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泰山集团
燃油、燃气系列锅炉
产品手册

TAI SHAN GROUP OIL AND GAS-FIRED
FIRED SERIES BOILERS MANUAL

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企业简介

corporation introduction

泰山集团 股份有限公司位于驰名中外的泰山脚下，公司北邻京沪高速公路、东邻京沪铁路、西邻京福高速公路，距离济南国际机场 70 公里、青岛国际港口 480 公里，交通便利。

泰山集团股份有限公司持有 A 级锅炉制造许可证、1 级锅炉安装许可证和 A1、A2 级压力容器制造许可证。公司是中国工业锅炉协会副理事长单位、全国 500 家最大机械工业企业、全国 500 家最佳经济效益工业企业、全国 500 家重合同守信用企业、中国大企业综合竞争力 500 强、自主创新能力行业十强企业、全国 AAA 级信誉企业。集团董事长曹西森被评为首届“中国十大优秀民营企业”。

泰山集团股份有限公司下辖 10 个产品制造子公司、2 个产品开发中心和 1 个国际贸易公司；拥有职工 4100 人，其中各类专业技术人员 860 余人，占职工人数的 20.8%，企业总占地 63 万平方米，总资产 28 亿元。目前，公司已形成年产锅炉 650 台 /8500 蒸吨的生产能力。

多年来，泰山集团一直致力于高效节能环保产品的研发和制造，产品一直畅销不衰。集团多种产品填补国内空白，获得“国家级新产品”、“中国十大畅销名牌锅炉”、“全国消费者信得过产品”、“国家优秀节能产品”称号。

集团主要锅炉产品包括：

1. WNS 系列全自动燃油、燃气蒸汽锅炉容量为 1t/h~20t/h，热水锅炉容量为 0.7MW~14MW。
2. SZS 系列全自动蒸汽锅炉容量为 4t/h~75t/h，热水锅炉容量为 4.2MW~70MW。
3. 循环流化床蒸汽锅炉容量为 35t/h~670t/h，热水锅炉容量为 29MW~116MW。
4. QXL 系列大型热水锅炉容量为 46MW~84MW。
5. DZL 系列新型水火管锅壳式蒸汽锅炉容量为 1t/h~50t/h，热水锅炉容量为 0.7MW~64MW。
6. SZL 系列水管蒸汽锅炉容量为 2t/h~25t/h，热水锅炉容量为 1.4MW~17.5MW。
7. SHL 系列水管散装蒸汽锅炉容量为 6t/h~35t/h，热水锅炉容量为 4.2MW~29MW。
8. 引进芬兰诺维特先进技术生产的各种容量燃油、燃气蒸汽锅炉容量为 1.5t/h~200t/h，热水锅炉容量为 1MW~116MW。
9. 工业煤粉锅炉产品，蒸汽锅炉容量为 1t/h~25t/h，热水锅炉容量为 0.7MW~17.5MW。
10. 高压 (P≥10MPa) 单层压力容器，三类低、中压容器及一类、二类压力容器。

泰山集团技术开发中心拥有中高级技术人员 300 余人，其中专业从事锅炉设计开发的人员 100 余人。中心配有先进完善的计算机辅助设计系统、EDMS 图档管理系统、CAPP 和 BOM 系统等信息化软件系统。中心 1995 年被认定为“省级技术开发中心”，被科技部授予“CAD 应用国家示范企业”称号。

泰山集团坚信高质量的产品源于高素质的制造队伍、优良的生产条件、先进的检测手段及完善的质量管理。公司拥有 48000 平方米的锅炉生产车间和精良的生产、检测设备，坚持以提供零缺陷产品为最终目标，建立健全了严格的质量管理体系并通过了 ISO9001 国际质量管理体系认证。集团始终遵循让客户满意的服务宗旨，建立了覆盖全国的客户网络，为客户提供全方位的售后服务。

公司大力实施“技术创新、市场创新、管理创新”为内容的创新战略，企业综合实力不断增强，形成投资多元化、经营集团化、管理精细化的生产经营模式。泰山集团把自己的发展理念定位在“超越现在、领先未来”上。为此，她将不断创新、不断发展、永不满足。



Corporation Introduction

企业简介

Taishan Group Co., Ltd lies at the foot of the world-famous Mount Tai, China. With Beijing-Shanghai Expressway to the north; Beijing-Shanghai Railway to the east; Beijing-Fuzhou Expressway to the west; 70 kilometers to Jinan International Airport and 480 kilometers to Qingdao Port, The transportation is very convenient .

Taishan Group Co., Ltd is the Vice Chairman of the Industrial Boiler Trade Association (IBTA) of China and has "Class A" boiler manufacturing license, "Class A1 and A2" pressure vessel manufacturing license and Class I installation license. It is awarded as the "500 Largest Machinery Industrial Enterprises", "500 Most Profitable Industrial Enterprises", "500 Contract-binding and Trustworthy Enterprises", "Top 500 Enterprises in Terms of Comprehensive Competitiveness", and it enjoys the "AAA Class Credit Standing" of China and "Top 10 Enterprises in Terms of Independent Innovation Ability in the Boiler Industry". Mr. Xisen, Cao, Chairman of the Taishan Group was awarded as "Top 10 Entrepreneurs of Private Enterprises of China". Taishan Group Co., Ltd has ten subsidiary manufacturing companies, two product development centers and one import and export trade company. Covering an area of 630,000 square meters, Taishan Group has 4100 employees, 860 (20.8%) of which are professional technical personnel. Its total assets are 280 million yuan. Currently, Taishan Group has the annual manufacturing ability of 650 sets/8500t boilers.

