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燃煤蒸汽、热水锅炉 Coal-fired Steam & Hot Water Boilers



无锡中正锅炉有限公司

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公司介绍

无锡中正锅炉有限公司是中华人民共和国质量监督检验检疫总局核准的锅炉和压力容器定点制造企业。公司持有A级锅炉制造许可证，BRⅡ级压力容器制造许可证，美国ASME标准“S”（动力锅炉）、“U”（压力容器）许可钢印，并全面通过ISO9001:2000国际质量体系认证。公司座落于风光优美的太湖之滨，占地12万平方米，是一个具有年产12000蒸吨锅炉生产能力的现代化生产企业，为AAA级资信等级企业，历年来被评为无锡市及江苏省的重合同守信用企业、出口名牌企业、高新技术企业、优秀民营企业。

公司拥有一流的生产工艺装备，检测手段齐全，主要设备有：蛇形管生产线、数控盘管生产线、膜式壁生产线、纵环缝自动焊接生产线、钢架自动焊接生产线、数控等离子（火焰）切割机、数控锅筒钻、高速数控平面钻、高速集箱数控钻、100mm三辊数控万能式卷板机、相贯线数控切割、CNC、机器人焊接设备、Φ168数控立体弯管设备、4轴数控弯管机、3维激光切割机、管端成型设备、100T万能材料试验机、金相显微镜、射线探伤仪器、硬度计、光谱分析仪大型热处理炉、喷砂除锈房和喷漆烤漆房等等。

无锡中正锅炉有限公司全面实行计算机信息化管理和6S现场管理。目前主要产品包括工业锅炉、有机热载体锅炉、大型热水锅炉、电站锅炉、余热回收装置（HRSG）、特种余热锅炉、生物质锅炉、压力容器等系列。YLW系列和YY(Q)W(L)系列系列燃煤、燃生物质、燃气有机热载体锅炉、DZL型单锅筒纵置式链条炉排蒸汽和热水锅炉、SZL型双锅筒纵置式链条炉排蒸汽和热水锅炉、WNS型卧式三回程背式蒸汽和热水锅炉、SZS型双锅筒纵置式燃气蒸汽和热水锅炉、SHL型双锅筒横置式链条炉排蒸汽和热水锅炉、循环流化床蒸汽和热水锅炉、与西安交通大学联合研究开发的DHL型角管式大型热水锅炉、与北京之光锅炉研究所技术合作开发的DZL型新型水火管大型热水锅炉、拥有自主知识产权的DHL型单锅筒横置式P型大型热水锅炉、10-220t/h中温中压及高温高压电站锅炉、燃气-燃气轮机联合循环发电余热回收装置、金属行业、化工行业等各行业的余热锅炉、生物质燃料锅炉等400多个品种规格。

“不偏之谓中，中者天下之正道：立天下之正位，行天下之大道。”诚信与敬业为立足市场之根本，技术与质量为领先市场之前提，服务与指导为巩固市场之关键。中正人以用户利益为己任，服务于社会。

COMPANY INTRODUCTION

Wuxi Zozen Boilers Co., LTD is the government designated enterprise of A-grade boilers, BRⅡ. grade pressure containers and ASME "S", "U" manufacturing license that is approved by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China. The Company, situated at the side of beautiful Lake Taihu at Wuxi covering an area of 120,000M², is a modern enterprise with the yearly production capacity of 12000 steam ton. The company has certified for the certificate of ISO9001 quality assurance system, as well as the AAA-grade credit enterprise. It has been evaluated as the Company of Honoring the Contract & Keeping Commercial Integrity, high-tech enterprise, and excellent civil-run enterprise of Wuxi city & Jiangsu Province. Therefore, the Company relies on its professional experts, strict business management and fine production equipments, to manufacture the "ZOZEN" brand boilers and enjoy the reputation in whole China and even in the whole world.

The company has advanced production processing equipment and complete testing method. The main processing equipment are serpent tube line, CNC coiler production line, membrane wall line, vertical & circle welding line, steel frame automatic welding line, digital control plasma (flame) cutting machine, CNC drum drilling, high-speed CNC flat surface drilling, high-speed header digital control drilling, 100mm three roller CNC universal binder, intersecting lines digital control cutting, CNC, robot welding equipment, Φ 168 CNC three-dimensional bending equipment, 4 axis NC tube bending machine, 3D laser cutting machine, pipe end forming equipment, 100T universal material testing machine, metallurgical microscope, x-ray detector, hardness tester, spectrum analyzer, large scale heat treatment furnace, sand blasting and painting etc.

