ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ
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中正锅炉
ZOZEN BOILER

共享科技 体验完美 贵于品质 恒于服务
Share the science and technology Taste the feelding of pefect Quality is the topmost Providing constant service

有机热载体锅炉
Organic Heat Carrier Boilers

中正锅炉 ZOZEN BOILER | 无锡中正锅炉有限公司
WUXI ZOZEN BOILERS CO.,LTD.

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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。

RRGADING OUR

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 of12000 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!

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有机热载体炉锅炉
Organic Heat Carrier Boiler

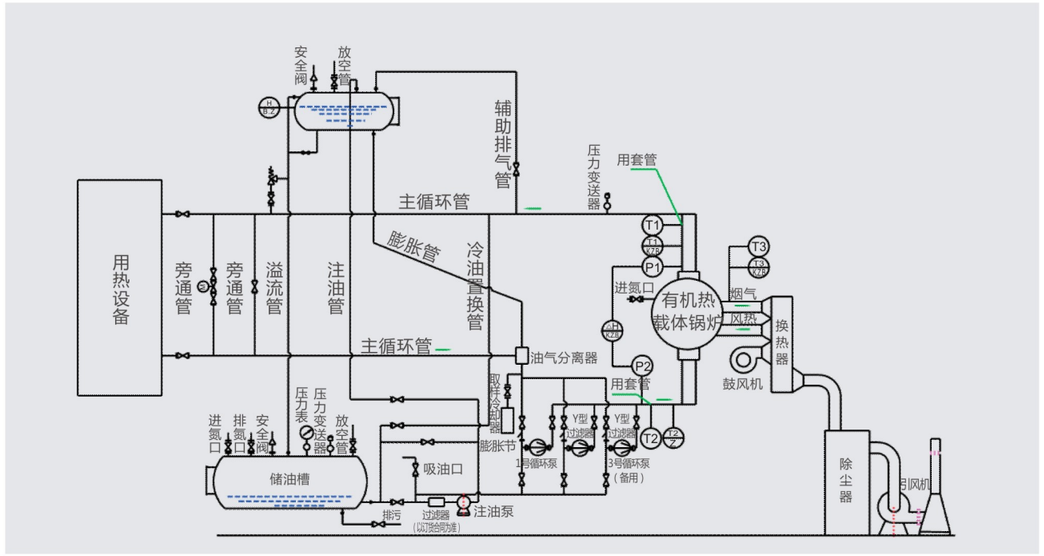
有机热载体锅炉是采用有机热载体作为热媒介质进行热量传递的锅炉。利用有机热载体的高温特性，有机热载体锅炉可实现低压高温供热。锅炉采用注入式强制循环系统，换热面采用方、圆盘管结构，有燃油、燃气、燃煤、燃生物质等不同燃料的热载体锅炉和电加热热载体锅炉。

广泛应用于石油、化工、化纤、制药、纺织印染、轻工、建材、木材加工、食品、筑路沥青加温等需要高温 供热的工业领域。

The organic heat carrier boiler is a kind of boiler that use organic heat carrier as heat media to performheat transmission. As organic heat carriertemperature is higher, the heat carrier boiler can realize thermal supply with higher temperature and lower pressure. The boiler adopts ejected forced circulation system; heat exchange surface adopts square and circle coil tube structure; there are different boiler models firing on different fuels, like oil, gas, coal, biomass etc.

Be widely used in the industry area like petroleum, chemistry, chemical fiber, pharmacy, textile printing, light industry, building materials, wood processing, food, road building, pitch heating, etc, which require high temperature heat supply.

有机热载体锅炉系统工艺流程图 \ PROCESS FLOW DIAGRAM OF BOILER



产品特点 \ PRODUCT FEATURE

•有机热载体锅炉是基于强制循环的设计思维而开发的特种锅炉；锅炉工作压力低，安全性能高、使用寿命长。
•封闭循环供热，根据实际需要可采用闭式或开式循环系统，输送热能，热损失小，节能效果显著，环保效果好。
•锅炉采用多回路盘管设计，具有安全性强、受热面足、热效率高等优点。
•采用逆流换热流程，传热效果好，锅炉出口烟温与导热油出口温差可控制在 30 ℃左右，配合锅炉尾部传热系统，锅炉排烟温度可小于170℃。
•采用高温热载体，液相锅炉出油温度可达350℃，气相锅炉的油气温度可达450℃。
•立式和卧式布置的锅炉结构，可以满足用户不同场地情况和布置的需求。
•多种锅炉尾部节能装置可供选择，利用锅炉尾气产生蒸汽、热水、热空气等供热介质，实现锅炉高效率。