For many years, Taishan Group has been dedicating to designing and developing of the high efficiency and energy-saving products, which are always sold well. Many products have filled the gap of China. They are awarded "State-level New Products", "10 Most Popular Famous Brand Boilers of China", "Products that are Trusted by Customers at State Level" and "State Level Energy-saving Products of China".

The main products of Taishan Group are:

1. The WNS fully automatic oil and gas fired steam boilers from 1t/h to 20t/h, hot water boilers from 0.7MW to 14MW.
2. The SZS fully automil steam boilers from 4t/h to 75t/h, hot water boilers from 4.2MW to 70MW.
3. The circulating fluidized bed boilers from 35t/h to 670t/h, hot water boilers from 29MW to 116MW.
4. The QXL series large hot water boilers from 46MW to 84 MW.
5. The new type DZL water-fire tube shell boilers from 1t/h to 50t/h, hot water boilers from 0.7MW to 64MW.
6. The SZL water tube steam boilers from 2t/h to 25t/h, hot water boilers from 1.4t/h to 17.5MW.
7. The SHL water bulk steam boilers from 6t/h to 35t/h, hot water boilers from 4.2MW to 29MW.
8. Boilers of various capacities based on the introduced technology from Noviter Finland. They include oil and gas fired steam boilers from 1.5t/h to 200t/h, hot water boilers from 1MW to 116MW.
9. Industrial coal powder fired boilers and steam boilers from 1t/h to 25t/h, hot water boiler from 0.7MW to 17.5MW. Pulverized coal boilers.
10. High pressure ($P \geq 10\text{MPa}$) single layer pressure vessel, Third-class low & middle pressure vessel and One-class, Second-class pressure vessel.

The R&D Center of Taishan Group has over 300 medium and senior technical personnel, more than 100 of which specializes in the design and development of boilers. The center is equipped with the excellent and advanced CAD system, EDMS picture and document management system and information software systems including CAPP and BOM etc. The center was recognized as the "provincial level technology development center" in 1995. And it was awarded by Ministry and Science and Technology as "State-level Model Enterprise in CAD Application".

Being firmly aware that that high quality originates from excellent workers, good working conditions, advanced testing methods and perfect quality control, Taishan Group has boiler manufacturing workshops of 48,000 square meters and good production and testing equipment. Aiming at providing flawless products, Taishan group establishes and improves the strict quality management system and has got the "ISO 9001" certification. Emphasizing satisfying customers, Taishan Group has established the customer service network all over China to provide all-round after sales service for customers.

Implementing the innovation strategy with contents of "technology innovation, market innovation and management innovation", Taishan Group has improved the comprehensive strength and formed the production and operation mode of "diversified investment", "group operation", and "lean management". With the development concept of "surpassing the present and leading in the future", Taishan Group will continuously innovate and develop with higher aims to achieve.



WNS系列 全自动燃油、燃气锅炉

WNS系列全自动燃油、燃气锅炉

采用波纹炉胆,

螺纹烟管, 高效节能;

采用国际先进的

卧式三回程湿背式结构,

辅以全自动控制系统,

结构合理, 操作方便,

运行安全等特点。

WNS SERIES AUTOMATIC OIL-FIRED, GAS-FIRED BOILERS

WNS series automatic oil-fired, gas-fired boilers

were adopted advanced international

three-pass and wet back structure.

The boilers were matched excellent

imported brand burners and high automatic

control system. The boilers have the

characteristics of reasonable structure,

safely running, high efficiency, energy saving

and conveniently operate.





WNS系列全自动燃油、燃气热水锅炉技术参数

TECHNICAL DATA OF WNS SERIES AUTOMATIC OIL—FIRED ,GAS—FIRED ,
HOT—WATER BOILERS

型号 MODEL	WNS0.7-0.7	WNS1.4-0.7	WNS1.4-1.0	WNS2.1-1.0	WNS2.8-0.7	WNS2.8-1.0	WNS4.2-0.7/	WNS4.2-1.0/
参数名称 PARAMETERS	/95/70-Y(Q)	/95/70-Y(Q)	/95/70-Y(Q)	/95/70-Y(Q)	/95/70-Y(Q)	/95/70-(Q)	95/70-Y(Q)	95/70-Y(Q)
额定热功率(MW) RATED HEAT OUTPUT	0.7	1.4	1.4	2.1	2.8	2.8	4.2	4.2
额定出水压力(MPa) WORKING PRESSURE	0.7	0.7	1.0	1.0	0.7	1.0	0.7	1.0
额定出口/进口水温(℃) RATEDOUTLET / INLETTEMPERATURE	95/70	95/70	95/70	95/70	95/70	95/70	95/70	95/70
适用燃料 FUELS SUITABLE	轻油、天然气、城市煤气、液化气 Light oil Natural gas Coal gas Liquefied gas							
使用电源(AC) ELEC. POWER	380V/50Hz							
排烟温度(燃油/燃气)(℃) TEMPERATURE OFDRAN SMOKE (OIL/GAS)	166/167	165/167	166/168	165/166	165/166	165/166	166/167	168.5/169
设计热效率(燃油/燃气)(%) EFFICIENCY(OIL / GAS)	91.77/ 91.43	91.04/ 90.66	91.8/ 91.6	91.14/ 90.76	91.2/ 90.87	91.2/ 90.87	91.26/90.87	91.26/90.87
额定燃料消耗量(燃油/燃气) (kg/h/Nm ³ /h)RATED FUEL CONSUMPTION (OIL/GAS)	64/ 77.3	128.9/ 156.1	128/ 154.4	193.2/ 233.8	257.3/ 311	257.3/ 311	385.7/ 463.3	385.7/467
适用海拔高度(m) LIMIT OF HEIGHT ABOVE SEALEVEL	≤1000							
锅炉运输尺寸(m) L×B×H	3.13×1.6 ×2.04	4.1×2.1 ×2.434	4.1×2.1 ×2.434	4.765×2.166 ×2.58	4.765×2.166 ×2.58	4.765×2.166 ×2.58	5.57×2.4 ×2.714	5.57×2.4 ×2.714
出水法兰通径(mm) LD. OF OUTLET	65	100	100	125	125	125	150	125
回水法兰通径(mm) LD. OF RETURNWATER	65	100	100	125	125	125	150	125
烟囱口径(mm) LD. OF CHIMNEY	φ300	φ350	φ350	φ400	φ500	φ500	φ600	φ600

