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Kenuo科诺

中意合资 · 国际标准
SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS

创新 INNOVATION　智能 INTELLIGENT　低氮 LOW NOx　高效 EFFICIENT　安全 SAFETY

超低氮冷凝承压热水锅炉

ULTRA-LOW NOx CONDENSING PRESSURE HOT WATER BOILER

超低氮冷凝承压热水锅炉

ULTRA-LOW NOx CONDENSATION PRESSURIZED HOT WATER BOILER

概述 / overview

超低氮冷凝承压热水锅炉，采用高效率低应力卧式湿背内燃烟气二回程结构，配置高效空气预热器和节能冷凝一体机；圆弧形对开炉门设计，运用大炉膛全混合燃烧和高效螺纹烟管传热；拥有低氮耦合，炉内独有四级低氮燃烧技术，全面抑制NOx生成；配置ABB变频器，意大利Cavallo卡瓦诺变频分体式超低氮燃烧器，7英寸液晶触摸屏与高性能PLC可编程控制器，实现锅炉NOx≤30mg/m³的超低排放标准。

Ultra-low NOX condensation pressurized hot water boiler is a two passes fire tube boiler with wet back, high efficiency, and low stress. It is integrated with high efficient air preheater and condenser. Two arc doors are in the front. Larger combustion chamber and thread fire tubes increase the heat transfer. Initiation of low NOx coupling technique and unique four levels of low NOx combustion technology completely inhibited the production of NOx; equipped with ABB inverter, Cavallo dual-bloc ultra-low NOx burner from Italy, 7 inch LCD touch screen and PLC programmable controller to guarantee the emission of NOx≤30mg/m³.

控制系统 / Control System

- 显示锅炉运行状态，具有运行/停止功能
  Indication of operating status, with start / stop button
- 具有循环泵联锁保护功能
  Circulation pump interlock
- 具备预约运行功能
  Scheduled startup of operation
- 可统计显示点火次数、燃烧时间
  Display of the numbers of ignition and combustion
- 超温/超压/欠压/防冻/熄火报警功能
  High temperature / high pressure / low pressure / antifreeze / burner stop alarm functions
- 显示锅炉运行故障状况
  Display of the malfunctions
- 断电自锁保护功能
  Self-interlock during power down for protection
- 数据/信息的收集、分析、存储功能
  Data / information collection, analysis, and storage function
- 控制器具有密码(Password)锁定功能
  Password protection of the controller
- 具有标准的RS485接口，采用MODEBUS协议，可实现多台锅炉的远程群控功能
  Modbus RS485 interface, connection to the upper control system or DCS system of the plant from multiple boilers

性能特点

PERFORMANCE CHARACTERISTICS

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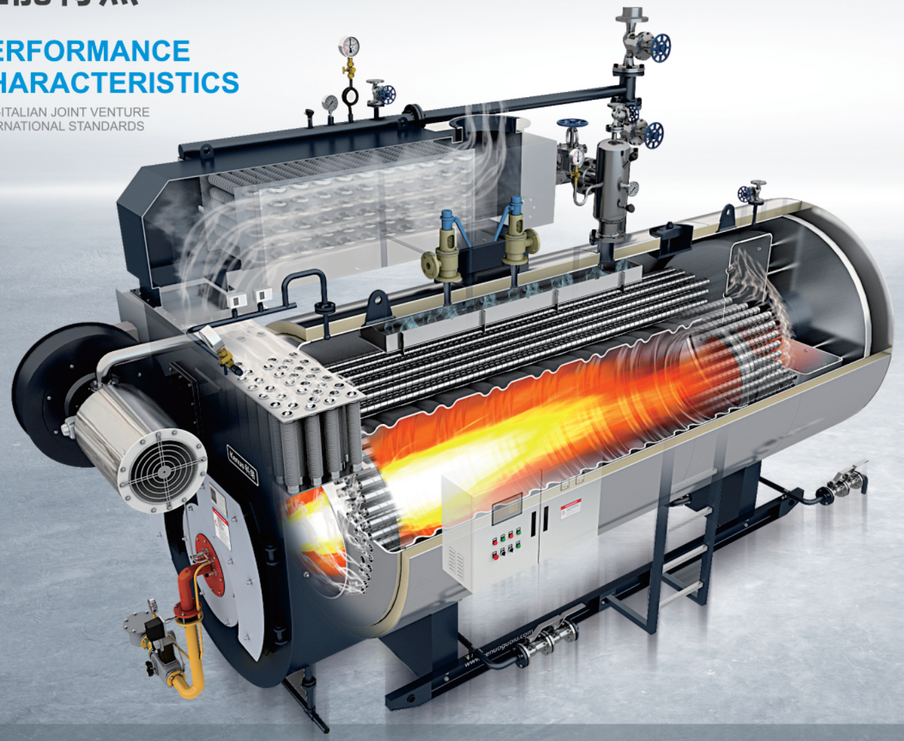
INTERNATIONAL STANDARDS

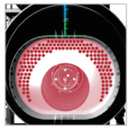


科诺超低氮冷凝承压热水锅炉，采用高效率低应力卧式湿背内燃烟气二回程结构，将大量低温受热面布置在本体受压区外，降低锅炉热应力，避免锅炉本体内冷凝腐蚀，从而提高本体热效率。且注重顶层设计，将锅炉本体、空气预热器、节能冷凝一体机、Cavallo卡瓦诺变频分体式超低氮燃烧器、智能控制系统进行完美集成。

管路系统简单可靠，减少安装占地面积，烟气通道简洁流畅。低温冷凝极限回收燃料的同时，提升锅炉最大热效率高达104%，实现30mg超低氮排放。

Ultra-low NOx condensation pressurized hot water boiler is a two passes fire tube boiler with wet back, high efficiency and low stress. It increases the heat exchange surface on the 2nd pass. Meanwhile it reduces the thermal stress, avoids the corrosion due to the condensation inside the boiler. The thermal efficiency of the body is also increased. The air-preheater and condenser are integrated on the top of the flue gas exit. Cavallo ultra-low NOx dual-bloc burner is adopted, together with the state-of-the-art control system.