•Organic heat carrier boiler is special boiler which design and development is based on forced circulation. It has lower working pressure so it has safer operation with longer life span.
•Heat supply is in a sealed loop, and according to actual user application, it can adopt either closed or open circulation system. Heat conveying has less heat loss, energy saving effect is significant, and environment protection effect is good.
•The boiler adopts multi-return coil tube design so it has the advantages of safer operation, sufficient heating surface area and higher thermal efficiency etc.
•The boiler adopts reverse flow heat exchange diagram, so it has better heat transmission effect. The thermal oil temperature difference between boiler outlet flue temperature and outlet thermal oil temperature can be controlled at about 30 ℃. Combined with the rear heat transfer system, the boiler flue gas emission temperature can reach lower than 170℃.
•Using high temperature heat carrier, the liquid state type boiler's outlet oil temperature can reach to 350℃, and the gas state type boiler's outlet oil temperature can reach to 450℃.
•The vertical and horizontal boiler structure arrangements can satisfy users' need for different site conditions and boiler room layout requirements.
•We have several boiler rear energy saving device to users' options, which can utilize the rear flue gas to generate steam, hot water, hot air etc for other heat supply media so it can reach higher efficiency to the boiler.

功能特点 \ FUNCTION FEATURE

•具有低压、高温、安全、高效节能的特点。
•具有完备的运行控制和安全监测装置，可以精密地控制工作温度，保证锅炉安全运行。
•结构合理、配套齐全、安装周期短，运行和维修方便，便于锅炉布置。

•It owns the characteristics of low pressure, high temperature, safe and high efficiency.
• It has a complete control system and safety monitoring device that can accurately control the working temperature and safeguard safety operation.
•It has a reasonable structure, complete auxiliary equipment, short installation period, convenient operation and maintenance, and easy arrangement for a boiler room.

YLW系列燃煤、生物质有机热载体锅炉
series coal firing & biomass firing thermal oil boiler

概述 \ INTRODUCTION

YLW系列锅炉为方盘管卧式链条炉排组装锅炉，链条炉排和锅炉本体分体出厂。在工地就位后，只需接通油、电就可投入运行，该锅炉采用链条炉排实现机械加煤，配有鼓、引风机进行机械通风，并装有出渣机实现机械出渣。

运行时燃料自加煤斗落到炉排上进行燃烧，高温烟气经过后拱反射至炉前进入炉膛，经过辐射受热面辐射换热后，进入对流受热面进行对流换热，然后 通往余热锅炉，再进入空气预热器，最后进入除尘器，除尘后烟气由引风机抽引通过烟囱排向大气。

锅炉受热面包括四部分：炉膛辐射受热面、对流管束受热面、余热锅炉，空气预热器（省煤器）。

YLW series boiler is of square coil tube vertical type chain grate assembled boiler that is delivered in two separate parts - grate part and boiler body. After erection at site, it only needs to connect thermal oil piping and electricity to start operation. This boiler adopts chain grate to perform mechanical fuel feeding, is equipped with FD fan and ID fan for air ventilation, and is equipped with slag conveying machine to remove bottom slag.

During operation, the fuel drops onto the grate from hopper and fires. The high temperature flue gas is reflected to the front by the reararch and goes into furnace, after heat exchange by radiation heating area it goes into convection heating area, andafter heat exchange here, it goes into waste heat boiler, then into air pre-heater, and then goes into dust collector.After dust collector and drawn by ID fan, the flue gas is finally emitted to atmosphere through chimney.

There are four heating areas in a boiler: furnace radiation heating area, convection tube bank heating area,waste heat boiler and air pre-heater (economizer).

YLW系列燃煤、生物质有机热载体锅炉参数表
PARAMETER OF YLW SERIES COAL FIRING & BIOMASS FIRING THERMAL OIL BOILER