- 本表说明：**
- 本表中锅炉热效率，燃料消耗量，按轻油和天然气计算。
所用轻油热值为42915KJ/Kg,所用天然气热值为35588KJ/Nm³。
 - 表中所列锅炉运输尺寸不包括燃烧器尺寸。

INSTRUCTION OF THIS TABLE:

- The thermal efficiency and fuel consumption of the boiler calculated as light oil ,natural gas ,
The heat value of light oil is 42915KJ/Kg ,The heat value of natural gas is 35588KJ/Nm³
- The boiler size listed in the table non—including the burner.

型号 MODEL	WNS4.2-1.0/	WNS5.6-1.0/	WNS5.6-1.0/	WNS7-1.0/	WNS7-1.0/	WNS10.5-1.0/	WNS10.5-1.25	WNS14-1.0/	WNS14-1.25/	WNS14-1.6/
参数名称 PARAMETERS	115/70-Y(Q)	95/70-Y(Q)	115/70-Y(Q)	95/70-Y(Q)	115/70-Y(Q)	95/70-Y(Q)	/115/70-Y(Q)	95/70-Y(Q)	115/70-Y(Q)	130/70-Y(Q)
额定热功率(MW) RATED HEAT OUTPUT	4.2	5.6	5.6	7	7	10.5	10.5	14	14	14
额定出水压力(MPa) WORKING PRESSURE	1.0	1.0	1.0	1.0	1.0	1.0	1.25	1.0	1.25	1.6
额定出口/进口水温(℃) RATEDOUTLET / INLETTEMPERATURE	115/70	95/70	115/70	95/70	115/70	95/70	115/70	95/70	115/70	130/70
适用燃料 FUELS SUITABLE	轻油、天然气、城市煤气、液化气 Light oil Natural gas Coal gas Liquefied gas									
使用电源(AC) ELEC. POWER	380V/50Hz									
排烟温度(燃油/燃气)(℃) TEMPERATURE OFDRAN SMOKE (OIL/GAS)	167/168	168.3/169	167/168	160/165	165/168	160/162.8	166/166.6	151/154	158/160	166.4/168.7
设计热效率(燃油/燃气)(%) EFFICIENCY(OIL / GAS)	91.12/90.78	91.13/90.74	92/91.78	92.43/91.92	92.2/91.78	91.93/91.55	92.17/91.87	92.8/92.41	92.5/ 92.14	91.7/ 91.3
额定燃料消耗量(燃油/燃气) (kg/h/Nm ³ /h)RATED FUEL CONSUMPTION (OIL/GAS)	386/ 467.5	515.1/ 623.7	509.5/616.6	635.4/769.6	635/770.7	957.3/1159.2	954.8/1155.1	1264/1531.2	1268.3/ 1535.7	1276/ 1550
适用海拔高度(m) LIMIT OF HEIGHT ABOVE SEALEVEL	≤1000									
锅炉运输尺寸(m) L×B×H	5.57×2.4 ×2.714	6.49×2.91 ×3.23	6×2.645 ×3.053	6.62×2.7 ×3.374	6.334×2.814 ×3.235	7.644×3.236 ×3.598	7.644×3.236 ×3.598	7.85×3.5 ×3.5	7.85×3.5 ×3.5	8.139×3.616 ×3.64
出水法兰通径(mm) LD. OF OUTLET	125	200	200	200	200	250	200	250	250	200
回水法兰通径(mm) LD. OF RETURNWATER	125	200	200	200	200	250	200	250	250	200
烟囱口径(mm) LD. OF CHIMNEY	φ600	φ740	φ740	φ740	φ740	1300×500	1300×500	1300×500	1300×500	1300×500



TECHNICAL DATA OF WNS SERIES AUTOMATIC GAS-FIRED STEAM BOILERS

[illegible]

● The boiler size listed in the table non—including the burner.

[illegible]



TECHNICAL DATA OF WNS SERIES AUTOMATIC OIL-FIRED STEAM BOILERS

[illegible]

● The boiler size listed in the table non—including the burner.

[illegible]



SZS

系列全自动燃油、 燃气锅炉



SZS系列燃油、燃气锅炉

采用D型布置、自然循环、双锅筒水管锅炉，
锅筒纵向布置、全膜式水冷壁结构、微正压燃烧。
炉膛由膜式壁包覆而成，烟气从炉膛出口进入上、
下锅筒之间连接的对流管束，烟气流过对流管束
后，进入尾部受热面——钢制螺旋翅片省煤器。

SZS series oil-fired, gas-fired boilers

With D-type arrangement, natural recycling, double-drum water tube boiler
Longitudinal drum, Full membrane wall structure, Slightly positive pressure
combustion Furnace is wrapped by membrane wall, smoke enter the convection
bank which is between the upper and lower drum from furnace exit, and then
enter the tail heating surface—— steel spiral fin economizer.



