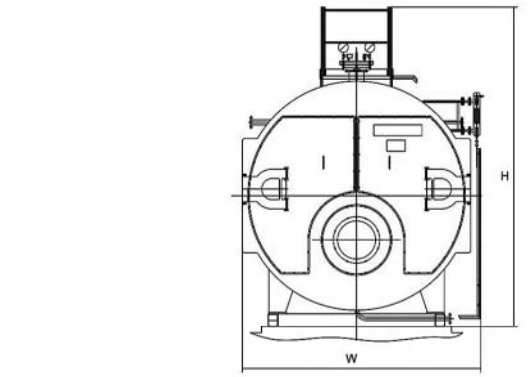
卧式全自动燃油气蒸汽锅炉技术参数
TECHNICAL PARAMETERS OF HORIZONTAL FULLY AUTOMATIC FUEL GAS STEAM BOILERS

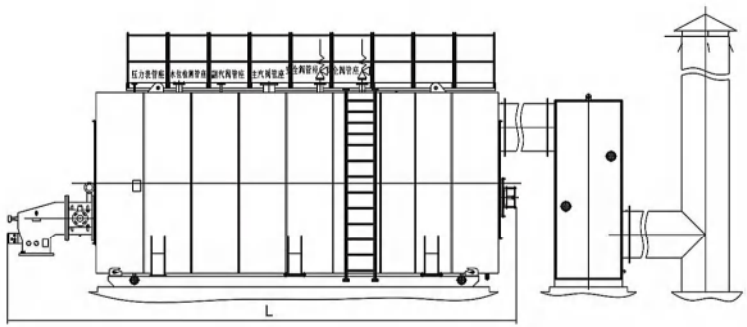
项目 /型号 Item/Model		WNS 0.5-1.25-Y/Q	WNS 1-1.25-Y/Q	WNS 1.5-1.25-Y/Q	WNS 2-1.25-Y/Q	WNS 3-1.25-Y/Q	WNS 4-1.25-Y/Q	WNS 4-1.6-Y/Q	WNS 6-1.25-Y/Q	WNS 6-1.6-Y/Q	WNS 8-1.25-Y/Q	WNS 8-1.6-Y/Q	WNS 10-1.25-Y/Q	WNS 10-1.6-Y/Q	WNS 15-1.25-Y/Q	WNS 15-1.6-Y/Q	WNS 20-1.25-Y/Q	WNS 20-1.6-Y/Q
额定蒸发量Rated evaporation capacity（t/h）		0.5	1	1.5	2	3	4	4	6	6	8	8	10	10	15	15	20	20
额定蒸汽压力 Rated steam pressure（MPa）		1.25	1.25	1.25	1.25	1.25	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6	1.25	1.6
过热蒸汽温度 Superheated steam temperature（℃）		194	194	194	194	194	194	204	194	204	194	204	194	204	194	204	194	204
热效率Thermal efficiency (%)		≥ 98%																
有效水容积 Effective water volume(m^3)		2.5	2.6	2.6	5	6.8	8	8	12.1	14	17.4	18.1	17.8	17.5	21.3	23.21	26.72	32.36
柴油耗量 Diesel consumption (Kg/h)		32	65	97	130	192	258	260	382	386	460	465	635	639	958	960	1273	1278
天然气耗量Natural gas consumption (Nm^3/h)		37.5	74.3	110	148	221	295	298	445	448	594	597	740	743	1112	1115	1485	1488
电源Power supply (V/ Hz)		220/50		380 / 50														
主蒸汽口 Main steam outlet (mm)		DN50	DN65	DN65	DN80	DN 100	DN 100	DN 100	DN 125	DN 125	DN 150	DN 150	DN 150	DN 150	DN 200	DN 200	DN 200	DN 200
副蒸汽出口 Auxiliary steam outlet（mm）		/	/	/	/	/	/	/	/	/	/	/	DN40	DN40	DN40	DN40	DN40	DN40
进水口 Water inlet (mm)		DN25	DN25	DN25	DN25	DN32	DN40	DN40	DN50	DN50	DN50	DN50	DN50	DN50	DN50	DN50	DN65	DN65
安全阀出口 Safety valve outlet(mm)		DN40	DN40	DN40	DN50	DN65	DN50	DN50	DN65	DN65	DN65	DN65	DN80	DN80	DN 100	DN 100	DN 100	DN 100
安全阀数量 Number of safety valves		1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
排污口 Discharge outlet (mm)		DN40			DN50													
烟囱Chimney (mm)（φ）		219	325	325	325	426	426	426	500	500	600	600	700	700	800	800	900	900
外形尺寸 Overall dimensions (mm)	长L	3550	4035	4035	4150	4790	5900	5900	6570	6570	7515	7515	8375	8375	8470	8470	10070	10070
	宽W	2240	2120	2120	2740	2290	2540	2540	2695	2695	2955	2955	3055	3055	3275	3275	3770	3770
	高H	2030	3105	3105	3410	3530	3755	3755	3940	3940	4000	4000	4100	4100	4474	4474	4830	4830
重量Weight(T)		3.6	4.8	4.95	7.3	9	11.9	12.7	14.6	15.7	17.4	18.7	20.4	21.9	28.8	30.8	33.9	36.7

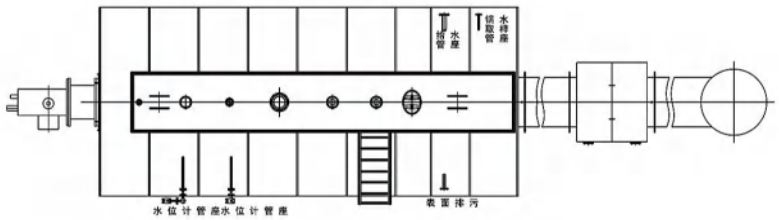
备注：1、燃料发热量按以下标准计算：柴油热值42900KJ/kg（即10248kcal/kg)，天然气热值36000KJ/Nm^3(即8600kcal/Nm^3)，城市煤气16000KJ/Nm^3（即3800kcal/Nm^3)。
2、如气源为煤气，定货时请提供煤气热值，供气压力范围，海拔高度。
3、燃料耗量均为锅炉满负荷时耗量，根据工况不同，实际耗量将不同。
4、保留在不事先通知的情况下重新定义或更改产品信息的权利（包括外形、技术、内部结构）具体以提供图纸为准。