The company comprehensively implements computer information management and 6S site management. The main products include series of: industry boiler, organic heat carrier boilers, hot water boilers, power plant boilers, HRSG, special heat recovery boilers, Biomass boilers and pressure vessels. There are more than four hundred varieties and specifications, i.e. the steam boiler and hot water boiler of YLW series and YY(Q)W(L) series coal fired, biomass fired, gas fired organic heat carrier boiler, DZL type single drum with chain grate, the steam and hot water boilers of SZL type double drum with chain grate, the WNS type horizontal three return back steam and hot water boiler, the SZS type double drum oil/gas combustion D-type steam and hot water boilers, steam and hot water boilers of SHL type horizontal arranged double drum with chain grate, the circulating fluidized bed steam and hot water boilers designed by Tsinghua University, big size DHL corner tube hot water boiler jointly developed with Xi'an Jiao Tong University, the new DZL type water-fire tube (hybrid) hot water boiler jointly developed with the Boiler Research Institute of Beijing Light, the DHL type single horizontal drum P-type large hot water boilers which was self-developed and owns intellectual property right, 10-220t/h medium and high temperature/pressure power plant boilers, combined cycle power generation with waste heat recovery device, the waste heat boilers for the industries of metal, chemical etc. and biomass fuel boilers etc.

The "ZOZEN" people always respect sincerity and business reputation as our marketing principle, and always pursue the market-leading for our technology and product quality, as well as perfect our service and sales guide as the key for consolidating our markets as well. "ZOZEN" people shall abide the aim of protecting the interest of clients as our liability so as to serve the society by our heart!



SHX

系列循环流化床蒸汽、热水锅炉

series circulating fluidized bed steam & hot water boilers

概述:

SHX系列循环流化床锅炉，蒸发量为10~75t/h，蒸汽压力为1.25~2.5MPa，蒸汽温度为194~225℃。热水锅炉7~58MW，供水温度为130℃/150℃，回水温度为70℃/90℃，工作压力为1.0~1.6MPa。循环流化床燃烧（CFBC）技术作为一种新型成熟的高效低污染清洁煤技术，具有许多其它燃烧方式没有的优点。

- 循环流化床属于低温燃烧，因此氮氧化物排放远低于煤粉炉，仅为200ppm左右，并可实现现在燃烧过程中直接脱硫，脱硫效率高。且技术设备经济简单，其脱硫的初投资及运行费用远低于干煤粉炉加烟气脱硫（PC+FCD）。

- 燃料适应性广且燃烧效率高，特别适合于低热值劣质煤。

- 排出的灰渣活性好，易于实现综合利用，无二次灰渣污染。

- 负荷调节范围大，低负荷可降到满负荷的30%左右。

- 在我国目前环保要求日益严格。电厂负荷调节范围较大、煤种多变、原煤直接燃烧比例高、国民经济发展水平不平衡、燃煤与环保的矛盾日益突出的情况下，循环流化床锅炉已成首选的高效低污染的新型燃烧技术。

INTRODUCTION:

SHX CFB boiler: evaporation capacity 10-75t, with steam pressure of 1.25-2.5MPa and the steam temperature is saturated steam and superheated steam. Hot-water boiler 7~58MW, supplies 130℃/150℃ hot wat. Under pressure of 1.0-1.6MPa; the returning water temperature is 70℃/90℃. CFBC technology, being a new type and matured high efficient, low pollution & green technology, has a lot of merits, which can not be found in other combustion method.