该系列锅炉具有以下特点：

- 1、全膜式壁结构，本体不漏风，排烟损失小，热效率高。
- 2、结构紧凑，安装体积小，节省投资。
- 3、蒸汽锅炉采用自然循环并采用较大的截面比，热水锅炉采用引设循环，水循环安全、可靠。
- 4、配备知名、高效品牌燃烧器及辅机、附件，做到全自动运行。
- 5、控制完善，保证锅炉安全运行。

The unique advantages of this series boiler as following:

- 1, Full membrane wall structure, Body is not leakage, Exhaust loss is little, high thermal efficiency.
- 2, Compact Structure, Installing small, Less investment.
- 3, Steam boilers adopts natural recycling and larger cross-section, hot-water boiler adopts ejector cycle, water circulation is safe and reliable.
- 4, With well-known, highly efficient burner auxiliary equipment and accessories, fully automatic operation.
- 5, Perfect control system to ensure the safe operation of the boiler.



[illegible]

- The thermal efficiency and the fuel consumption of the boiler calculated as light oil, natural gas, The heat value of light oil is 42915KJ/Kg, The heat value of natural gas is 35588KJ/Nm³
- The boiler size listed in the table non—including the burner.

[illegible]

[illegible]



技术合作产品

为了适应全球范围内的高效清洁燃烧技术的大量用户需求，我们与世界范围内具有先进技术的能源行业公司进行相关技术合作，开发出适用于不同用户要求的以各种燃油、燃气为燃料的热水、蒸汽及发电锅炉。并形成从热水1MW、蒸汽1.5t/h—热水116MW、蒸汽200t/h的合作技术燃油燃气锅炉系列产品。同时与世界范围内的该系列原配套辅机制造厂商进行密切合作，以打造完美的符合用户要求的锅炉产品为终极目的。

TECHNICAL COOPERATION PRODUCTS

In order to meet the needs of combustion technology of high-efficiency and non-pollution around the world, we have been cooperating with related international energy sources companies which have advanced combustion technologies. We have researched out every kind of gas and/or oil fired hot water boiler, steam boiler and power boiler to meet any need of customers. The technical co-operation products series are 1MW—116MW for hot water boilers and 1.5t/h—200t/h for steam boilers. Meanwhile, we have been closely cooperating with original auxiliary manufacturers. Our aim is only for making perfect boilers to satisfy all customers.



热水锅炉站 3×116MW
天然气 北京 中国 1998
Hot water boiler plant 3×116MW
Natural gas Beijing China 1998



优质的服务

我们不仅为用户提供优质的锅炉产品而且为用户提供运行和维护手册，试运行和监造备忘录等文件。我们也提供人员培训，售后服务和维护，使用户无后顾之忧。

现代化的设计工具

该系列锅炉技术使用世界上最先进的Vertex设计软件进行锅炉设计，FLUENT—CFD软件进行热力和流体力学计算。所有的项目都有完备规整的资料文件，这位高效的设计工作和今后的产品发展提供了良好的基础。

技术合作方

芬兰诺维特公司—诺维特是一家设计和提供中型热水和蒸汽锅炉站的芬兰企业。诺维特锅炉既能使用液体和气体燃料，也能燃烧生物燃料。

GOOD SERVICES

We are not only offer high quality group for client but also offer run and maintenance handbook, test run and produce memoir and so on, we also offer personnel train, after service and maintenance, this can made our client no grief after buy our product.

THE MODERN DEVELOPING TOOL

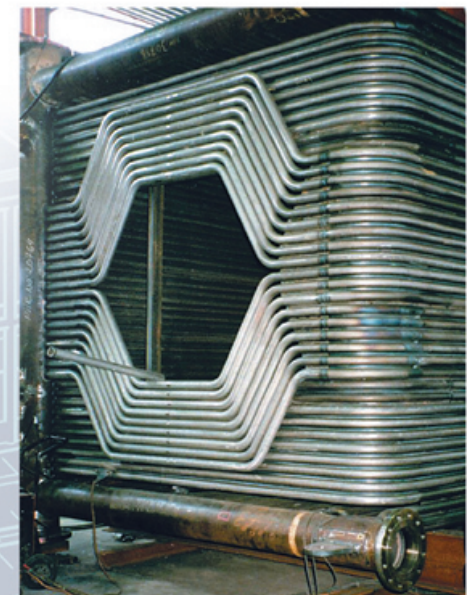
The boiler cooperation technologies use the most advanced Vertex design software for dimensioning and design and Fluent—CFD software for thermal and fluid dynamic dimensioning. The careful documentation of all deliveries has created a good base for efficient design work and for continuous product development.

TECHNICAL COOPERATION PARTNER

Noviter Oy
Noviter is a Finnish company, which designs and delivers medium-sized hot water and steam boiler plants.
Noviter boilers use not only fluid and gaseous fuels but also bio-fuels.