参数项目 Item / 锅炉型号 Model		YLW-1400 M/A II	YLW-1800 M/A II	YLW-2400 M/A II	YLW-2800 M/A II	YLW-3500 M/A II	YLW-4200 M/A II	YLW-4600 M/A II	YLW-6000 M/A II	YLW-7000 M/A II	YLW-8200 M/A II
额定热功率 Rated thermal power	MW	1.4	1.8	2.4	2.8	3.5	4.2	4.6	6.0	7.0	8.2
	$\times 10^4$ kcal/h	120	160	200	240	300	360	400	500	600	700
额定出口油温度(℃) Rated outlet oil temperature		320	320	320	320	320	320	320	320	320	320
额定工作压力(MPa) Rated working pressure		0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	1.0
热效率(≥%) Heat efficiency		80	80	80	80	80	80	80	80	80	80
系统装机容量(kW) System installed capacity		55	63	76	85	105	125	155	170	193	150
膨胀罐(m^3) Expansion slot		2.5	2.5	2.5	3.5	3.5	5.0	5.0	8.0	10	15
储罐(m^3) Oil cistern		5	6	6	8	8	10	10	15	15	25
最大运输件外形尺寸(mm) Maximum transport dimensions	长(L) Length	5000	5600	6500	6500	7500	7400	8000	8320	9000	9760
	宽(W) Width	2250	2250	2500	2550	2550	2870	2820	3330	3330	3270
	高(H) Height	2450	2750	2800	3200	3200	3300	3350	3250	3350	4010
最大运输重量(kg) Weight of biggest part for transportation		11000	12700	13500	14500	16500	25500	29000	33500	36000	35000

参数项目 Item / 锅炉型号 Model		YLW-9400 M/A II	YLW-10500 M/A II	YLW-12000 M/A II	YLW-14000 M/A II	YLW-16500 M/A II	YLW-18000 M/A II	YLW-21000 M/A II	YLW-23300 M/A II	YLW-26000 M/A II	YLW-29200 M/A II
额定热功率 Rated thermal power	MW	9.4	10.5	12.0	14.0	16.5	18.0	21.0	23.3	26.0	29.2
	$\times 10^4$ kcal/h	800	900	1000	1200	1400	1600	1800	2000	2200	2500
额定出口油温度(℃) Rated outlet oil temperature		320	320	320	320	320	320	320	320	320	320
额定工作压力(MPa) Rated working pressure		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
热效率(≥%) Heat efficiency		80	80	80	80	80	80	81	81	81	81
系统装机容量(kW) System installed capacity		160	160	260	320	380	450	520	600	700	825
膨胀罐(m^3) Expansion slot		15	15	20	20	30	30	30	30	30	30
储罐(m^3) Oil cistern		25	25	30	30	40	40	60	80	80	80
最大运输件外形尺寸(mm) Maximum transport dimensions	长(L) Length	9760	10500	11200	10500	11500	11500	11500	11500	11500	12000
	宽(W) Width	3500	3500	3560	4000	4250	4500	4500	3000	3000	3250
	高(H) Height	4010	4010	4010	3500	3500	3500	3850	3950	3950	4200
最大运输重量(kg) Weight of biggest part for transportation		24800	25000	27500	31000	33000	35000	38000	17500	19000	22000

说明：1、样本所列参数仅供参考，最终数据以蓝图为准；2、特殊要求的产品可另行设计。
Note: 1、Parameters listed should be used for reference only, The final data is subject to the blueprint; 2、Products with special requirements could be designed separately.

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制造工艺特点
MANUFACTURING PROCESS FEATURES

锅炉制造工艺

●钢管下料采用数控三维激光切割机
●辐射区方盘管制作采用Φ168数控立体弯管机预弯后再对接，无强行装配
●对流区蛇形管制作采用蛇形管自动生产线，一次成形

Boiler manufacturing process

●The laying-off of steel tube adopts CNC 3D laser cutting machine
●The manufacture of square coil pipe in radiation area adopts Φ168 CNC three-dimensional pipe bender to prebend and then butt joint. No forced assembling.
●The manufacture of serpentuator in convection area adopts serpentuator automatic production line and shaping one time

锅炉焊接工艺

●方盘管均采用氩弧焊焊接工艺，并对焊缝进行10%射线探伤
●蛇形管采用自动氩弧焊焊接工艺，同时并对焊缝进行X实时成像，杜绝不合格焊缝进入弯管工序
●100%水压试验

Boiler welding process

●Square coil pipe adopts argon arc welding technique and the weldline will be done 100% radiographic inspection.
●Serpentuator adopts automatic argon arc welding technique and the weldling should be done X real time imaging. Unqualified weldline enters into bending process is forbidden.
●100% Hydrostatic test