The system is very compact, reducing the installation area. Thanks to the air-preheater and condenser, the heat efficiency is up to 103%, and guarantees 30mg/Nm^3 NOx emission.

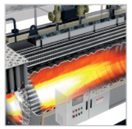


二回程结构

锅炉优化设计为跑道型回燃室，二回程管束，提高锅炉本体热效率。

Two Passes Design

Boiler optimization design for the runway-type back to the combustion chamber, the second return tube bundle to improve the thermal efficiency of the boiler body.



超大波纹炉胆

增大燃烧空间，降低火焰温度，炉水受热均匀。

Large Corrugated Furnace

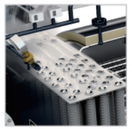
Larger combustion chamber, reducing the flame temperature, balanced heat transfer

意大利Cavallo卡瓦诺悬臂式风机及不锈钢消音器

体积小、重量轻、风压/风量稳定；增加了消音装置，超长寿命、超低噪音。

Cantilever Air-fan and Stainless Steel Silencer from Cavallo Italy

Small size, lightweight, stable air pressure and flow, stainless silencer to decrease noise emission.



空气预热器

低温情况下可快速启动，迅速加热空气；
换热强度高，抗腐蚀性强；
双向纯逆流换热模式，瞬间提高空气温度，加速燃烧，燃烧效率高达100%。

Air-preheater

At low temperature, it can fast start to heat up the air;
Good heat exchange and anti-corrosion ability;
Counter-flow heat exchange, efficient heat transfer to heat up the air and accelerate the combustion.
Combustion efficiency is up to 100%.

节能冷凝一体机

极限回收烟气中的显热和水蒸汽凝结后的汽化潜热，提高回水温度，降低排烟温度，节省燃气费用，有效提升锅炉热效率高达104%；
采用优质ND钢+硅镁铝合金缠绕复合翅片管，传热性能高，耐腐蚀性强。

High Efficiency Condenser

Recover the both the sensible and latent heat from the flue gas, to heat up the feed in water. The maximum efficiency can be increased up to 103%;
Body is made by ND steel and finned tubes by silicon magnesium aluminum alloy. Better heat exchange rate and anti-corrosion ability.

Cavallo卡瓦诺变频分体式超低氮燃烧器

意大利Cavallo卡瓦诺超低氮燃烧器，拥有低氧式、分布式、循环式、分级式四级燃烧技术；
结合烟气再循环西门子FGR技术，实现30mg超低氮排放；
采用ABB变频器，实现变频比例控制燃烧，高效节能。

Ultra-low NOx Dual-bloc Burner from Cavallo

Ultra-low NOx burner from Cavallo Italy has two levels of combustion: hypoxia, distributed, circulated and scale;
Integrated with SIEMENS FGR technology to guarantee an ultra-low NOx emission of 30mg/m^3;
Equipped with inverter from ABB, real electronic modulating to save fuel.

PLC智能控制器

采用7英寸液晶显示触摸屏，与高性能可编程PLC控制器完美匹配；
具备超压/欠压/超温报警等联锁安全防护功能，可有效实时记录锅炉运行状态，全面监控锅炉运行安全。

PLC Control System

7 inch LCD touch screen and PLC controller;
With high pressure /low pressure/ high temperature alarm and interlock functions, it can effectively record the operating state of the boiler and monitor the safety of the boiler.

工作原理

WORKING PRINCIPLES

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锅炉采用大容积全波纹炉胆，湿背式跑道型回燃室，全螺纹烟管对称且均匀布置在炉胆两侧。Cavallo卡瓦诺变频分体式超低氮燃烧器提供燃料燃烧，喷出的火焰在炉胆内湍流燃烧。产生的高温烟气经回燃室折返，进入螺纹烟管，高效换热后，由前烟箱进入空气预热器，烟气逆流换热，加热冷空气；降温的烟气顺流进入节能冷凝一体机，烟气逆流通过错排的硅镁铝合金翅片管扩展受热面，回收烟气潜热和显热，预热锅炉回水温度，热量极限回收后的烟气经烟囱排入大气。

The boiler has large corrugated furnace, wet back and full threaded tubes symmetrically located on both sides of the furnace. Cavallo ultra-low NOx dual-bloc burner is installed inside the furnace. Flue gas is reverted into the 2nd pass tubes at the back chamber. After heat exchange, flue gas enters into the air-preheater, where it counter-flow heat exchanges with the combustion air. Then the flue gas goes into the condenser to heat up the feed water, recovering all the sensible and latent heat. Finally the glue gas exits from the chimney to the air.