厂制模块化蒸汽锅炉站
15.4t/h
天然气/轻油
Lzhevsk 俄罗斯1999
Modularize steam boiler plant
15.4t/h
Natural gas/light oil
Lzhevsk Russia 1999



可靠高效的锅炉站解决方案

对于每一个项目，我们的目的都是让客户在产品的整个使用期内满意，这保证了与用户的继续成功合作。我们设计和制造上独到的解决方案有力地保证了：

- 卓越的经济性
- 高运行效率
- 强实用性
- 可靠的自动化
- 各种工况下最佳的运行效果
- 简便的维护

环境保护

环境保护在锅炉行业变得越来越重要。该系列技术在设计所有的产品时，都对降低污染物的排放给予了特别的关注。例如：采用大炉膛和低氮氧化物燃烧器，并对燃烧过程进行合理的控制。因此，诺维特的产品既能满足用户也能满足社会对环境的要求。

合作技术在中国

1998年为建国50周年重点工程——北京市热力集团双榆树供热厂一期工程的三台116MW锅炉站提供了全套NWTB锅炉技术、燃烧设备及相关仪表阀门和辅助设备。由于一期工程卓越的运行效果和优质的服务，诺维特公司又在2001年底赢得二期工程。诺维特在双榆树供热厂二期工程的三台116MW锅炉站中继续提供全套NWTB锅炉技术、燃烧设备及相关仪表阀门和辅助设备。2003年合作的项目——40t/h油气混烧NSTB饱和蒸汽锅炉运行效率高，出汽均匀稳定，获得用户好评。

RELIABLE HIGH-EFFICIENCY BOILER PLANT SOLUTIONS
IN every boiler plant delivery,our aim is total customer satisfaction lasting throughout the operating life of the product,thus ensuring continuing successful co-operation.In design and manufacture we aim for solutions which will guarantee:Excellent economy High operating efficiency Strong usability Reliable operating automation Optimal operation with all loads Easy maintenance.

ENVIRONMENTAL CONTROL

Environmental protection is becoming more important in boiler business. In the design of all the series products we pay particular attention to reducing to let off pollutant.For example, we design biggest furnace and use low NO_x burner,meanwhile, we optimal control in the combustion process,Therefore,our boiler products can meet environmental requirements of both customers and society.

TECHNOLOGY COOPERATION IN CHINA

The Noviter company supplied all NWTB boiler technology,burning equipments, correlative instrument valves and assistant equipments of the three 116MW boilers to the Beijing Heat Group Shuangyushu Heat Supply Factory's first term project that was the important project for The 50years National in 1998. By reason of the excellence running effect and the knight service in the First term project,the Noviter company gains the Second term project in the last 2001. The Noviter company continued supply NWTB boiler technology,burning equipments, correlative instrument valves and assistant equipments of the three 116MW boilers in the Shuangyushu Heat Supply Factory's second term project.The cooperation item of 2003-40t/h gas and oil burning NSTB saturated steam boiler run high efficiency,let steam symmetrical and tranquilization,and be praised by the users.



燃油燃气蒸汽锅炉

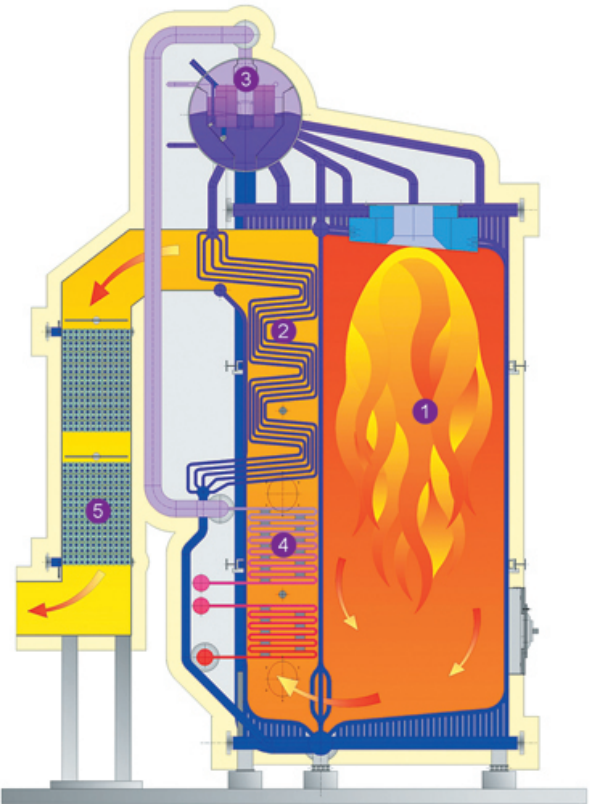
立式水管蒸汽锅炉（NSTB型）

NSTB型锅炉是自然循环饱和或过热蒸汽锅炉，立式布置，底部支撑。炉膛是膜式水冷壁结构，对流部分也由膜式水冷壁包围。根据额定出力的不同，NSTB型锅炉可以在炉膛顶部装配一个或多个燃烧器。NSTB型锅炉的优势在于：结构紧凑，占地面积小，安装周期短；受热均匀，水循环可靠，出汽稳定；燃烧清洁；自动化程度高等。NSTB型锅炉的容量范围为 10—200t/h。

OIL-AND GAS-FIRED STEAM BOILERS
THE NSTB-TYPE WATER-TUBE STRUCTURED
STEAM BOILER

Depending on nominal output, NSTB boilers are equipped with either one or more burners and are designed to produce either saturated or super-heated steam. The boilers are supported from the ground and the steam flow is based on buoyancy-driven natural circulation. Furnaces are membrane wall construction. Convection parts are also surrounded by membrane wall. The advantages of NSTB boilers are compact structures,short installation time, average heating, reliable water circulation, stable steam output, clean combustion and advanced automation. The capacity range of the NSTB boiler is 10-200t/h.