炉体保温

●内侧采用优质的耐火砖砌筑，外用凹凸面板，中间用优质珍珠岩，炉体温度控制在50℃以下，热损失最小化

Furnace insulation

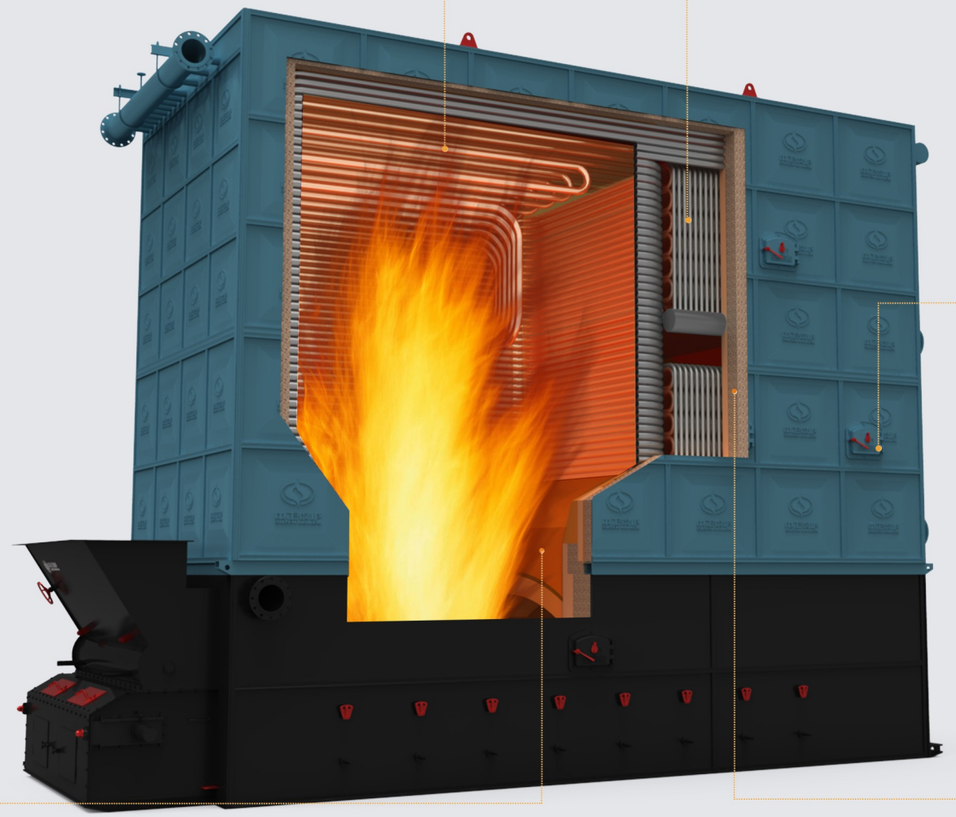
● Use superior refractory brick to build inside and concave-convex panel outside and superior perlite in the middle. Keep the furnace temperature under 50℃ to make the minimization of loss.

辐射段

●采用先进结构形式，优化辐射受热面，并且在燃烧室内降低烟气粉尘的形成及排放

Radiation section:

●adopt advanced structural style to optimize radiation heating surface and reduce the formation and discharge of flue gas dust in combustion room.



对流段

●优化对流受热面，采用有效固定及支撑结构，使之使用寿命更长

Convection section

●Optimize convection heating surface and adopt effective fix and structural support to make its working life longer.

清灰门

●设置有效清灰结构，方便维护、运行及清理

Ash removing door:

●Set up effective ash removing structure to make it easy to maintain, operate and clean.

燃烧室

●针对有机热载体锅炉特点及煤的不同种类，设计适应Ⅱ、Ⅲ类烟类、无烟煤、各种生物质燃料的多种燃烧室。

Combustion room

●According to the characteristics of organic heat carrier boiler and various kinds of coal, design various kinds of combustion room adapt to II, III bituminous coal, anthracite, sorts of biomass fuel.

隔墙

●对流受热面设置有效烟气隔墙，浇注隔墙使用寿命更长，效果更好

Partition

● Set up effective flue gas partition for convection heating surface and cast partition to make it work longer and more effectively.