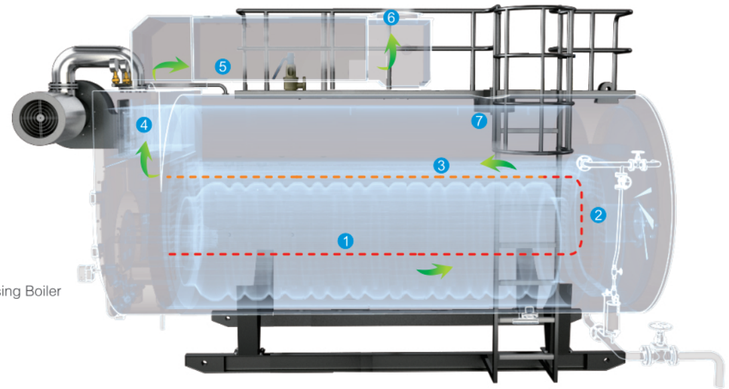
烟气换热流程图

Flue gas heat transfer flow chart

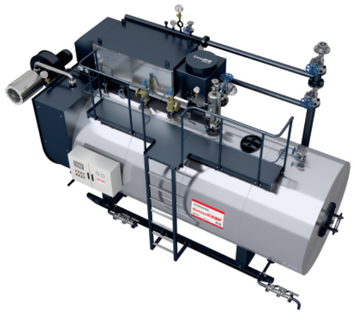
第一回程 First pass

第二回程 The second pass

烟气走向 flue gas direction



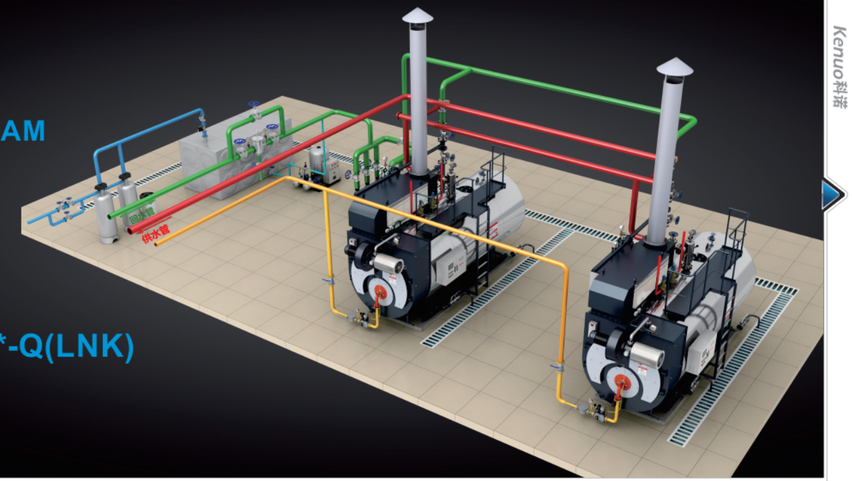
1. 波纹炉胆 / Corrugated furnace
2. 回燃室 / Reversal chamber
3. 螺纹烟管 / Thread pipe
4. 空气预热器 / Air-preheater
5. 节能冷凝一体机 / High Efficiency Condensing Boiler
6. 排烟口 / Stack
7. 热水出口 / Hot water outlet



供热系统图

SYSTEM DIAGRAM

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS



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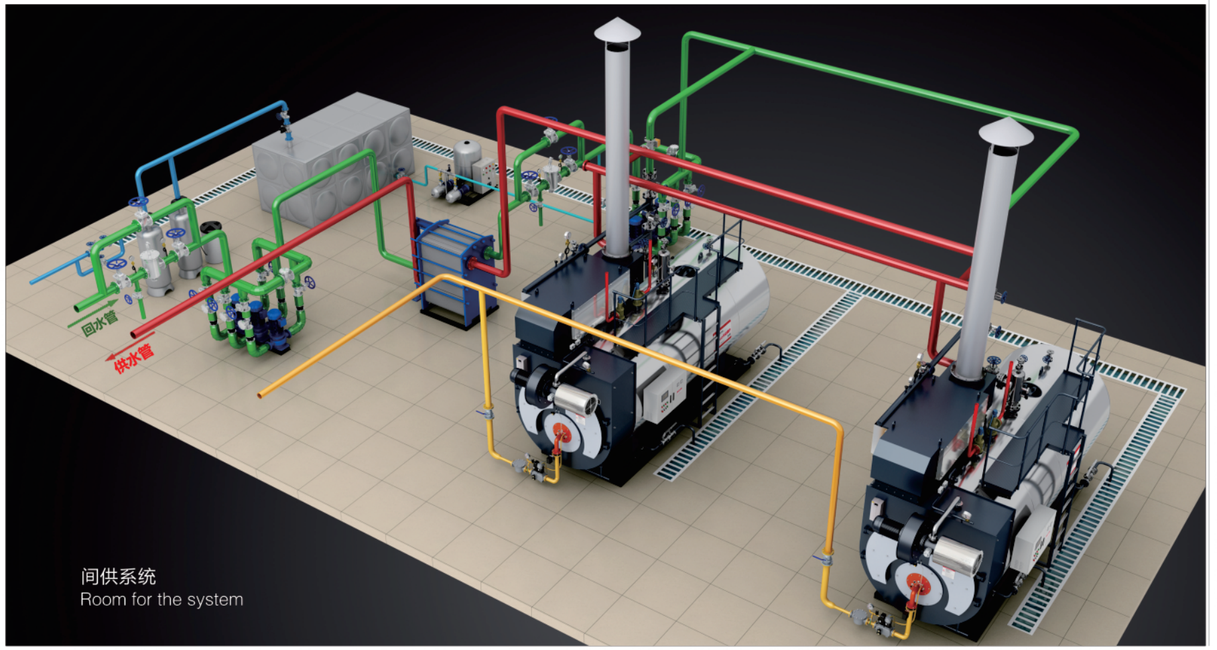
直供系统
Direct supply system