- 1 炉膛 furnace
- 2 对流部分 convection part
- 3 锅筒 drum
- 4 过热器 super-heater
- 5 省煤器 economizer



NSTB型10—60吨/时锅炉尺寸参数表

Dimensions and data of NSTB-type steam boiler from 10t/h to 60t/h

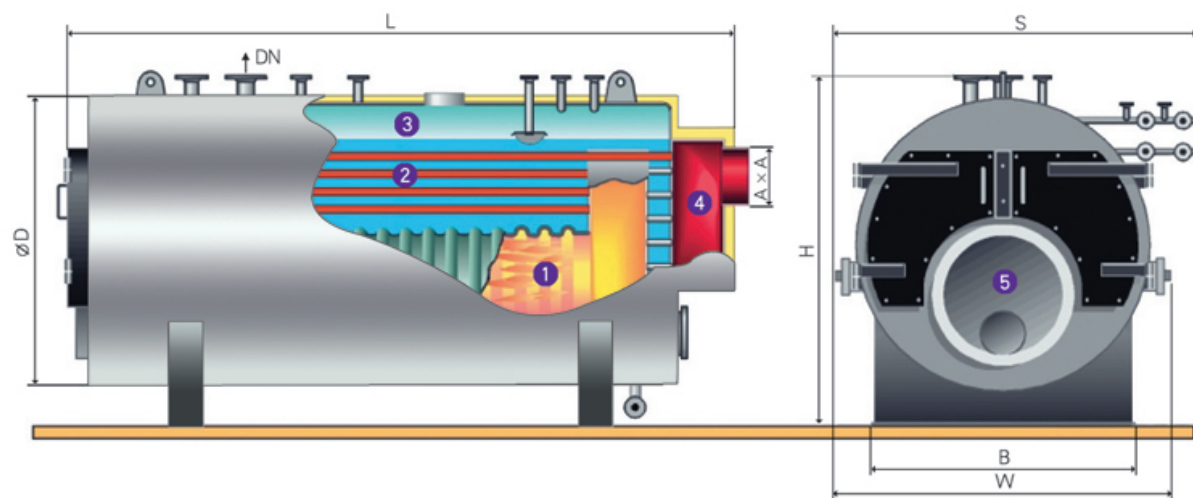
燃 料 Fuels	天 然 气、煤 气、重 油、轻 油 等 Natural Gas / coal Gas / Heavy Fuel Oil / Light Fuel Oil etc.									
	10.0	15.0	20.0	25.0	30.0	35.0	40.0	50.0	60.0	t/h
蒸汽出力 Steam Capacity	6.5	9.8	13.1	16.4	19.6	22.93	26.2	32.7	39.3	MW
输出热量 Thermal Output	1-4.0									
蒸汽压力 Steam pressure	≥94									
锅炉热效率 Efficiency										
尺 寸 Dimensions										
外形高度 Overall Height	8.81	9.39	9.62	10.47	11.07	11.42	11.82	12.27	13.32	m
外形宽度 Overall Width	4.56	4.96	5.26	5.57	5.82	6.32	6.32	6.77	7.07	m
外形长度（不包括省煤器） Overall Length (Without Economiser)	3.79	4.32	4.70	5.11	5.46	6.10	6.10	6.60	7.08	m
锅筒直径 Drum Diameter	1.50	1.50	1.50	1.70	1.80	1.80	2.00	2.10	2.30	m
锅筒长度 Drum Mantle Length	3.00	3.40	3.70	3.90	4.10	4.50	4.50	4.90	5.10	m
炉膛宽度 Furnace Width	1.88	2.19	2.49	2.64	2.80	3.10	3.10	3.41	3.56	m
炉膛深度 Furnace Depth	1.91	2.21	2.51	2.67	2.82	3.12	3.12	3.43	3.58	m
炉膛高度 Furnace Height	5.00	5.50	5.70	6.30	6.80	7.00	7.30	7.60	8.40	m
对流部分深度 Convection Part Depth	0.53	0.76	0.84	0.99	1.14	1.25	1.37	1.52	1.75	m
出烟口标高 Exhaust Flue Height	0.35	0.50	0.55	0.65	0.75	0.90	0.90	1.05	1.20	m

表中尺寸仅针对压力2.0MPa时。The dimensions are valid with design values 2.0MPa.



热水锅炉站
3×116MW
天然气
北京 中国2002
Hot water boiler plant
3×116MW
Natural gas
Beijing China 2002

卧式火管蒸汽锅炉 (NST型)



NST型锅炉特别适合于小型工业的蒸汽需求。

NST型锅炉是三回程，湿背式火管锅炉，这种结构有如下优点：

结构简单，使用寿命长，可靠性好，并且易于维护保养。

燃烧室的容积热负荷及表面热负荷均满足热效率和环保的要求。

蒸汽室负荷低，锅炉内较大的容水量可以满足负荷的急速变化。

这种锅炉通常配备单独的省煤器。NST型蒸汽锅炉的蒸发量为：

1.5t/h-20t/h。设计压力一般最高为1.6MPa，特别要求为2.0MPa，标准产品可生产饱和蒸汽。根据特殊订单需要也可配置小型过热器，

生产过热蒸汽。当采用两个炉胆的NST型锅炉，容量可高达50t/h。

THE NST-TYPE STEAM BOILER

NST boilers are particularly suitable for small industries. The NST is three-pass, fire-tube steam boiler. Its benefits include simple structure, long operating life, reliability and ease of service and maintenance. Its large water volume allows for big momentary changes in load. The capacity range of the NST standard series is 1.5—20t/h, Design pressure of NST can normally reach to 1.6MPa and specially reach to 2.0 MPa. NST boilers are normally designed to produce saturated steam. NST boilers can also specially be designed to produce superheated steam when equipping small superheaters. NST boilers are also available with two furnaces up to a capacity of 50t/h.