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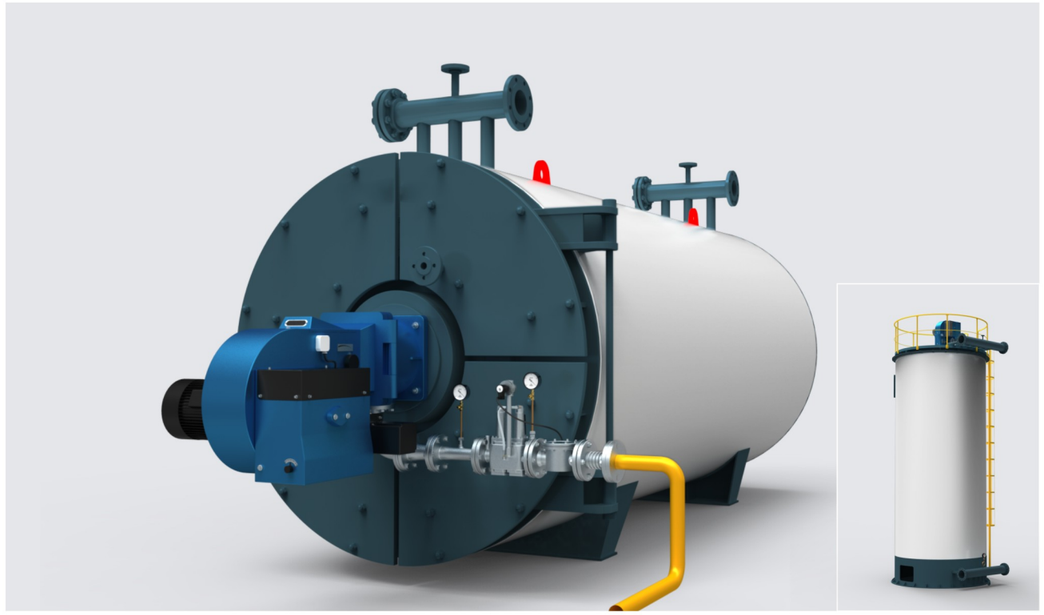

YY(Q)W(L)系列卧(立)式燃气、油有机热载体锅炉
series horizontal & vertical type gas firing & oil firing thermal oil boiler

概述 \ INTRODUCTION

YY(Q)W（L）系列燃气，油有机热载体锅炉采用三回程圆盘管结构，盘管端部采用缩口盘管，有效的保护了锅炉端部的炉墙，配有先进的燃烧装置，锅炉运行全自动化。燃料经燃烧器点燃燃烧后，形成的火炬充满在圆盘管内，并通过盘管壁传递辐射热，此为第一回程。燃烧产生的高温烟气在后炉门处汇聚，转向进入第二回程，即对流管束区，经对流换热后，烟气温度逐渐降低后至前炉门，并在此转向进入第三回程管束区，随后经节能器进入烟囱排向大气。该锅炉整体出厂，在工地就位后，只需接通气(油)电就可投入运行。锅炉受热面包括四部分：炉膛辐射受热面，第一对流管束受热面，第二对流管束受热面，节能器（余热锅炉）。

YY(Q)W(L)series gas & oil firing thermal boiler adopts 3-trips round coil tube structure. The coil tube end adopts beam port to effectively protect the furnace wall at boiler end,is equipped with advanced combustion device, and with fully automatic operation. After fuel ignition from burner, it forms a flame full fill into the round furnace tube, and through the furnace tube wall, the heat is transferred by radiation, which is the first trip. The high temperature flue gas after combustion gathers at rear furnace door and then turns into the second trip, which is convection tube area. After convection heat exchange, the flue gas temperature isgoing lower and comes to front furnace door, and from here it turns into the third trip entering into tube bank area, then through economizer it is emitted into atmosphere through chimney. This type of boiler is delivered in one whole body, and after erection at site, it only needs to connect thermal gas(oil) piping and electricity to start operation.

The boiler has 4 heating areas: furnace radiation heating area, the first convection tube heating area, the second convection tube heating area and economizer (waste heat boiler).

YY(Q)W(L)系列卧(立)式燃气、油有机热载体锅炉参数表
PARAMETER OF YY(Q)W(L) SERIES HORIZONTAL & VERTICAL TYPE GAS FIRING & OIL FIRING THERMAL OIL BOILER

参数项目 Item / 锅炉型号 Model		YY(Q)W-700 Y(Q)	YY(Q)W-1000 Y(Q)	YY(Q)W-1200 Y(Q)	YY(Q)W-1400 Y(Q)	YY(Q)W-1800 Y(Q)	YY(Q)W-2400 Y(Q)	YY(Q)W-2800 Y(Q)	YY(Q)W-3500 Y(Q)
额定热功率 Rated thermal power	MW	0.7	1.0	1.2	1.4	1.8	2.4	2.8	3.5
	$\times 10^4$ kcal/h	60	80	100	120	160	200	240	300
额定出口油温度(℃) Rated outlet oil temperature		320	320	320	320	320	320	320	320
额定工作压力(MPa) Rated working pressure		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
热效率(≥%) Heat efficiency		88	88	88	88	90	90	90	90
系统装机容量(kW) System installed capacity		18	18	35	35	56	56	66	75
最大运输件外形尺寸(mm) Maximum transport dimensions	长(L) Length	3550	3800	3800	4250	4900	5250	6050	6650
	宽(W) Width	1680	1680	2000	2000	2200	2450	2450	2550
	高(H) Height	2050	2050	2400	2550	2600	2950	2950	3000
最大运输重量(kg) Weight of biggest part for transportation		4220	5000	5450	6400	8500	11200	12500	14000