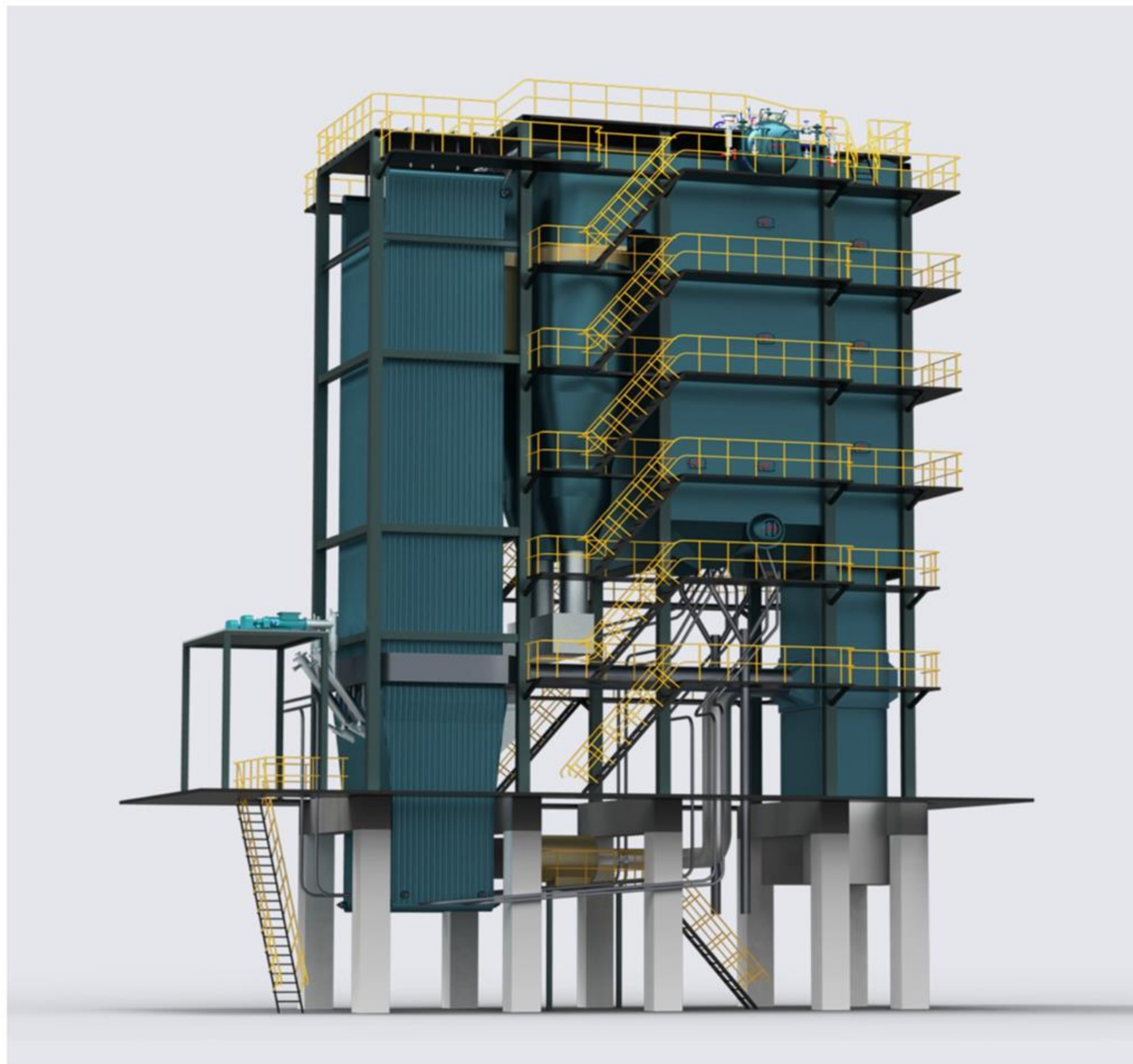
1. CFB belongs to low temperature combustion; therefore, the exhaustion of nitrogen oxide is far more fewer than from coal powder furnace, only 200ppm approximately; at the same time. It is feasible to actualize direct desulfurizing during combustion. The efficiency of desulfurization is high and the equipment is simple and cheap as well. The initial investment for desulfurization and performance cost is a far lower than that of PC+FCD.

2. Extensive fuel adaptability and high combustion efficient, especially suitable for low calorie inferior coal.

3. The exhausted cinder has better activeness, liable to actualize integrated utilization and free from pollution.

4. Wide range for load adjustment, low load may lower to 30% approximately of the rated load.

Currently, requirements for environment protection become stricter daily, and electricity load adjustment range for power plant becomes bigger, varieties of coal supply changeable, direct combustion of raw coal takes higher ratio, national economy develops unevenly in different level, the contradiction between environment protection and coal burning pops out daily more, CFB boiler has become a first choice for high efficiency and low pollution new combustion technology.