Note: 1. The calorific value of fuel is calculated according to the following standards: diesel has a calorific value of 42,900 KJ/kg (equivalent to 10,248 kcal/kg), natural gas has a calorific value of 36,000 KJ/Nm^3 (equivalent to 8,600 kcal/Nm^3), and city gas has a calorific value of 16,000 KJ/Nm^3 (equivalent to 3,800 kcal/Nm^3).
2. If the gas source is coal gas, please provide the calorific value of the coal gas, the range of gas supply pressure, and the altitude when placing the order.
3. The fuel consumption is the consumption at full load of the boiler, and the actual consumption may vary depending on different operating conditions.
4. We reserve the right to redefine or modify product information (including appearance, technology, and internal structure) without prior notice. Please refer to the provided drawings for specific details.

卧式全自动燃油气蒸汽锅炉外型图
OUTLINE DRAWING OF HORIZONTAL FULLY AUTOMATIC FUEL GAS STEAM BOILERS







SF系列 SF SERIES

水冷丰能管蒸汽锅炉
WATER-COOLED HIGH-EFFICIENCY TUBE STEAM BOILERS

WNS(2-10)-1.25/1.6-Q

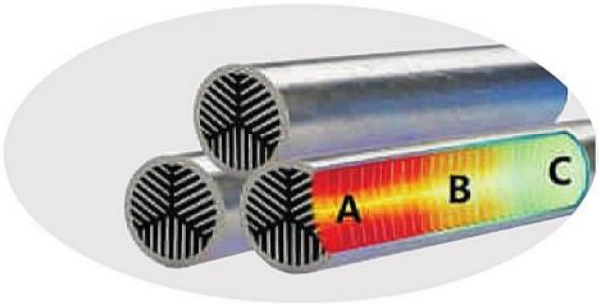
FIRSTD BOILER

水冷丰能管蒸汽锅炉的特点
Characteristics of water-cooled high-efficiency tube steam boiler

- 锅炉配置水冷全预混燃烧器，采用CP-CF（波纹板切割火焰）管内水冷的燃烧技术，火焰温度低，炉内温度场更趋均匀，有效避免了局部高温，抑制热力型 NOx产生，当氧含量 3.5%时 NOx排放小于 30mg/m³。循环水强制冷却火排，杜绝高温回火。
- 精确计算火孔尺寸及加工工艺，排列均匀、不回火、不堵塞。无需空气过滤系统，长久保持燃烧系统的稳定运行。

- The boiler is equipped with a water-cooled fully premixed burner adopting CP-CF (Corrugated Plate Cutting Flame) in-tube water-cooled combustion technology. It features low flame temperature and a more uniform temperature field inside the furnace, which effectively avoids local overheating and suppresses the formation of thermal NOx. When the oxygen content is 3.5%, NOx emissions are less than 30 mg/m³. The burner surface is forcibly cooled by circulating water to eliminate high-temperature flashback.
- Precise calculation of burner port dimensions and processing technology ensures uniform arrangement, no flashback, and no clogging. No air filtration system is required, enabling long-term stable operation of the combustion system.

感受科技 + 低氮 环保
Nox的排放量低于 30 毫克
Technology + Low nitrogen/Environmental protection
NOx emissions of less than 30 mg.



FIRSTD BOILER

水冷丰能管蒸汽锅炉的特点
Characteristics Of Water-cooled High-efficiency Tube Steam Boiler

丰能管冷凝传热技术
High-efficiency tube condensation heat transfer technology

1、换热面积超普通光管的6倍以上，同等吨位条件下，锅炉体积缩小50%。；

2、独特的撕裂槽设计，兼具传热和冷凝的功能;3、丰能管材质采用硅铝合金，耐腐蚀性强，使用寿命长;

4、CFD 数值模拟分析，优化传热性能; 5、丰能管深入烟气中心，迅速降低烟温;

6、水在丰能管外流通，受水流冲刷,不易结垢,节省水处理费用。

1. The heat exchange area is more than 6 times that of ordinary smooth tubes, and under the same tonnage, the boiler volume is reduced by 50%;
2. The unique tear groove design serves both heat transfer and condensation functions;
3. The high-efficiency tube is made of silicon-aluminum alloy, featuring strong corrosion resistance and a long service life;
4. CFD numerical simulation analysis is adopted to optimize heat transfer performance;
5. The high-efficiency tube penetrates deep into the center of the flue gas, rapidly reducing the flue gas temperature;
6. Water flows outside the high-efficiency tube; the scouring effect of the water flow makes it less prone to scaling, thus saving water treatment costs.

燃烧与传热深度耦合技术
Deep Coupling Technology of Combustion and Heat Transfer

锅炉采用耦合技术，使锅炉形成完整的热循环，通过CFD数值模拟、风机变频调节、火焰结构代化，电子调节空燃比、锅炉尾部受热面合理设计等，使燃烧与传热得到量身定制般的优化，锅炉运行更加高效、节能、响应更快、稳定性更高。独立安装的风机，有更大的自由度，根据不同锅炉不同运行环境进行优化设计，变频控制的风机使燃烧调整更精细，使得锅炉在各种工况、环境下运行更平稳。

The boiler adopts coupling technology to form a complete thermal cycle. Through CFD numerical simulation, variable frequency regulation of fans, optimization of flame structure, electronic adjustment of air-fuel ratio, and reasonable design of the boiler's tail heating surface, combustion and heat transfer are optimized in a tailored manner, enabling the boiler to operate more efficiently, energy-saving, with faster response and higher stability. The independently installed fans have greater flexibility, allowing optimal design according to different boilers and operating environments. The variable frequency-controlled fans enable more precise combustion adjustment, ensuring the boiler operates more stably under various operating conditions and environments.