间供系统
Room for the system

超低氮变频比例燃烧技术

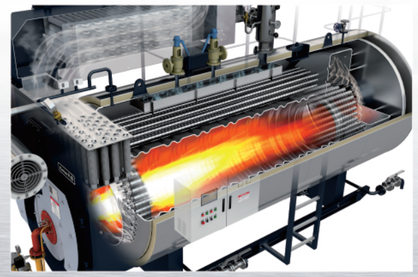
ULTRA-LOW NOx VARIABLE FREQUENCY PROPORTIONAL COMBUSTION TECHNOLOGY

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS

拥有超低氮燃烧环境的炉膛设计
Furnace design to achieve ultra-low NOx

大炉膛设计结构，不仅有效提升锅炉的传热性能，提升了锅炉热效率；
大炉膛设计结构，在抑制氮氧化物在炉内产生还起到了关键性作用；
波纹炉胆的选用，在提高了传热性能提升锅炉热效率的同时还满足了热应力的释放，提高产品寿命和安全性。

Large furnace design, not only to increase the heat exchange in the radiant zone but also to low down the flame temperature which is the key to NOx production. Corrugated furnace is the best choice of heat transfer and stress release, which can increase the stability and boiler lifetime.



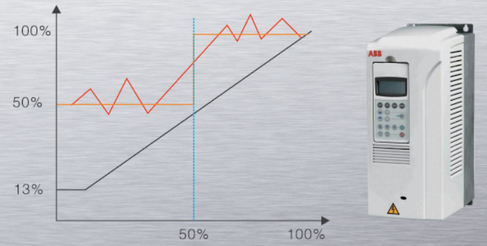
<30mg极低氮氧化物排放
<30mg NOx emission

	NOx排放 NOx emissions
普通承压热水锅炉 Ordinary pressurized hot water boiler	80–150mg/m³
科诺超低氮冷凝承压热水锅炉 Kenuo ultra-low NOx condensation pressurized hot water boiler	<30mg/m³

配置ABB变频器，实现比例控制燃烧，高效节能
Adoption of ABB inverter and electronic cam to modulate combustion

该款锅炉配置ABB变频器和SIEMENS比例调节燃气阀，可提供最佳混合比例的燃气与助燃空气，蒸汽稳定性好，实现99.99%完全燃烧，降低锅炉能源消耗。

ABB inverter and Siemens electronic cam to optimize the air/fuel ratio, realizing 99.99% combustion, lower down the fuel consumption.



配置Cavallo卡瓦诺超低氮分体式燃烧器
Compact with Cavallo Dual Bloc ultra-low NOx burner

意大利Cavallo卡瓦诺超低氮燃烧器，拥有燃料三级分布技术、空气四级混合技术、预混技术、烟气内循环技术等众多的燃烧技术使燃烧器燃烧更稳定；使燃料完全燃烧，节省锅炉运行成本。

Italy Cavallo ultra–low NOx burner has many combustion technologies, such as fuel three–stage distribution technology, air four–stage mixing technology, premixing technology, FGR technology, to make the combustion more stable, and complete, to save operation cost.

- 分级燃烧：分级燃烧技术包括空气分级供给、燃气分级供给和燃气空气同时分级供给三种方式；其原理是把贫氧燃烧与过氧燃烧相结合，通过中和火焰温度，来降低NOX化物浓度，以及形成部分NOX还原的条件，从而总量上降低排放。
- 预混式燃烧：预混式燃烧技术是把部分燃料和空气进行预混，并通过旋流片的调节和控制，保证了燃气和空气的完全混合，使燃烧更充分，氮氧化物排放低。
- 分布式燃烧：将火焰分成数个小火焰增大散热面减少排放
- 烟气内循环燃烧：烟气内循环燃烧技术是指燃烧生成的烟气通过特殊的头部设计，从新与燃料和空气再次掺混并进行燃烧； 通过烟气内循环技术可以达到消除燃烧热点，增加火焰辐射，控制氮氧化物排放的效果。
- 完全燃烧：燃烧火焰完全覆盖锅炉燃烧室，提高燃烧效率

- Staged combustion: Staged combustion technology includes three modes: air supply by stages, gas supply by stages and gas air supply by stages at the same time. Its principle is to combine lean oxygen combustion with peroxide combustion, to reduce NOx production by lower down flame temperature, and to partially form NOx redox, so as to reduce total emission.
- Pre–mixing combustion: Pre–mixing combustion technology is to premix some fuel and air, and via the regulation and control of swirl vane, to ensure the complete mixing of gas & air and combustion, less NOx emission.
- Distributed combustion: divide the flame into many small flames to increase the heat dissipation surface and reduce emissions.
- FIR: FIR refers to the combustion of flue gas generated by combustion through special head design, re–mixing and combustion with fuel and air; through FIR, to eliminate the combustion hot spots, increase flame radiation and less NOx production.
- Full combustion: The flame completely fullfill the boiler combustion and improves the combustion efficiency.

配置Cavallo卡瓦诺FGR不锈钢管道
FGR flue gas duct in stainless steel from Cavallo

为防止冷凝水腐蚀管道及燃烧系统，本产品配置有不锈钢材质管道，可延长锅炉使用寿命，确保锅炉运行安全；
FGR不锈钢管道，结合卡瓦诺超低氮燃烧器，可轻松实现小于30mg超低氮排放标准。

In order to prevent condensate water from corroding pipes and combustion systems, this product is equipped with stainless steel pipes, which can extend the service life of the boiler and ensure the safe operation of the boiler.
Cavallo ultra low NOx burner with FGR can easily reach 30mg NOx emission.