制造工艺特点

MANUFACTURING PROCESS FEATURES

锅炉制造工艺

- 钢板下料、圈圆、锅筒、管板钻孔等关键加工工艺全采用先进的数控加工，减少组装应力，延长锅炉使用寿命
- 钢管下料、抛光、除锈、弯制，均采用先进的数控加工工艺

Boiler manufacturing process

- Key processing technology like material preparation and circling of steel plate, drilling of drum and tube plate, etc are all adopted advanced CNC machining process to decrease the assemble stress and extend the boiler working life
- Steel tube preparation, polishing, rust cleaning and bending are all adopted advanced CNC process

锅炉焊接工艺

- 锅炉纵、环缝焊接均采用先进的光电跟踪埋弧自动焊工艺，改善人工操作环境，保证产品焊接质量。
- 管座法兰焊接，采用机器人焊接

Boiler welding process

- Boiler vertical and circular seam weld adopt advanced photoelectric tracking and union melt welding processing to improve the operating environment and ensure the welding quality
- Tube flange weld adopts robot welding

高温旋风分离器

- 高效、耐磨，分离效率 $\geq 98\%$ ，有效提高锅炉热效率的燃烧效率。

High temperature cyclone separator

- High efficiency and wear resistant. Separation efficiency $\geq 98\%$ efficiently improve the combustion efficiency of boiler heat efficiency

大炉膛设计

- 大炉膛、低流速设计；让管技术的应用，降低冲刷磨损；
- 延长煤颗粒在炉膛内停留的时间，使煤得以充分燃烧。

Large furnace design

- Large furnace, lower flow speed design. Allow pipe technology decrease erosive wear
- Extend the stay time of coal particles in furnace to make coal fired sufficiently

钟罩式风帽

- 采用钟罩式风帽，在布风均匀的同时，避免物料反串到风室。

Bell jar type hood

- Adopt bell jar type hood to distribute air average and avoid fuel returning to wind chamber

点火方式

- 独特的风室设计，为用户提供了床上点火和床下点火两种方式的选择。

Ignition method

- Unique wind chamber design provides two methods for user: ignition on bed and ignition under bed

人孔、检修门

- 上下锅筒前后布置人孔，打开方便，利于用户检修和清理
- 检修门方便用户对尾部受热面和炉膛的检修与维护

Manhole, inspection door

- Manhole are set on upper and lower drum. Manhole opens conveniently and is good for overhaul and clean
- Inspection door makes it convenient for user to overhaul and maintain tail heating area and furnace

对流受热面

- 设置多道折烟板，增加烟气流程并起到降尘的作用，有效防止飞灰进入省煤器，造成省煤器的堵塞。
- 设置吹灰装置预留接口，供用户选择安装各种类型的吹灰器（如蒸汽吹灰，激波吹灰等）。

Convection heating area

- Set multiple bend smoke plate to increase flue gas flow and fall dust. This efficiently prevents ash from entering into economizer to block economizer
- Set soot blower reserved connector for user to select various types of soot blower (eg: steam soot blowing, shock wave soot blowing, etc)

蛇形管式省煤器

- 蛇形管式省煤器最大限度的吸收烟气温度，提高锅炉效率。

Coiled pipe type economizer

- Coiled pipe type economizer maximum absorbs flue gas temperature

空气预热器

- 钢管式空气预热器，降低排烟温度，提高炉膛进口风温，提高了锅炉整体热效率。

Air preheater

- Steel tube type air preheater decreases the exhausted gas temperature, improve furnace inlet air temperature and boiler heat efficiency