水冷丰能管蒸汽锅炉技术参数
TECHNICAL PARAMETERS OF WATER-COOLED HIGH-EFFICIENCY TUBE STEAM BOILERS

项目 /型号 Item/Model		WNS2-1.25/1.6-Q	WNS4-1.25/1.6-Q	WNS6-1.25/1.6-Q	WNS8-1.25/1.6-Q	WNS10-1.25/1.6-Q
额定蒸发量Rated evaporation capacity（t/h）		2	4	6	8	10
额定蒸汽压力Rated steam pressure（Mpa）		1.25/ 1.6	1.25/1.6	1.25/1.6	1.25/1.6	1.25/ 1.6
过热蒸汽温度Superheated steam temperature（℃）		193.3/ 204	193.3/204	193.3/204	193.3/204	193.3/204
热效率thermal efficiency (%)		> 98				
有效水容积Effective water volume(m^3)		2	3.9	4.8	5.9	7.9
柴油耗量diesel consumption（Kg/h）		/	/	/	/	/
天然气耗量natural gas consumption（Nm^3/h）		143.3	286.6	429.9	573.2	716.5
电源power supply（V/ Hz）		380/50				
主蒸汽口Main steam outlet (mm)		DN80	DN100	DN125	DN150	DN150
副蒸汽出口Auxiliary steam outlet（mm）		/	/	/	/	DN40
进水口water inlet(mm)		DN25	DN40	DN50	DN50	DN50
安全阀出口Safety valve outlet (mm)		DN50	DN50	DN65	DN65	DN80
安全阀数量Number of safety valves		1	2	2	2	2
排污口Discharge outlet (mm)		DN50	DN50	DN50	DN50	DN50
烟囱Chimney(mm)（φ）		325	426	500	600	700
运输尺寸 Shipping dimensions (mm)	长L	3210	3750	4640	6800	7100
	宽W	1925	2100	2425	2650	2850
	高H	2120	2330	2720	3710	3940

备注: 1、燃料发热量按以下标准计算：柴油热值42900KJ/kg（即10248kcal/kg)，天然气热值36000KJ/Nm^3(即8600kcal/Nm^3)，城市煤气16000KJ/Nm^3（即3800kcal/Nm^3)。
2、如气源为煤气，定货时请提供煤气热值，供气压力范围，海拔高度。
3、燃料耗量均为锅炉满负荷时耗量，根据工况不同，实际耗量将不同。
4、保留在不事先通知的情况下重新定义或更改产品信息的权利（包括外形、技术、内部结构）具体以提供图纸为准。

Note: 1. The calorific value of fuel is calculated according to the following standards: diesel has a calorific value of 42,900 KJ/kg (equivalent to 10,248 kcal/kg), natural gas has a calorific value of 36,000 KJ/Nm^3 (equivalent to 8,600 kcal/Nm^3), and city gas has a calorific value of 16,000 KJ/Nm^3 (equivalent to 3,800 kcal/Nm^3).
2. If the gas source is coal gas, please provide the calorific value of the coal gas, the range of gas supply pressure, and the altitude when placing the order.
3. The fuel consumption is the consumption at full load of the boiler, and the actual consumption may vary depending on different operating conditions.
4. We reserve the right to redefine or modify product information (including appearance, technology, and internal structure) without prior notice. Please refer to the provided drawings for specific details.

S系列 S SERIES

水冷全预混低氮蒸汽发生器
WATER-COOLED FULLY PREMIXED LOW-NITROGEN STEAM GENERATORS

SLSS(0.5-1)-1.0-Q

FRSTD BOILER

水冷全预混低氮蒸汽发生器
Water-cooled fully premixed low-nitrogen steam generator

水冷式全预混低氮蒸汽发生器，采用先进的水冷式全预混燃气燃控系统，由匀气室、布风板、水冷炉排、点火组件等组合而成，火焰范围宽，稳定性高，循环水强制冷却，不会发生回火现象。

空气与天然气在燃烧前充分混合，增压后在炉膛内微正压燃烧，管排内的炉水吸收火焰热量从而降低火焰温度，抑制NOx产生;高温烟气在炉膛内进行辐射换热后通过对流受热面对流换热后进入冷凝器，吸收汽化潜热后，排入大气。本系列炉型采用计算机辅助设计，优化了各受热面，使炉体结构更加合理。采用硅酸铝多层保温，热损失少; 喷塑工艺包装，外型美观。

The water-cooled fully premixed low-nitrogen steam generator adopts an advanced water-cooled fully premixed gas combustion control system, composed of a gas distribution chamber, an air distribution plate, a water-cooled grate, an ignition assembly, etc. It features a wide flame range, high stability, and forced circulating water cooling, thus avoiding backfire.

Air and natural gas are fully mixed before combustion, and burned at a slight positive pressure in the furnace after pressurization. The boiler water in the tube bank absorbs the flame heat to reduce the flame temperature and inhibit the generation of NOx. After radiative heat transfer in the furnace, the high-temperature flue gas enters the condenser after convective heat transfer through the convective heating surface, and is discharged into the atmosphere after absorbing the latent heat of vaporization. This series of boiler models adopts computer-aided design to optimize each heating surface, making the furnace structure more reasonable. It uses multi-layer aluminum silicate insulation with less heat loss, and is packaged with a spray plastic process, featuring an attractive appearance.