三重冷凝换热技术

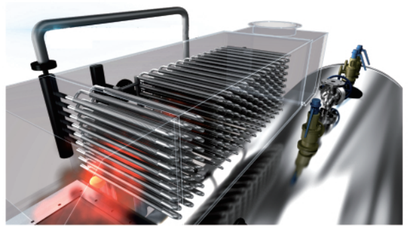
THREE LEVELS OF HEAT RECOVERY

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS

配置高效节能冷凝一体机
Integrated economizer and condenser

配置高效节能冷凝一体机，拥有双重节能效果，极限回收烟气中的显热和水蒸汽的凝结潜热，降低排烟温度；提升锅炉热效率并降低NOx的排放。

Integrated economizer and condenser can recover the sensible and latent heat in the flue gas.



- **冷凝原理**

Condensing theory

flue gas at the boiler body exit will first exchange in the economizer then into the condenser which is circulating with the low temperature feed water tank, to reach the dew point and turn into water.

从锅炉排出的高温烟气，先经过节能器，进行一次节能；再经过冷凝器二次冷凝；双重冷凝后的低温烟气，经排烟口排向大气。

- **采用优质ND钢+硅镁铝合金缠绕复合翅片管**

Adoption of ND steel and Silicon-Magnesium-Aluminum Alloy Winded finned tube

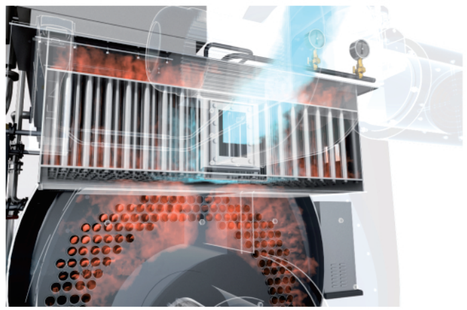
Adoption of ND steel and Silicon–Magnesium–Aluminum Alloy Winded finned tube will give a better heat exchange and anti–corrosion effect.

配置的节能冷凝一体机为科诺锅炉自主研发，采用优质ND钢+硅镁铝合金缠绕复合翅片管，传热性能更好，耐酸腐蚀性更强。

配置空气预热器，有效提高热交换性能，降低能源消耗
Air preheater to further recover the flue gas heat

- 可在低温情况下快速启动，迅速换热，防烟气结露产生冷凝水对燃烧器及锅炉产生腐蚀现象；
- 换热管采用ND管，换热强度高，抗腐蚀性强；
- 双向纯逆流换热模式，瞬间提高空气温度，加速燃烧，燃烧效率高达99.9%；
- 锅炉热效率可提升3%以上。

- At low temperature, it can start fast and heat up the combustion air;
- Tube in ND steel, good heat exchange and anti–corrosion ability;
- Counter–flow heat exchange, efficient heat transfer to the combustion air to accelerate the combustion. Combustion efficiency is up to 99.9%.
- Can increase 3% of efficiency



超安全智能控制系统

SMART CONTROL SYSTEM

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS

科诺锅炉物联网技术，搭载科诺云平台，涵盖锅炉运行现状、锅炉节能减排数据库等锅炉信息(报告)采集、传输、分析与通讯功能，内置智能网关，直接接入锅炉物联网系统，可同时应用于移动端和PC端，实现锅炉系统的远程多点实时连接。

KENUO Boiler Internet of Things (IOT) technology, equipped with KENUO cloud platform, covers boiler information collection, transmission, analysis and communication functions such as boiler operation status, boiler energy saving and emission reduction data. The built–in intelligent gateway is directly connected to the boiler IOT system, and can be applied to both mobile and PC terminals, so to realize long–distance multi–point real–time communication.

- 采用7/10英寸液晶显示触摸屏，与高性能可编程PLC控制器完美匹配；
- 锅炉全自动运行，可与智能控制平台对接，实现远程监控；
- 具备高低水位/超压/超温报警等联锁安全防护功能，可有效实时记录锅炉运行状态，全面监控锅炉运行安全。

- 7/10 inch LCD touch screen and PLC controller;
- Fully automatic operation, can communicate with DCS system, realize remote monitor.
- With water level/ pressure / temperature alarm and interlock functions, it can effectively record the operating state of the boiler and monitor the safety of the boiler.

概述
Overview

该自动控制系统采用工业全自动冷凝承压热水锅炉控制技术方案。硬件按功能模块化设计，信号输入输出、控制器件，全部采用知名品牌器件；软件面向对象，内嵌式精心设计，软硬结合，对承压热水锅炉安全运行进行自动控制和工况检测。丰富的故障检测、故障报警、故障处理功能，保证了系统的安全可靠运行。
系统采用锅炉控制专用模块作为信息处理和中央控制单元。以人机对话方式与锅炉用户交换信息，给操作者带来极大方便。

The automatic control system adopts the control technology of industrial automatic condensing and pressure hot water boiler. According to the function of the modular design of hardware, signal input and output, control devices, all using well–known brand devices; The software is object–oriented, embedded design, soft and hard combination, the steam boiler safe operation of automatic control and condition detection. Rich functions of fault detection, fault alarm and fault handling ensure the safe and reliable operation of the system.
The system uses special module of boiler control as information processing and central control unit. Exchanging information with boiler users by means of man–machine conversation brings great convenience to operators.