SHX系列循环流化床蒸汽、热水锅炉参数表

PARAMETER OF SHX SERIES CFB STEAM& HOT WATER BOILER

参数项目 Item	锅炉型号 Model	* SHX10-1.25-AI SHX10-1.60-AI SHX10-2.50-AI SHX7-1.0/115/70-AI	* SHX15-1.25-AI SHX15-1.60-AI SHX15-2.50-AI SHX10.5-1.0/115/70-AI	* SHX20-1.25-AI SHX20-1.60-AI SHX20-2.50-AI SHX14-1.0/115/70-AI	* SHX25-1.25-AI SHX25-1.60-AI SHX25-2.50-AI SHX17.5-1.0/115/70-AI	* SHX30-1.25-AI SHX30-1.60-AI SHX30-2.50-AI SHX21-1.25/115/70-AI	* SHX35-1.25-AI SHX35-1.60-AI SHX35-2.50-AI
额定蒸发量/额定供热量(t/h/MW) Rated evaporation capacity		10/7	15/10.5	20/14	25/17.5	30/21	35
工作压力(t/h/MW) Pressure		1.25/1.6/2.5/1.0	1.25/1.6/2.5/1.0	1.25/1.6/2.5/1.0	1.25/1.6/2.5/1.0	1.25/1.6/2.5/1.25	1.25/1.6/2.5
蒸汽温度/额定出水温度(°C) Steam temperature/ Rated output water temperature		194/204/225/115	194/204/225/115	194/204/225/115	194/204/225/115	194/204/225/115	194/204/225
给水温度/回水温度(°C) Feedwater/return water temperature		105/70	105/70	105/70	105/70	105/70	105
受热面积(m²) Heating area	辐射 Radiation	58	63	121.6	179	227	224
	对流 Convection	213	295	354.8	442.4	495	609
	省煤器 Economizer	247.8	476	446.4	535.7	740	470
	空气预热器 Air preheater	94	128.9	280	357.3	404	367
流化床面积(m²) Effective area of great		1.6	2.24	2.78	3.25	4.75	5.3
耗煤(标煤)(kg/h) Fuel consumption		1952	3020	4217	5350	6325	6955
设计热效率(%) Thermal efficiency		84(运行 running89)	84(运行 running89)	84(运行 running89)	84	84	86(运行 running89)
排烟温度(°C) Temperature in exhaustion		160	165	150	150	150	150
最大运输重量(t) Weight of biggest part for transportation		1.56	2.51	3.6	4.1	4.2	4.9
一次风机 First draft fan	型号 Model	9-19NO7.1D	9-26NO7.1D	9-26T.1D	JLG25-16NO/4.5D	LG35-1	LG35-1
	风量(m³/h) Flow rate	8144-9988	14643	15826	26348	30744	32294
	风压(Pa) Wind pressure	11340-10426	12078	11776	12080	12954	12797
	转速(r/min) Rotation speed	2900	2900	2900	2900	1450	1450
	电动机功率(kW) Electric motor power	55	75	110	110	200	220
二次风机 Second draft fan	型号 Model	4-72NO4.5A	9-19 9D	9-19 9D	9-26NO11.2D	9-1912.5D	9-1912.5D
	风量(m³/h) Flow rate	5712-10562	9233	9233	1963	22206	22206
	风压(Pa) Wind pressure	1673-2554	4297	4297	3346	4179	4179
	转速(r/min) Rotation speed	2900	1450	1450	1450	1450	1450
	电动机功率(kW) Electric motor power	7.5	22	22	30	45	90
引风机 Induced draft fan	型号 Model	GY10-18	GY15-13NO12D	GY20-15	JLY25-47NO13D	XY35-18 NO13D	XY35-18
	风量(m³/h) Flow rate	32000	37485	62888-73368	70253	78800	84858
	风压(Pa) Wind pressure	4060	4994	3695-3515	4989	4515	4269
	转速(r/min) Rotation speed	1450	1450	1450	1450	1450	1450
	电动机功率(kW) Electric motor power	75	75	110	132	160	220
给水泵 Feed Water pump	型号 Model	DG12-25×7	DG25-30×5	DG25-30×7	DG25-30×7	DG46-30×6	DG46-30×6
	流量(m³/h) Water force	12.5	15	25	30	46	46
	扬程(m) Lift	175	170	210	192.5	180	180
	功率(kW) Power	15	22	30	30	37	37
	转速(r/min) Rotation speed	2950	2950	2950	2950	2950	2950
给煤机 Coal feeder	型号 Model	LS-10	LS-10	LS-20	LS-20	LS-20	LS-20
	电动机功率(kW) Electric motor power	3	3	3	3	3	3

说明：1、表中水泵及外形尺寸数据为★号锅炉；2、最终数据以蓝图为准。

Note: 1. The date of water pump and overall dimension in this form belong to the boiler model marked ★; 2. The final data is subject to the blueprint.