参数项目 Item / 锅炉型号 Model		YY(Q)W-4200 Y(Q)	YY(Q)W-4600 Y(Q)	YY(Q)W-6000 Y(Q)	YY(Q)L-7000 Y(Q)	YY(Q)L-8200 Y(Q)	YY(Q)L-9400 Y(Q)	YY(Q)L-10500 Y(Q)	YY(Q)L-12000 Y(Q)	YY(Q)L-14000 Y(Q)
额定热功率 Rated thermal power	MW	4.2	4.6	6.0	7.0	8.2	9.4	10.5	12.0	14.0
	$\times 10^4$ kcal/h	360	400	500	600	700	800	900	1000	1200
额定出口油温度(℃) Rated outlet oil temperature		320	320	320	320	320	320	320	320	320
额定工作压力(MPa) Rated working pressure		0.8	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.0
热效率(≥%) Heat efficiency		90	90	90	90	90	90	90	90	90
系统装机容量(kW) System installed capacity		95	95	140	140	140	200	200	240	300
最大运输件外形尺寸(mm) Maximum transport dimensions	长(L) Length	6850	6950	7200	8000	8500	9500	10500	12350	13500
	宽(W) Width	2700	2850	3250	3550	3650	3800	3800	3800	4000
	高(H) Height	3150	3310	3900	3950	4000	4000	4000	4000	4200
最大运输重量(kg) Weight of biggest part for transportation		15800	18000	24500	28500	33000	39000	55000	60000	65000

说明：1、样本所列参数仅供参考，最终数据以蓝图为准；2、特殊要求的产品可另行设计。
Note: 1、Parameters listed should be used for reference only, The final data is subject to the blueprint; 2、Products with special requirements could be designed separately.

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制造工艺特点
MANUFACTURING PROCESS FEATURES

锅炉制造工艺

●钢管下料采用数控三维激光切割机
●圆盘管制作采用数控盘管生产线，一次成形，无需整形

Boiler manufacturing process

●The laying-off of steel tube adopts CNC 3D laser cutting machine
● The manufacture of round coil pipe adopts CNC coil pipe production line and shaping one time. No forced shaping.

锅炉焊接工艺

●钢管对接焊均采用自动氩弧焊焊接工艺，同时并对焊缝进行X实时成像，杜绝不合格焊缝进入盘管生产线
●100%水压试验

Boiler welding process

● Steel tube butt welding adopts automatic argon arc welding technique and the weldling should be done X real time imaging. Unqualified weldline enters into bending process is forbidden.
●100% Hydrostatic test

炉体保温

●内侧采用优质的保温材料，外用不锈钢板，最大限度降低散热损失，改善操作环境

Furnace insulation

● Use superior insulation material inside and stainless steel plate outside. Reduce heat loss most and improve the operating environment.

炉顶

●优化平台、扶梯及顶部保温隔热，降低炉顶温度，保护锅炉及燃烧器

Furnace top

●Optimize the heat insulation of platform, ladder and top to reduce the furnace top temperature and protect the boiler and burner

辐射段

●由于内盘管吸热量远大于中圈及外圈，设计内圈盘管流量更大，在高温运行时更安全可靠

Radiation section

● The caloric receptivity of inner coil pipe is far more than middle and outer ring, the inner coil pipe is designed with more flow. This makes it more safe and reliable under high temperature.