主要特点Main Features

1、安装和使用手续简便，蒸汽发生器的安装和使用不需要到当地锅炉检监机构办理使用登记手续，不受当地锅炉监检机构的管理。高效、节能、环保、安全；

2、无噪音，采用变频静音风机；

3、结构紧凑，设备整装出厂，便于安装；

4、尾气排放浓度低，符合国家排放标准；

5、炉体采用GB/T5310水管和一体式翅片管相结合的结构型式，将炉体体积缩小至 极致；

6、采用水冷型炉墙结构，散热损失小，效率更高；

7、就近安装，减少管损，高效节能；

8、高效节能，设有专门吸收烟气余热（显热和潜热）的冷凝式受热面，大大降低锅炉排烟温度。锅炉效率高达106%以上，为用户节约燃料费用；

9、无需司炉工，兼职即可；

10、无安全隐患，永远不会爆炸；

11、人性化工业外观设计——外观设计美观紧凑，占地面积小，整体化设计，安装、维修、操作极其方便；

12、多台模块化并联使用，根据负荷变化启动不同台数，系统可节能10%；根据需求开启不同数量设备，合理轮换使用，更好的延长设备寿命；

13、检测、调节、联锁保护功能齐全。具有自动吹扫程序，熄火保护和燃气压力高 于或低于设定值时自动保护功能，并且具有超压报警功能，可根据热负荷大小自动调节燃烧，因而更节能更安全。

1. The installation and usage procedures are simple. The installation and usage of the steam generator do not require registration with the local boiler inspection and supervision agency and are not subject to its management. It is efficient, energy-saving, environmentally friendly and safe;
2. No noise, adopting a variable-frequency silent fan;
3. Compact structure, the equipment is shipped fully assembled, facilitating easy installation;
4. Low exhaust gas emission concentration, complying with national emission standards;
5. The furnace body adopts a structural type combining GB/T5310 water tubes and integrated finned tubes, minimizing the furnace body volume to the maximum extent;
6. A water-cooled furnace wall structure is adopted, featuring low heat loss and higher efficiency;
7. Installation nearby reduces pipe loss, achieving high efficiency and energy saving;
8. Highly efficient and energy-saving, it is equipped with a condensing heating surface specifically designed to absorb waste heat (sensible heat and latent heat) from flue gas, significantly reducing the boiler's exhaust gas temperature. The boiler boasts an efficiency of over 106%, helping users save fuel costs;
9. No stoker is required; part-time operation is sufficient;
10. There are no potential safety hazards, and it will never explode;
11. Humanized industrial appearance design – it features an attractive and compact appearance, a small footprint, and an integrated design, making installation, maintenance and operation extremely convenient;
12. Multiple modular units can be used in parallel; different numbers of units are activated according to load changes, enabling the system to save 10% energy. By activating different numbers of devices according to demand and using them in reasonable rotation, the service life of the equipment can be better extended;
13. It is fully equipped with detection, regulation, and interlock protection functions. It features an automatic purging program, flameout protection, and automatic protection when the gas pressure is higher or lower than the set value. Additionally, it has an overpressure alarm function and can automatically adjust combustion according to the heat load, thus being more energy-efficient and safer.

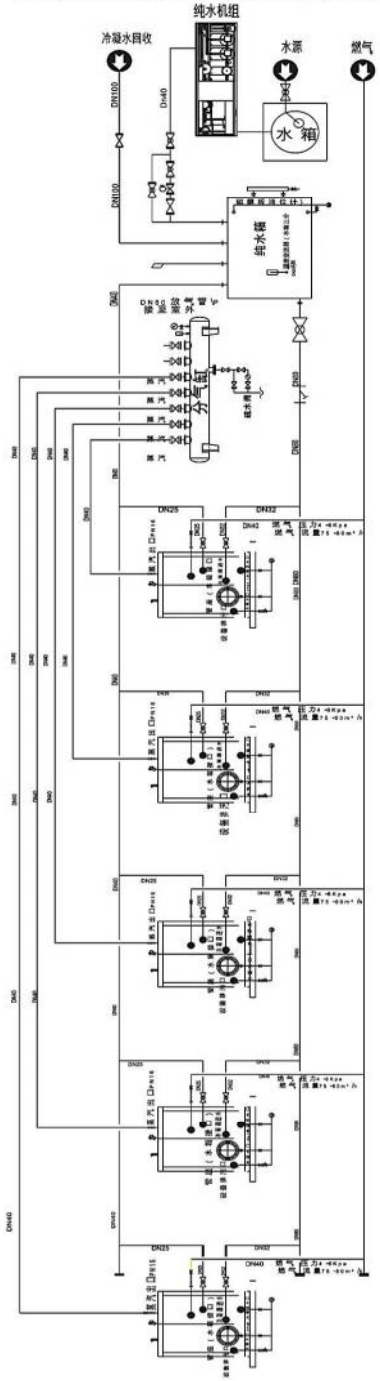
水冷全预混蒸汽发生器技术参数
TECHNICAL PARAMETERS OF WATER-COOLED FULLY PREMIXED STEAM GENERATORS

项目/型号 Item/Model		SLSS0.5- 1.0-Q	SLSS1- 1.0-Q
额定蒸发量 Rated evaporation capacity（t/h）		500	1000
额定蒸汽压力 Rated steam pressure（MPa）		1	1
额定蒸汽温度 Rated steam temperature (°C)		184	184
有效水容积 Effective water volume(m^3)		< 30	< 30
热效率 Thermal efficiency (%) 天然气 Natural gas (%)		> 98	> 98
排烟温度设计 Exhaust gas temperature design(°C)		90	90
天然气耗量 Natural gas consumption (Nm^3/h)		37.4	74.8
产出蒸汽时间 Steam production time (min)		3	3
进水口 Water inlet (mm)		DN25	DN25
蒸汽口 Steam outlet (mm)		DN40	DN40
安全阀口 Safety valve port (mm)		DN40	DN40
排污口 Discharge outlet (mm)		DN25	DN25
烟囱 Chimney(mm)（φ）		273	273
外形尺寸 Overall dimensions (mm)	长L	2160	2160
	宽W	1250	1250
	高H	1810	1810
重量 Weight(t)		1020	1020