基本功能
Basic Function

- 显示锅炉的运行状态，可控制运行或停止。
- 确认锅炉的动作设定及变更设定值。
- 可积算显示点火次数，燃烧时间。
- 可选择定时运行功能，在既定时间内改变锅炉运行参数运行或停止锅炉。
- 发生故障时可显示故障状况及发出警报声，故障内容自动存储，方便用户分析故障原因。
- 控制器具有密码(Password)锁定功能，除用户之外不可能更改设定及调整。

- Display the operation status of the boiler, and control the operation or stop.
- Confirm boiler action setting and change setting value.
- Integrable display of ignition times, combustion time.
- Timing operation function can be selected to change the operation parameters of the boiler or stop the boiler in a given time.
- When a fault occurs, the fault status can be displayed and the alarm sound can be issued. The fault content can be stored automatically to facilitate the user to analyze the cause of the fault.
- The controller has Password lock function, so it is impossible to change settings and adjust them except for users.

技术参数

TECHNICAL PARAMETERS

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS

额定热功率		MW	0.7	1.4	2.1	2.8	3.5	4.2	5.6	7.0	10.5	14	17.5
Nominal Capacity		X10⁴kcal	60	120	180	240	300	360	480	600	900	1200	1500
额定出水压力/Nominal Water Outlet Pressure		MPa	1.0 * (1.25)										
供(回)水温度/Outlet (Inlet) Water Temperature		℃	95 (70)								115 (70)		
设计排烟温度/Flue Gas Temperature		℃	≤ (回水温度+10℃) / ≤ (Inlet water temperature + 10 ℃)										
受热面积/Heating Surface		M^2	57.2	109	141	165	206	233	325	416	650	870	1019
设计热效率/Efficiency in Design		%	97 ~ 103										
天然气消耗量	70℃回水/70℃Inlet water	Nm^3/h	73.9	147	219.9	292.9	365.8	438.9	585.2	730.8	1094.2	1461.5	1825.9
Natural Gas	55℃回水/55℃Inlet water	Nm^3/h	72.9	145.1	217	289	361	433.1	577.4	721.1	1079.7	1442.1	1801.7
Consumption	40℃回水/40℃Inlet water	Nm^3/h	68.5	136.2	203.8	271.4	338.9	406.7	542.2	677.2	1013.9	1354.2	1691.9
氮氧化合物/(NOx)/NOx Emission		mg/Nm^3	* 80 (BLU) / * 30 (FGR)										
电源/Power		V/Hz	380/50										
用电最大量/Maximum power consumption		kW	2.2	4	7.5	11	15	15	22	30	55	75	110
燃烧型式/Combustion Type			室燃微正压燃烧 / Room burning micro positive pressure combustion										
燃烧调节方式/Combustion Regulation			变频比例调节 / Frequency ratio adjustment										
锅炉净重/Net Weight		t	5.5	7.3	9.5	12.8	13.9	14.9	19.5	24.1	35.9	42.6	54.4
锅炉满水容量/Water Content		t	3.1	4.5	5.5	7.7	8.2	8.5	12	14.5	21.5	26.3	32.5
锅炉满水重量/Weight in Flooded Water		t	8.6	11.8	15	20.5	22.1	23.4	31.5	38.6	57.4	68.9	86.9
燃烧器/Burner	电机功率/Power	kW	2.2	4	7.5	11	15	15	22	30	55	75	110
	供气压力/Air Pressure	kPa	7–9	13–15	13–15	18–20	20–25	20–25	25–30	30–35	40–45	45–55	45–55
	阀组口径/Valve Diameter	DN	50	50	50	65	65	65	80	100	100	125	125
	负荷范围/Load Range	%	30–110%										
	接口尺寸/Connection Diameter	DN	65	80	80	100	100	100	125	150	150	200	200
锅炉供水口/Water Outlet Connection	N1	DN	80	100	125	125	150	150	200	200	200	250	300
锅炉回水口/Water Inlet Connection	N2	DN	80	100	125	125	150	150	200	200	200	250	300
锅炉排气口/Vent Connection	N3	DN	25										
锅炉排污口/Drain Connection	N4	DN	40	40	40	40	2x40	2x40	2x40	2x40	2x40	2x50	2x50
锅炉安全阀口径 N5	接口/Connection	DN	40	40	50	50	2x65	2x65	2x80	2x80	2x100	2x125	2x125
Safety Valve	泄放口/Release	DN	50	50	65	65	2x80	2x80	2x100	2x100	2x125	2x150	2x150
锅炉排烟口/Stack Connection	N6	mm	Φ250	Φ350	Φ400	Φ450	Φ500	Φ500	Φ600	Φ650	Φ800	Φ900	Φ1000
冷凝器进水口/Condenser Water Inlet Connection	N7	DN	65	65	80	80	100	100	125	125	125	150	200
冷凝器出水口/Condenser Water Outlet Connection	N8	DN	65	65	80	80	100	100	125	125	125	150	200
自动排气口/Vent Connection	N9	DN	25										
烟道冷凝水排放口/Flue-gas Duct Drain Connection	N10	DN	32	32	32	32	32	40	40	40	50	50	50
烟箱冷凝水排放口/Smoke Box Drain Connection	N11	DN	32	32	32	32	32	40	40	40	50	50	50
锅炉运输尺寸 Transport Dimension (L×W×H)		mm	3550*2200 *3100	4450*2350 *3200	5000*2450 *3300	5400*2550 *3400	5950*2750 *3500	6000*2850 *3600	6600*3050 *3800	7100*2950 *3100	7850*3250 *3450	8650*3450 *3650	9400*3650 *3900
参考锅炉外形尺寸 Boiler Dimension (L×W×H)		mm	4350*2250 *3200	5350*2400 *3600	5950*2500 *3800	6450*2600 *3900	7000*2750 *4100	7050*2900 *4250	7650*3050 *4800	8150*3350 *5050	9050*3650 *5750	9900*3850 *6150	10650*4100 *6600