NST型蒸汽锅炉2-12MW尺寸参数

Dimensions and data of NST-type steam boiler from 2MW to 12MW

燃料 Fuels		天然气、煤气、重油、轻油等 Natural Gas / coal Gas / Heavy Fuel Oil / Light Fuel Oil etc.										
出力 Capacity MW	产汽量 Steam generation kg/s t/h	L mm	D mm	H mm	S mm	W mm	A mm	B mm	DN	重量 Weight t	水容积 Water vol. m ³	蒸汽空间 Steam vol. m ³
2.0	0.86	3.1	5230	2470	2650	3040	2730	350	1940	100	10.8	9.0
3.0	1.29	4.6	5480	2670	2850	3190	2860	450	2110	125	13.5	10.6
4.0	1.72	6.2	5680	2920	3100	3440	3150	500	2330	150	17.2	13.2
5.0	2.15	7.7	5930	3070	3250	3550	3210	550	2460	200	19.8	14.7
6.0	2.57	9.3	6030	3270	3450	3750	3460	600	2630	200	22.0	17.1
7.0	3.00	10.8	6180	3370	3550	3810	3550	650	2720	200	24.0	18.5
8.0	3.43	12.4	6980	3470	3650	3940	3650	700	2800	250	27.2	23.2
10.0	4.29	15.4	7280	3720	3900	4130	3780	800	3020	250	32.7	27.0
12.0	5.15	18.5	7630	3820	4000	4220	3860	850	3110	250	36.8	29.5

蒸汽压力参数 Steam pressure: 0.4-1.6MPa;
锅炉热效率 Boiler efficiency: 1. ≥94% (采用省煤器 with economizer) 2. ≥90% (无省煤器 without economizer)

表中尺寸仅针对压力为1.25MPa。 The dimensions are valid with design pressure 1.25MPa.

燃油燃气热水锅炉

立式水火管热水锅炉 (NWTB型)

NWTB型锅炉是强制循环直流热水锅炉，立式布置，底部支撑。炉膛和中间烟道均为膜式水冷壁结构，对流部分是布置有扰流子的火管结构。

根据额定出力的不同，

NWTB型锅炉可以在炉膛顶部装配一个或多个燃烧器。

NWTB型锅炉的优势在于：模块化设计，结构紧凑简单，

全密封结构，占地面积小；制造安装周期短；

燃烧清洁；自动化程度高等。

NWTB型锅炉的通常的容量范围为：

设计压力1.0-2.5MPa，设计温度115℃-180℃，

输出热量21-116MW。

也可提供比标准系列更高出力、

压力和温度的NWTB型锅炉。

OIL-AND GAS-FIRED HOT WATER BOILERS

THE NWTB-TYPE HOT WATER BOILER

The NWTB is a compact and very resistant combined boiler. The fire chamber and

intermediate duct are water-tube structured and the convection part fire-tube structured.

Characteristic to this boiler is efficient heat transfer and clean combustion. Depending

on nominal output, NWTB boilers are equipped with either one or more burners.

The output range of standard boilers is

21-116MW, Outlet water pressure 1.0-2.5MPa ;

Outlet water temperature 115℃-180℃ .

We also design and deliver NWTB boilers

with higher output pressure and temperature values than the standard series. Due to their compact

modular structure the ground occupies of NWTB

boilers are small; the delivery and installation times of NWTB boilers are very short.

NWTB型21MW-116MW热水锅炉尺寸参数

Dimensions and data of NWTB-type Hot

water boiler from 21MW to 116MW

单位: mm

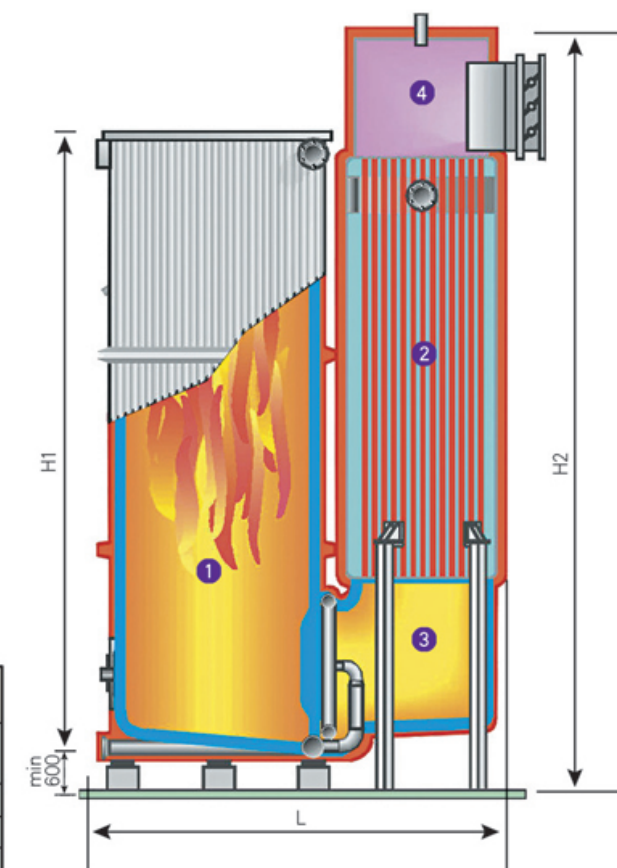
unit: mm

燃料 Fuels	天然气、煤气、重油、轻油等 Natural Gas / coal Gas / Heavy Fuel Oil / Light Fuel Oil etc.			
热功率 Thermal Output	H1	H2	L	Width B
21MW	8300	10500	5800	3600
29MW	8300	11000	6600	3900
42MW	9400	11450	6900	4200
58MW	9300	11000	6900	6600
77MW	10800	11200	7200	7700
116MW	12400	11400	7200	11500

出水压力 Outlet water pressure : 1.0-2.5MPa;
出水温度 Outlet water temperature : 115℃-180℃
锅炉热效率 Boiler efficiency : ≥94%

表中尺寸仅针对压力1.6MPa出水150℃。

The dimensions are valid with design values 1.6MPa and 150℃ .