备注：1、燃料发热量按以下标准计算：柴油热值42900KJ/kg（即10248kcal/kg），天然气热值36000KJ/Nm^3(即8600kcal/Nm^3)，城市煤气16000KJ/Nm^3（即3800kcal/Nm^3）。
2、如气源为煤气，定货时请提供煤气热值，供气压力范围，海拔高度。
3、燃料耗量均为锅炉满负荷时耗量，根据工况不同，实际耗量将不同。
4、保留在不事先通知的情况下重新定义或更改产品信息的权利（包括外形、技术、内部结构）具体以提供图纸为准。

Note: 1. The calorific value of fuel is calculated according to the following standards: diesel has a calorific value of 42,900 KJ/kg (equivalent to 10,248 kcal/kg), natural gas has a calorific value of 36,000 KJ/Nm^3 (equivalent to 8,600 kcal/Nm^3), and city gas has a calorific value of 16,000 KJ/Nm^3 (equivalent to 3,800 kcal/Nm^3).
2. If the gas source is coal gas, please provide the calorific value of the coal gas, the range of gas supply pressure, and the altitude when placing the order.
3. The fuel consumption is the consumption at full load of the boiler, and the actual consumption may vary depending on different operating conditions.
4. We reserve the right to redefine or modify product information (including appearance, technology, and internal structure) without prior notice. Please refer to the provided drawings for specific details.

水冷全预混蒸汽发生器多台组合系统图
SYSTEM DIAGRAM OF MULTIPLE COMBINED WATER-COOLED FULLY PREMIXED STEAM GENERATORS



移动集装箱式锅炉房适用于油田、道路建设工地、桥梁建设工地、流动单位、野外作业等需要锅炉的地方。

Mobile containerized boiler rooms are suitable for oil fields, road construction sites, bridge construction sites, mobile units, field operations and other places requiring boilers.

集装箱锅炉的特性
CHARACTERISTICS OF CONTAINERIZED BOILERS

活 动 性 可室外移动，可再次使用。

快速组建 制造工期短，免建锅炉地基。

安 全 性 钢骨结构，防风、防雨、防震。

耐 久 性 坚固耐用、耐腐蚀、不生锈、不龟裂，使用年限长。

隔音隔热 外观整洁、经久耐用。

Mobility: Can be moved outdoors and reused.
Rapid Setup: Short manufacturing period, no boiler foundation required.
Safety: Steel-framed structure, windproof, rainproof, and shockproof.
Durability: Sturdy and durable, corrosion-resistant, rustproof, crack-resistant, with long service life.
Sound and Heat Insulation: Neat appearance and long service life.

集装箱锅炉
CONTAINERIZED BOILERS

集装箱锅炉
container boiler

室外型整体锅炉房，可置于室外绿化带或建筑物楼顶。

The outdoor integrated boiler room can be installed in outdoor green belts or on building roof.

室外型整体锅炉的特性
CHARACTERISTICS OF OUTDOOR INTEGRATED BOILERS

活 动 性 可室外移动，可再次使用。

快速组建 制造工期短，免建锅炉地基。

安 全 性 钢骨结构，防风、防雨、防震。

耐 久 性 坚固耐用、耐腐蚀、不生锈、不龟裂，使用年限长。

隔音隔热 外观整洁、经久耐用。

Mobility: Can be moved outdoors and reused.
Rapid Setup: Short manufacturing period, no boiler foundation required.
Safety: Steel-framed structure, windproof, rainproof, and shockproof.
Durability: Sturdy and durable, corrosion-resistant, rustproof, crack-resistant, with long service life.
Sound and Heat Insulation: Neat appearance and long service life.

室外型整体锅炉
OUTDOOR INTEGRATED BOILERS

室外型整体锅炉房
The outdoor integrated boiler room

新能源锅炉
NEW ENERGY BOILERS

福士德高度重视环境的保护和改善，坚持履行社会责任，始终倡导节能环保理念，致力于新能源锅炉的推广于应用，为人类的新能源事业作出卓越贡献。

Firstd attaches great importance to environmental protection and improvement, upholds its social responsibilities, consistently advocates the concept of energy conservation and environmental protection, and is committed to the promotion and application of new energy boilers, making outstanding contributions to the global new energy industry.

FIRSTD BOILER
节能环保能源
ENERGY-SAVING AND ENVRON MENTALLY FRIENDLY ENERGY SOURCES

LNG 燃 料LNG fuel

LNG是液化天然气（Liquefied Natural Gas）的简称，先将气田生产的天然气净化处理，再经超低温（-162℃）常压液化就形成液化天然气，LNG在液化过程中，已将硫、二氧化碳、水份等杂质除去，因此燃烧后排放出的污染气体要比LPG、柴油、重油等少50%以上，LNG已成为新能源中纯净、环保、无污染的燃料。LNG的特点决定LNG发展非常迅速，可以预见，在未来10-20年的时间内，LNG将成为中国天然气市场的环保能源。

LNG stands for Liquefied Natural Gas. It is produced by first purifying natural gas from gas fields, followed by liquefaction at ultra-low temperature (-162°C) and atmospheric pressure. During the liquefaction process, impurities such as sulfur, carbon dioxide, and moisture have been removed from LNG. Therefore, the pollutant gases emitted after combustion are more than 50% less than those from LPG, diesel, heavy oil, and other fuels. LNG has become a pure, environmentally friendly, and pollution-free fuel among new energy sources. The characteristics of LNG determine its rapid development. It can be predicted that in the next 10-20 years, LNG will become an environmentally friendly energy source in China's natural gas market.