SHX系列循环流化床蒸汽、热水锅炉参数表

PARAMETER OF SHX SERIES CFB STEAM& HOT WATER BOILER

参数项目 Item	锅炉型号 Model	* SHX40-1.25-AI SHX40-1.60-AI SHX40-2.50-AI SHX29-1.25/130/70-AI	* SHX45-1.25-AI SHX45-1.60-AI SHX45-2.50-AI	* SHX50-1.25-AI SHX50-1.60-AI SHX50-2.50-AI SHX35-1.25/130/70-AI	* SHX65-1.25-AI SHX65-1.60-AI SHX65-2.50-AI SHX46-1.25/130/70-AI	* SHX75-1.25-AI SHX75-1.60-AI SHX75-2.50-AI
额定蒸发量/额定供热量(t/h/MW) Rated evaporation capacity		40/29	45	50/35	65/46	75
工作压力(t/h/MW) Pressure		1.25/1.6/2.5/1.25	1.25/1.6/2.5	1.25/1.6/2.5/1.25	1.25/1.6/2.5/1.25	1.25/1.6/2.5
蒸汽温度/额定出水温度(°C) Steam temperature/ Rated output water temperature		194/204/225/130	194/204/225	194/204/225/130	194/204/225/130	194/204/225
给水温度/回水温度(°C) Feedwater/return water temperature		105	105	105	105	105
受热面积(m²) Heating area	辐射 Radiation	198.2	202.6	221.2	285.2	332.5
	对流 Convection	649.6	689.0	746.4	852.6	910.1
	省煤器 Economizer	509.0	549.0	589.9	646.9	668.6
	空气预热器 Air preheater	631.0	736.0	860.4	1186.0	1232.7
流化床面积(m²) Effective area of great		5.60	5.90	6.50	8.50	9.75
耗煤(标煤)(kg/h) Fuel consumption		7754	8710	9693	12600	14982
设计热效率(%) Thermal efficiency		86	86	86	86	86
排烟温度(°C) Temperature in exhaustion		141	143	142	145	145
最大运输重量(t) Weight of biggest part for transportation		10.2	11.0	12.8	13.5	15.0
一次风机 First draft fan	型号 Model	9-19 16D	9-19 16D	9-19 16D	9-26 15D	9-26 15D
	风量(m³/h) Flow rate	32531	36597	40663	50500	56000-60000
	风压(Pa) Wind pressure	15700	15563	15151	14595	14000
	转速(r/min) Rotation speed	1450	1450	1450	1450	1450
	电动机功率(kW) Electric motor power	315	315	315	350	350
二次风机 Second draft fan	型号 Model	9-19 12.5D	9-19 12.5D	9-26 11.2D	9-26 11.2D	9-26 11.7D
	风量(m³/h) Flow rate	24316	27251	33540	36520	38000-40000
	风压(Pa) Wind pressure	8678	8278	7600	7500	7500
	转速(r/min) Rotation speed	1450	1450	1450	1450	1450
	电动机功率(kW) Electric motor power	110	110	132	132	132
引风机 Induced draft fan	型号 Model	Y5-51 14D	Y4-73 14D	Y5-51 19D	Y4-73 19D	Y4-73 16D
	风量(m³/h) Flow rate	112000	135000	150000	180000	180000-200000
	风压(Pa) Wind pressure	3788	3500	3400	3400	4500
	转速(r/min) Rotation speed	1450	Y355M1-4	Y355M1-4	HM2-355L3-6	1450
	电动机功率(kW) Electric motor power	200	220	250	280	400
给水泵 Feed Water pump	型号 Model	DG46-50×4	DG46-50×4	DG85-67×3	DG85-67×3	DG85-67×3
	流量(m³/h) Water force	46	46	55	65	85
	扬程(m) Lift	200	200	216	205	201
	功率(kW) Power	45	45	90	90	90
	转速(r/min) Rotation speed	2950	2950	2950	2950	2950
给煤机 Coal feeder	型号 Model	LS-20	LS-20	LS-20	LS-20	LS-20
	电动机功率(kW) Electric motor power	3	3	3	3	3

说明：1、表中水泵及外形尺寸数据为★号锅炉；2、最终数据以蓝图为准。

Note: 1. The date of water pump and overall dimension in this form belong to the boiler model marked ★; 2. The final data is subject to the blueprint.

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