整装出厂

●锅炉整体验收合格，整装出厂，便于安装、调试、使用。

Wholly assembled delivery

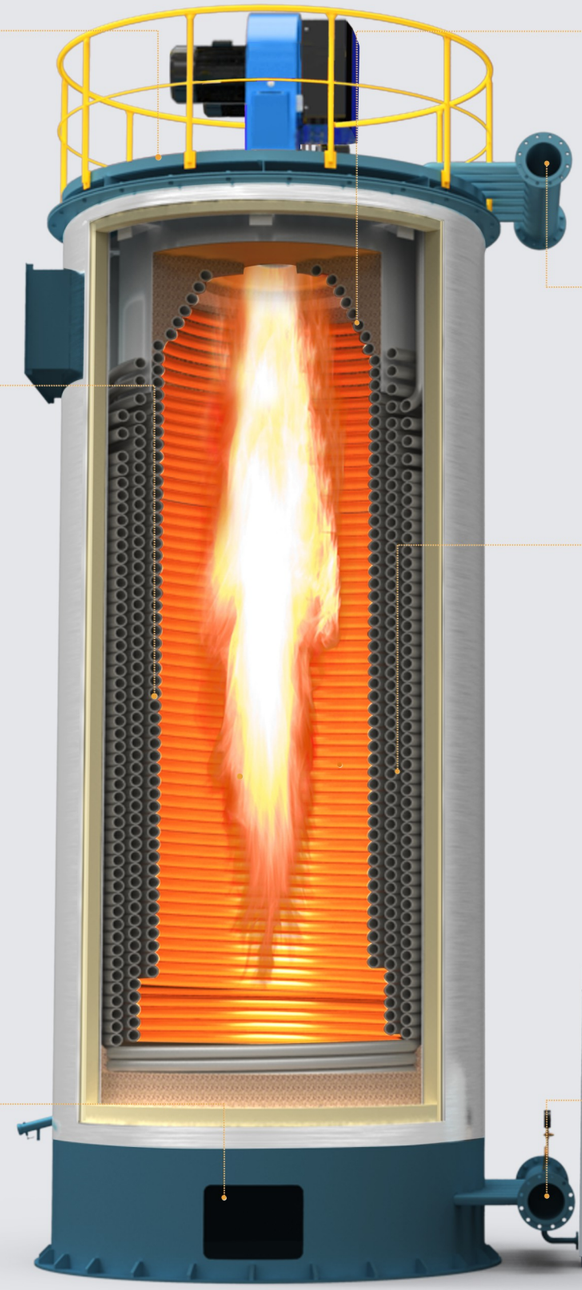
●Boiler general inspection and acceptance , wholly assembled delivery , convenient erection , commissioning , operation。

人孔、检查门

●便于维修、清查、清理

Manhole, inspection door

● Convenient for maintenance, check, clean



锥盘管

●锥形盘管，有效保护了锅炉端部的炉墙及顶部燃烧器

Cone coil pipe

●Cone coil pipe effectly protect the furnace wall of boiler end and burner of boiler top.

出口集箱

●采用两端法兰和法兰盖结构，方便锅炉房管道安装及布置

Inlet and outlet header:

●Adopt two terminals flange and blind flange structure to make the installation and arrangement of boiler room pipe conveniently.

对流段

●多层密排管束及每圈多个起密封固定作用的圆钢，杜绝烟气短路

Convection section

● Multilayers solid matter tube bundle and steel rod whose function is to seal and fix completely eradicate flue gas short circuit.

全自动控制

●全自动运行、燃烧、高位罐液位、出口温度及流量均自动调节、自动保护、

Fully automatic control

●Fully automatic operation、combustion、high slot oil level, outlet temperature and flow rate are adjusted automatically and self protected.

进口集箱

●采用两端法兰和法兰盖结构，方便锅炉房管道安装及布置

Inlet and outlet header:

●Adopt two terminals flange and blind flange structure to make the installation and arrangement of boiler room pipe conveniently.

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余热回收利用
Waste heat recovery and utilization

概述:

有机热载体锅炉的构造和运行原理造成其尾部排烟温度在300℃左右,产生巨大的热能浪费。为减少热能损失，通过高温烟气的余热回收利用，提高有机热载体锅炉的综合热效率,最大限度的实现节能降耗和减排。我公司研发的有机热载体锅炉配有多种余热回收装置，满足不同用户需求。以下为几种形式的系统流程图（不限于以下几种形式）。

INTRODUCTION:

Due to organic thermal media carrier boiler's structure and work principle, it makes the flue gas temperature at rear emission for about 300 ℃ , and therefore caused quite big thermal energy waste. In order to reduce this heat loss, by using waste heat recovery and utilization, it raises general thermal efficiency for the organic thermal media carrier boiler, and has realized energy saving and emission reduction in maximum extent. The organic thermal media carrier boiler series developed by our company are equipped with various waste heat recovery and utilization devices and can satisfy the requirements to various users. Below mentioned are several forms of system flow chart (not limited to the mentioned forms).