简述 LNG的六大优点Six major advantages of lng

1）热值高：LNG热值为8500~9000 kcal/Nm³。

2）LNG体积比同质量的天然气小625倍，所以可用汽车轮船很方便地将LNG运到没有天然气的地方使用。

3）LNG储存效率高，占地少。投资省，10m³LNG储存量就可供1万户居民1天的生活用气。

4）LNG汽化潜热高，液化过程中的冷量可回收利用。

5）由于LNG汽化后密度很低，只有空气的一半左右，稍有泄漏立即飞散开来，不致引起爆炸。

6）由于LNG组分较纯，燃烧完全，燃烧后生成二氧化碳和水，所以它是很好的清洁燃料，有利于保护环境，减少城市污染。

1) High calorific value: The calorific value of LNG is 8500-9000 kcal/Nm.
2) The volume of LNG is 625 times smaller than that of natural gas of the same mass, so it is convenient to transport LNG by vehicles and ships to places where natural gas is not available.
3) LNG boasts high storage efficiency and requires minimal land occupation, with low investment. A storage capacity of just 10m³ LNG can supply enough gas for 10,000 households for one day.
4) LNG has high latent heat of vaporization, and the cold energy generated during the liquefaction process can be recycled and utilized.
5) Due to the low density of vaporized LNG, which is only about half that of air, any slight leakage will disperse immediately, thus preventing explosions.
6) Due to its relatively pure composition and complete combustion, LNG only produces carbon dioxide and water after combustion, making it an excellent clean fuel that is conducive to protecting the environment and reducing urban pollution.

锅炉远程控制
REMOTE CONTROL OF BOILERS

采用先进成熟的GPRS DTU模块为远程数据传输模块,依托稳定可靠的中国移动GPRS网络,组成一套无线数据传输网络的实时监控系统,安全可靠,及时性强,通过画面组态将锅炉的运行数据以生动形象的方式展现出来,同时通过WEB发布功能将监控画面发布到网络上面,工作人员通过登录APP查看用户设备锅炉运行状态,工作人员根据用户锅炉的排烟温度、进出水温度、燃烧机的启停等数据,对异常情况进行告警,避免产品出现严重故障问题,对用户提出合理的建议,保证锅炉安全、高效的运行,用户可以通过登录APP查看自己的锅炉运行状态。

The advanced and mature GPRS DTU module is adopted as the remote data transmission module, relying on the stable and reliable China Mobile GPRS network to form a real-time monitoring system for the wireless data transmission network. It is safe, reliable and highly timely. The boiler's operating data is displayed in a vivid and intuitive manner through screen configuration. At the same time, the monitoring screen is published to the network through the WEB publishing function. Staff can view the operating status of the user's boiler equipment by logging into the APP. Based on data such as the user's boiler's exhaust gas temperature, inlet and outlet water temperatures, and burner start-stop status, staff can issue alarms for abnormalities to avoid serious product failures, provide reasonable suggestions to users, and ensure the safe and efficient operation of the boiler. Users can view the operating status of their own boilers by logging into a fixed IP address via the network.

单台锅炉控制
SINGLE BOILER CONTROL

操作界面直观简捷，运行状态一目了然。
1、采用高分辨率的单色液晶屏或彩色触摸屏（选配）；
2、全自动运行，操作轻松自如。

多方案的控制功能选择和丰富的扩展功能，让客户更多选择。1、智能可编辑控制器积木式的扩充模块和充足的预留端口，减少了用户对特殊需要开发的重复投资；
2、多台锅炉联网使用，无须设置主控制台即可使控制系统根据用户的设定温度自动选择锅炉运行台数和分配每台锅炉的负荷；
3、可方便地与目前的办公自动化网(WINDOWS9X、WINDOWSNT、NOVELL等)、工厂自动化控制网络互联，实现锅炉运行状况的远程监视功能；
4、可选配电脑作为监控画面。
(部分功能为选配)

The operation interface is intuitive and simple, with the operating status clear at a glance.
1. Adopting a high-resolution color touch screen;
2. Fully automatic operation, enabling easy and effortless operation.
Multiple control function options and abundant expansion features provide customers with more choices.
1. The intelligent editable controller features modular expansion blocks and sufficient reserved ports, reducing users' repeated investment in development for special requirements.
2. When multiple boilers are used in a network, the control system can automatically select the number of operating boilers and distribute the load of each boiler based on the user's steam consumption, without the need for a main control console;
3. It can be easily interconnected with current office automation networks (WINDOWS9X, WINDOWSNT, NOVELL, etc.) and factory automation control networks, realizing the remote monitoring function of boiler water quality and boiler operating conditions;
4. A computer can be optionally equipped as a monitoring screen. (Some functions are optional)

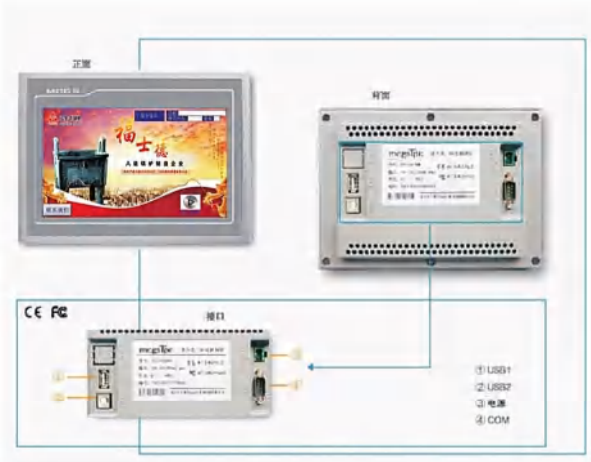
远程监测实时曲线图
Remote monitoring real-time curve graph

全自动智能控制系统 >>>

FULLY AUTOMATIC INTELLIGENT CONTROL SYSTEM

福士德公司拥有完全知识产权自主设计开发的PLC全自动智能控制系统，采用机电一体化控制设备和可编程逻辑控制器(PLC)联合控制方式。以先进的可编程逻辑控制器(PLC)为控制系统的“中央处理器”。控制系统通过触摸屏进行操作，使锅炉自动化控制程度和运行可靠程度大大提高，操作更加简便直观。

Firstd Company possesses a fully automatic intelligent PLC control system independently designed and developed with complete intellectual property rights. It adopts a joint control mode combining electromechanical integration control equipment and programmable logic controller (PLC). The advanced programmable logic controller (PLC) serves as the "central processing unit" of the control system. The control system is operated via a touch screen, which greatly improves the automation control level and operational reliability of the boiler, and makes the operation more convenient and intuitive.