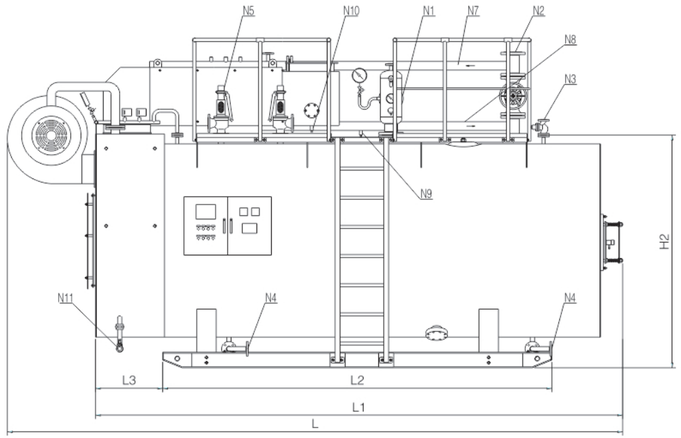
1、意大利Cavallo卡瓦诺燃烧器为本公司的标准配置，用户自选其它品牌，在订货时须书面确认；
2、燃料计算基准值：天然气低位发热值8500kcal/Nm^3；
3、排烟温度随回水温度的变化而变化，排烟温度≤（回水温度+10℃）；
4、燃气锅炉，排烟温度低于露点时，会产生大量呈酸性冷凝水会对尾部烟道造成腐蚀，建议使用不锈钢或防腐材质烟道；
5、科诺产品在不断创新和改进中，上述参数可能会发生变化，最终以图纸或实物为准。

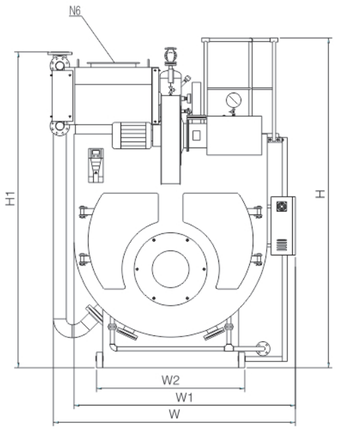
1、Standard configuration of burner is Cavallo from Italy. Customer can customize before contract.
2、Fuel consumption standard value: natural gas LHV 8500kcal/Nm^3
3、Flue gas temperature is proportional to feed water temperature: Flue Gas Temperature≤(Inlet Water Temperature+10℃)
4、For gas-fired boilers, when the exhaust gas temperature is lower than the dew point, a large amount of acidic condensate will be produced which will corrode the tail flue. It is recommended to use stainless steel or anti-corrosion material flue;
5、Kenuo products are in constant innovation and improvement, followed by changing specifications. Thus customer shall refer to the data on the drawings.

外形尺寸

SPECIFICATIONS

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS





热功率		L	L1	L2	L3	W	W1	W2	H	H1	H2
MW	× 10^4 kcal										
0.7	60	4350	3550	2800	350	2250	2200	1200	3200	3100	2000
1.4	120	5350	4450	3300	400	2400	2350	1400	3600	3200	2200
2.1	210	5950	5000	3600	410	2500	2450	1500	3800	3300	2300
2.8	240	6450	5400	4000	420	2600	2550	1700	3900	3400	2400
3.5	300	7000	5950	4000	420	2750	2750	1700	4100	3500	2600
4.2	360	7050	6000	4400	440	2900	2850	1800	4250	3600	2800
5.6	480	7650	6600	5200	450	3050	3050	1900	4800	3800	2900
7.0	600	8150	7100	5900	460	3350	2950	2000	5050	4300	3100
10.5	900	9050	7850	6800	470	3650	3250	2200	5750	5040	3450
14	1200	9900	8650	7200	480	3850	3450	2500	6150	5750	3650
17.5	1500	10650	9400	7800	500	4100	3650	2800	6600	6040	3900

企业简介

COMPANY PROFILE

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS

位于首都北京的科诺锅炉，是一家专注于燃气锅炉及燃烧器研发、生产、销售、投资运营于一体的综合热能实业企业。目前拥有包括北京科诺锅炉有限公司(B级)、江苏科诺锅炉有限公司(A级)、北京科诺热力有限公司、山西科诺热力有限公司、福建科诺热力有限公司、江苏卡瓦诺热能科技有限公司在内的六家分公司。

2017年北京科诺锅炉（B级）与意大利Cavallo卡瓦诺成立股份合资公司，并获得北京市人民政府外商投资企业批准文书。同年，江苏科诺锅炉有限公司（A级）、江苏卡瓦诺热能科技有限公司成立于扬州，秉承意大利Cavallo卡瓦诺丰富的生产经验及核心技术，于国内装配推广销售Cavallo超低氮锅炉及燃烧器，以更好的服务于全国市场。