- 1 水管结构炉膛
water-tube structured fire chamber
- 2 火管结构对流部分
fire-tube structured convection part
- 3 水管结构中间
water-tube structured intermediate duct
- 4 烟室
flue gas chamber

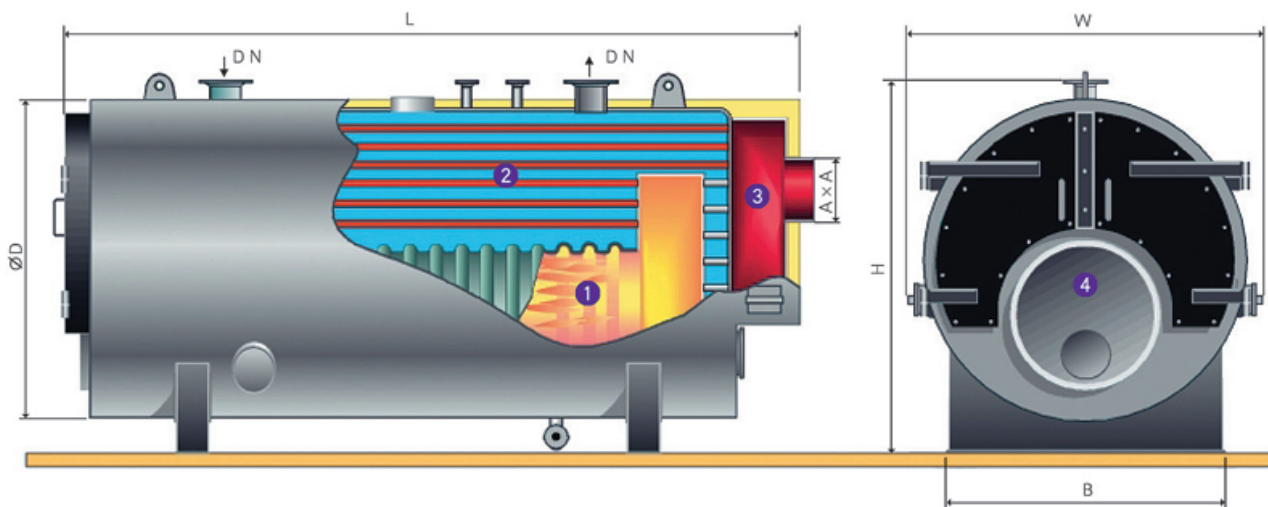
卧式火管热水锅炉 (NWT型)

NWT型锅炉是三回程，湿背式火管锅炉，这种结构有如下优点：
结构简单，使用寿命长，可靠性好，并且易于维护保养。

NWT型锅炉标准系列的容量范围为：燃油时1—14MW，燃天然气时1—21MW；设计压力0.4—1.6MPa；设计温度通常为95—150℃。
特殊定单也可提供更高出力、压力和温度的NWT型锅炉。
NWT型锅炉当布置两个炉胆时，容量可至30MW。

THE NWT-TYPE HOT WATER BOILER

The NWT is a reliable basic boiler with long operating life and such advantages as simple structure and ease of service and maintenance. The output range of NWT boilers is 1—14MW when being fired by oil and 1—21MW when being fired by natural gas. Outlet water pressure 0.4—1.6MPa ; Outlet water temperature 95℃—150℃ . We also design and deliver NWT boilers with higher output, pressure and temperature values and can also supply boilers with two furnaces up to 30MW.



- ① 炉胆 fire chamber
- ② 对流部分的火管 fire-tubes of convection part
- ③ 烟室 flue gas chamber
- ④ 燃烧器开孔 burner hole

NWT型2—14MW热水锅炉尺寸参数

Dimensions and data of NWT-type Hot water boiler from 2MW to 14MW

燃料 Fuels	天然气、煤气、重油、轻油等 Natural Gas/Coal Gas/Heavy Fuel Oil/Light Fuel Oil etc.								
出力 Capacity MW	L mm	D mm	H mm	W mm	A mm	B mm	DN	重量 Weight t	水容积 Water vol. m ³
2.0	4390	2290	2500	2550	350	1850	100	9.1	7.7
3.0	4740	2440	2650	2700	450	1980	125	11.2	9.4
4.0	5490	2590	2800	2850	500	2110	125	14.1	12.1
5.0	5740	2690	2900	2940	550	2200	150	16.8	13.5
6.0	6090	2890	3100	3150	600	2370	150	19.8	16.3
7.0	6340	2990	3200	3200	650	2460	150	22.6	17.4
8.0	6540	3040	3250	3250	700	2500	200	24.0	18.8
10.0	6940	3190	3400	3390	800	2630	200	28.5	22.4
12.0	7590	3290	3500	3450	850	2720	250	33.6	26.5
14.0	7590	3400	3600	3650	900	2800	250	36.5	27.5

出水压力 Outlet water pressure : 0.4—1.6MPa;
出水温度 Outlet water temperature : 95℃—150℃
锅炉热效率Boiler efficiency : 1、≥94% (采用省煤器 with economizer) ; 2、≥90% (不采用省煤器without economizer) 。

表中尺寸仅针对压力为1.6MPa，出水温度为150℃。
The dimensions are valid with design values 1.6 MPa and 150℃ .



蒸汽锅炉 1×40t/h 煤焦油/重油/干气
中国石油大学 中国2004
Steam boiler 1×40t/h Coal tar/Heavy oil/Gas
China oil university China2004



热水锅炉站 3×10MW
重油/天然气 Manta 芬兰2001