该产品 是一套的已嵌入式低功耗CPU为核心（主频400MHz）的高性能嵌入式一体化触摸屏。该产品设计采用了高亮度TFT液晶显示屏（分辨率800×480），四线电阻式触摸屏（分辨率4096×4096）。同时还预装了MCGS嵌入式组态软件（运行版），具备强大的图像显示和数据处理功能。

PLC触摸屏的控制系统，具备通讯接口，通过协议与上位机软件，可实现集中和远程监控，上位机适时监控锅炉运行参数及负载变化，更可组成多台锅炉控制网路，实现根据负载变化自动选择锅炉运行台数。

This product is a high-performance embedded all-in-one touch screen centered on an embedded low-power CPU (with a clock frequency of 400MHz). It is designed with a high-brightness TFT LCD display (resolution: 800×800) and a four-wire resistive touch screen (resolution: 4096×4096). Additionally, it comes pre-installed with MCGS embedded configuration software (operational version), featuring powerful image display and data processing capabilities.

The control system of the PLC touch screen is equipped with a communication interface. Through a protocol with the host computer software, it can realize centralized and remote monitoring. The host computer can monitor boiler operating parameters and load changes in real-time, and can also form a control network for multiple boilers, realizing the automatic selection of the number of operating boilers based on load changes.

触摸屏 → 远程监控 → 优质配件

Touch Screen

智能可编程控制器全触摸液晶屏,采用中文操作、动态图形化显示,设备可实现自动化运行及手动运行，使操作简单轻松。

The intelligent programmable controller features a full-touch LCD screen, allowing for Chinese-language operation and dynamic graphical display. The device can operate automatically or manually, making the operation simple and easy.

Remote Monitoring

标配RS485通讯接口,通过协议与上位机软件,可组建多台锅炉联动的控制网络,上位机适时监控锅炉运行参数及负载变化,根据实时负载变化,自动选择运行台数,控制系统终端可实现集中控制和远程控制。

Equipped with a standard RS485 communication interface, a control network for multiple boiler linkage can be formed through a protocol and host computer software. The host computer monitors boiler operating parameters and load changes in real time, automatically selects the number of operating boilers based on real-time load changes, and the control system terminal can achieve centralized control and remote control.

Premium Accessories

触摸屏标配昆仑通态,控制使用智能可编辑控制器。

The touch screen is equipped with Kunlun Tongtai as standard, and the control system utilizes an intelligent editable controller.

优质服务 >>>
HIGH QUALITY SERVICE

高效.安全.专业
Efficient, safe and professional

优质的产品更需要优质的服务
High-quality products require even higher-quality services

出现故障的时候，您是否需要快捷、专业的帮助，因为故障意味着昂贵的成本!
在对既有的系统进行更新升级的时候，您是否需要支持!
福士德技术将随时待命，
为您提供高效、安全、专业的服务!

When a malfunction occurs, do you need prompt and professional assistance? Because malfunctions mean high costs!

Do you need support when updating and upgrading your existing system?

Firstd Technology will be on standby at all times to provide you with efficient, safe, and professional services!

33个客服中心
200个服务网点
33 customer service centers
200 service outlets

全国布局客服中心,服务更便捷
Nationally distributed customer service centers ensure more convenient service

只有站在顾客的角度为顾客着想，才能赢得市场。福士德严格按照国家规定的三包政策做好售后服务。在全国设立了33个客户服务中心，200多个售后服务网点,全程支持您在使用过程中遇到的任何问题。

Only by standing in the customers' shoes and thinking for them can we win the market. Firstd strictly adheres to the three-guarantee policy stipulated by the state to provide quality after-sales service. We have established 33 customer service centers and more than 200 after-sales service outlets across the country, providing full support for any issues you may encounter during use.