现阶段，公司核心业务包括超低氮冷凝蒸汽锅炉、超低氮冷凝承压热水锅炉、超低氮冷凝常压热水锅炉、超低氮冷凝真空热水锅炉、卡瓦诺超低氮自然循环冷凝蒸汽锅炉、卡瓦诺超低氮不锈钢全冷凝承压热水锅炉、卡瓦诺超传导电热水机组、卡瓦诺真空相变电热水机组、卡瓦诺全预混超低氮燃烧器、卡瓦诺分体式超低氮燃烧器、卡瓦诺一体式超低氮燃烧器等产品的研发、生产、销售及服务，并承接锅炉低氮节能改造、供热服务、热力投资等关联业务项目。

未来，科诺锅炉将借助意大利Cavallo卡瓦诺锅炉的技术优势，乘势而上，继续秉承“为大众创造美好生活”的宏伟愿景，造福于员工、回报于社会！

Kenuo Boiler, located in Beijing　Capital of China, is a comprehensive enterprise, focusing on gas-fired boiler design, production, sales and BOT investment. It has 6 subsidiary companies including Beijing Kenuo Boiler Co.,Ltd. (Boiler Manufacturing License B), Jiangsu Kenuo Boiler Co.,Ltd. (Boiler Manufacturing License A), Jiangsu Cavallo Thermal Energy Technology Co., Ltd., Beijing Kenuo Thermal Power Co.,Ltd., Shanxi Kenuo Thermal Power Co.,Ltd. and Fujian Kenuo Thermal Power Co.,Ltd.

In 2017, after obtaining the approval document of foreign-invested enterprises of Beijing Municipal People's Government, Beijing Kenuo Boiler become a joint venture with Italy Cavallo. In the same year, Jiangsu Kenuo Boiler Co., Ltd. and Jiangsu Cavallo Thermal Energy Technology Co., Ltd. were established in Yangzhou. Additional with the excellent combustion system design and production experience of Cavallo, Kenuo is to better service the National Market.

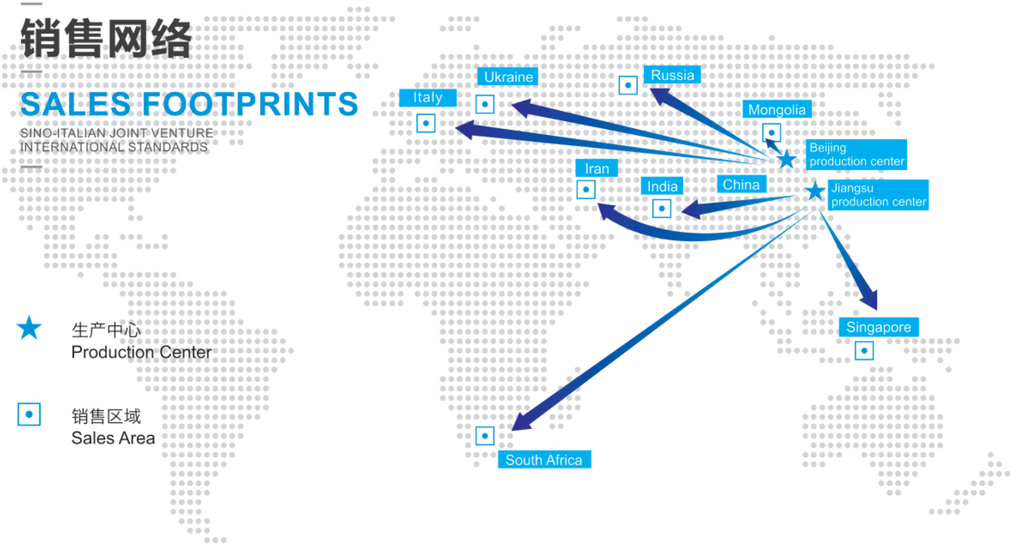
At present, the group's core businesses are covering the design, production and sales & service for ultra-low NOx condensing steam boiler, ultra-low NOx condensing hot water boiler (pressure), ultra-low NOx condensing atmospheric pressure hot water boiler, ultra-low NOx condensing vacuum phase change hot water boiler, Cavallo ultra-low NOx condensing natural circulation steam boiler, Cavallo ultra-low NOx stainless steel condensing pressure hot water boiler, Cavallo superconducting electric water heater，Cavallo vacuum phase change electric hot water heater，Cavallo premixing ultra-low NOx burner，Cavallo dual bloc ultra-low NOx burner，Cavallo mono bloc ultra-low NOx burner.It is also engaged in the low NOx revamping, BOT investment and district heating sectors.

In the future, Kenuo boiler, adopting the technology of Italy Cavallo, will remain true to its original aspiration and keep its mission firmly in mind: creating and servicing better for the society!

销售网络

SALES FOOTPRINTS

SINO-ITALIAN JOINT VENTURE
INTERNATIONAL STANDARDS



经典案例 CLASSIC CUSTOMER

最高人民法院
北京环卫集团
China unicom中国联通
新华书店 XINHUA BOOKSTORE
宏大投资
中国音乐学院
北京水利水电研究院
中央电视台
青岛市立医院
北京同仁堂
中航国际 AVIC INTERNATIONAL
北京航空航天大学
北京燃气 BEIJING GAS
中国人民银行 THE PEOPLE'S BANK OF CHINA
郁美净
兰州铁路 LAN ZHOU RAILWAY
九华集团 JIUHUA GROUP (BEIJING)
中央财经大学 Central University of Finance and Economics
北京饭店
国家电网公司 STATE GRID
三一重工 SANY
BSMC
RISUN日昌电气
北科建集团 BSD
北京市网球运动管理中心
SAMSUNG
华通热力 HUATONG HEATING POWER
吴忠市人民医院
延庆区教育委员会