工程师
在线技术支持
Engineers' Online Technical Support

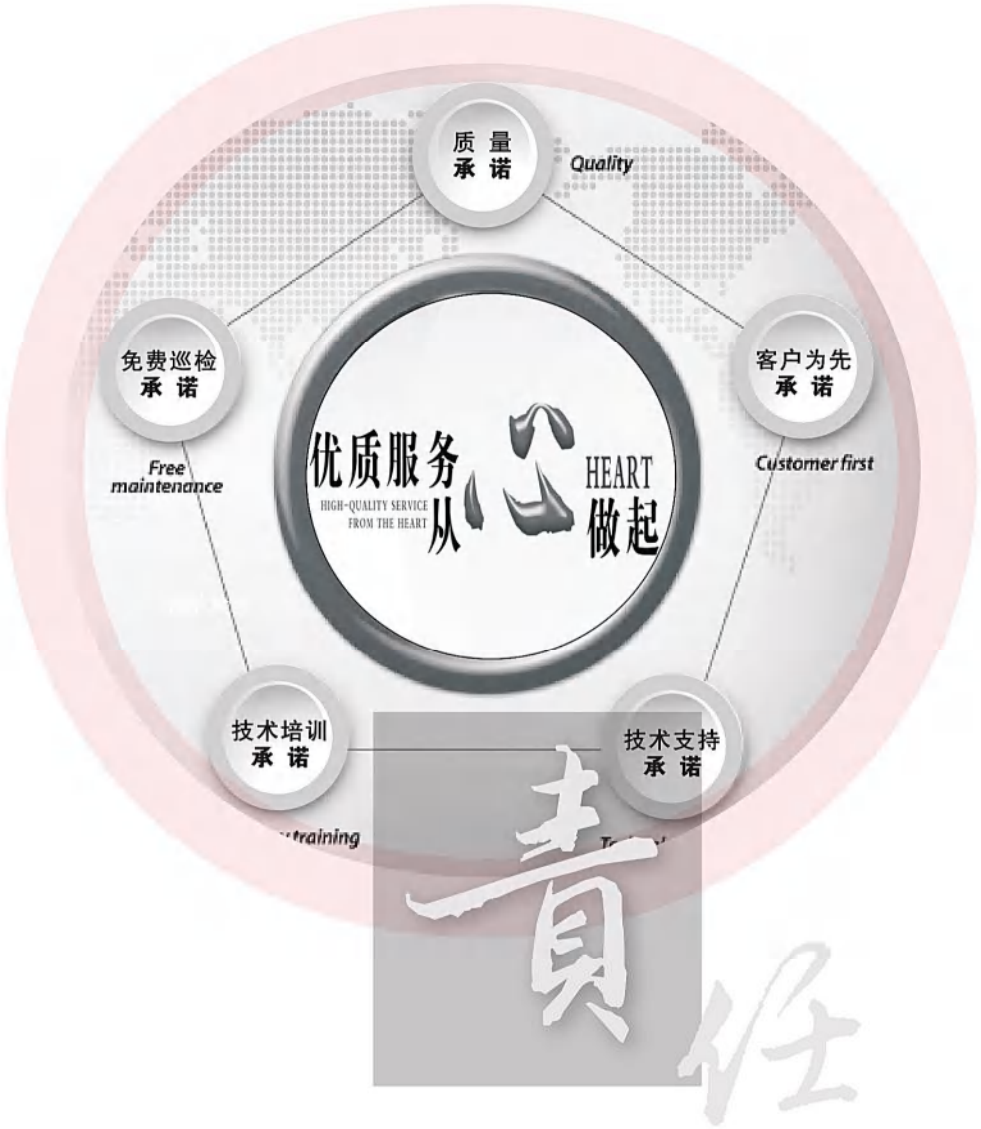
随时待命：专业的服务
On call: professional service

我们的客户服务每天24小时时刻待命。得益于我们精心编织的服务区域网络，我们能够确保最短的反应时间，除了维护服务，故障跟踪和维修，我们还为您提供系统常规检查支持，如果您不确定您的系统是否稳定，是否依旧高效运转，那么我们也将十分乐意协助您，我们将会对您的系统进行分析，如果需要的话，还会对其进行更新升级。

在正常的工作时间内，您可以直接联系当地的客户服务工程师，直接与当地的客户服务工程师联系，可以为您节省大量宝贵的时间。当地客户服务工程师解决不了的问题，客户可以拨打我们的24小时：服务专线400-180-1966，我们将通过电话对于您的问题给予专业的、合理化建议，定制的解决方案。

Our customer service is available 24/7. Thanks to our meticulously established service area network, we can ensure the shortest response time. In addition to maintenance services, fault tracking and repairs, we also provide you with regular system inspection support. If you are unsure whether your system is stable and still operating efficiently, we will be more than happy to assist you. We will analyze your system and, if necessary, perform updates and upgrades.

During regular working hours, you can directly contact your local customer service engineer, which can save you a significant amount of valuable time. If the local customer service engineer is unable to resolve the issue, you can call our 24-hour service hotline at 400-180-1966. We will provide professional and reasonable suggestions as well as customized solutions for your problems over the phone.



合作客户 >>>

COOPERATIVE CLIENTS

20年来，我们以卓越的产品质量、优质的全方位服务、合理的产品价格不断赢得客户的信赖，产品远销到非洲、欧洲、大洋洲等十几个国家和地区，累计销售锅炉10000多台/套。

Over the past 20 years, we have continuously earned the trust of our customers with our excellent product quality, high-quality comprehensive services, and reasonable product prices. Our products are exported to more than a dozen countries and regions in Africa, Europe, Oceania and other regions, with a cumulative sales volume of more than 10,000 boilers/units.

吉利汽车 GEELY AUTO
长城汽车
中国一汽
CATL 宁德时代
SVOLT 蜂巢能源
HITHIUM 海辰新能源
远航锦锂
CHINACAS 中国燃氣
ENN新奥
ZHEJIANG ENERGY 浙江能源
HNEC 河南能源
港华燃气 Towngas
万达集团 WANDA GROUP
正大集团 CP GROUP
MUYUAN
海大集团 HAID GROUP
the mixc 萬象城
OCT 華僑城地产
世贸中心
新乡国际商务中心
红星·美凯龙 MACALLINE 全球家居品牌典范
鑫邦集团 XINBANG GROUP
西安地铁 XI'AN METRO
郑州地铁
北京丰台火车站
中铁武汉局
郑州铁路局
中国石化 SINOPEC
中国石油
1905 延长石油

中国中铁 CREC
中国华能 CHINA HUANENG
中国铁建 CRCC
中国建筑 CSCEC
DTP 大唐国际
中国电信 CHINA TELECOM
China unicom 中国联通
中国人寿
中国建设银行 China Construction Bank
中国银行 BANK OF CHINA
中国农业银行
ICBC 中国工商银行
中国烟草 CHINA TOBACCO
国家电网公司 STATE GRID CORPORATION OF CHINA
SINOPHARM 中国医药集团
1953
1952
301 HOSPITAL OF PLA
1905
SHANXI NORMAL UNIVERSITY
JIANGNAN UNIVERSITY
1902
Xi'an Polytechnic University
ANYANG NORMAL UNIVERSITY
1910
XI'AN INTERNATIONAL UNIVERSITY
如家酒店集团
汉庭酒店 HOTEL
MOTEL 莫泰连锁旅店
HAPPY VALLEY 欢乐谷
古北水镇