图例一：卧式燃气（油）有机热载体锅炉余热回收装置：余热锅炉加节能器

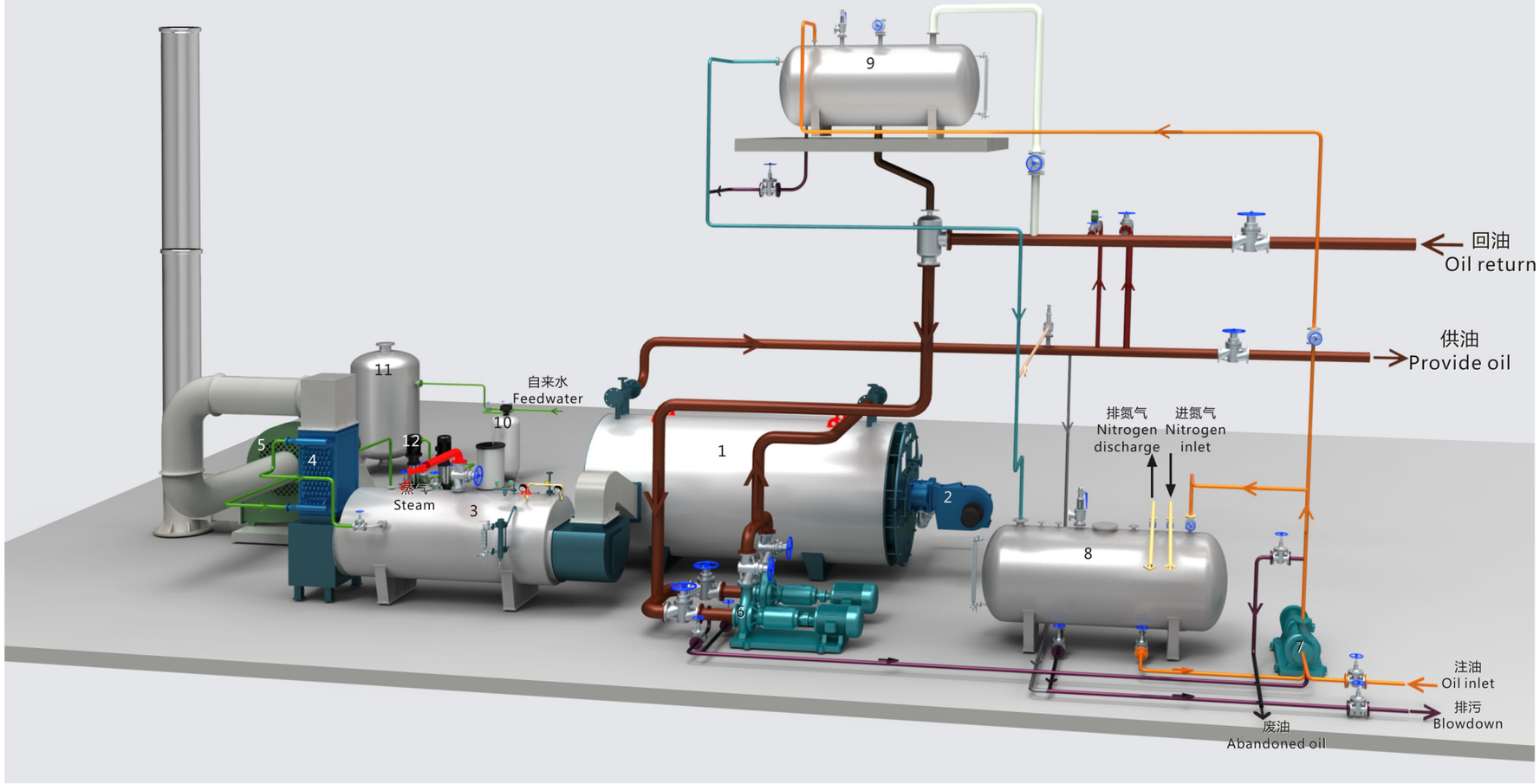
Chare Ⅰ：Horizontal type gas/oil firing organic thermal media carrier waste heat recovery device:waste heat boiler + economizer.

主要设备 Main equipment

1. 有机热载体锅炉	Organic Heat Carrier Boiler	7. 注油泵	Feedoil pump
2. 燃烧器	Burner	8. 储罐	Storage tank
3. 余热锅炉	Waste Heat Boiler	9. 膨胀罐	Expansion tank
4. 节能器	Economizer	10.软水器	Softener
5. 引风机	Induced draft fan	11.软水箱	Water tank
6. 循环油泵	Circulation pump	12.给水泵	Feedwater pump

图样列表 Main equipment

循环管	Circulation pipe
辅助排气管	Auxiliary vent pipe
溢流管	Overflow pipe
注油管	Oil filler pipe
排油管	Oil exit pipe
冷油置换管	Cold oil replace pipe
安全排放管	Safe discharge pipe
膨胀管	Expansion pipe
水管	Water pipe
蒸汽管道	Steam pipe



图例二：立式燃气（油）有机热载体锅炉余热回收装置：余热锅炉加节能器

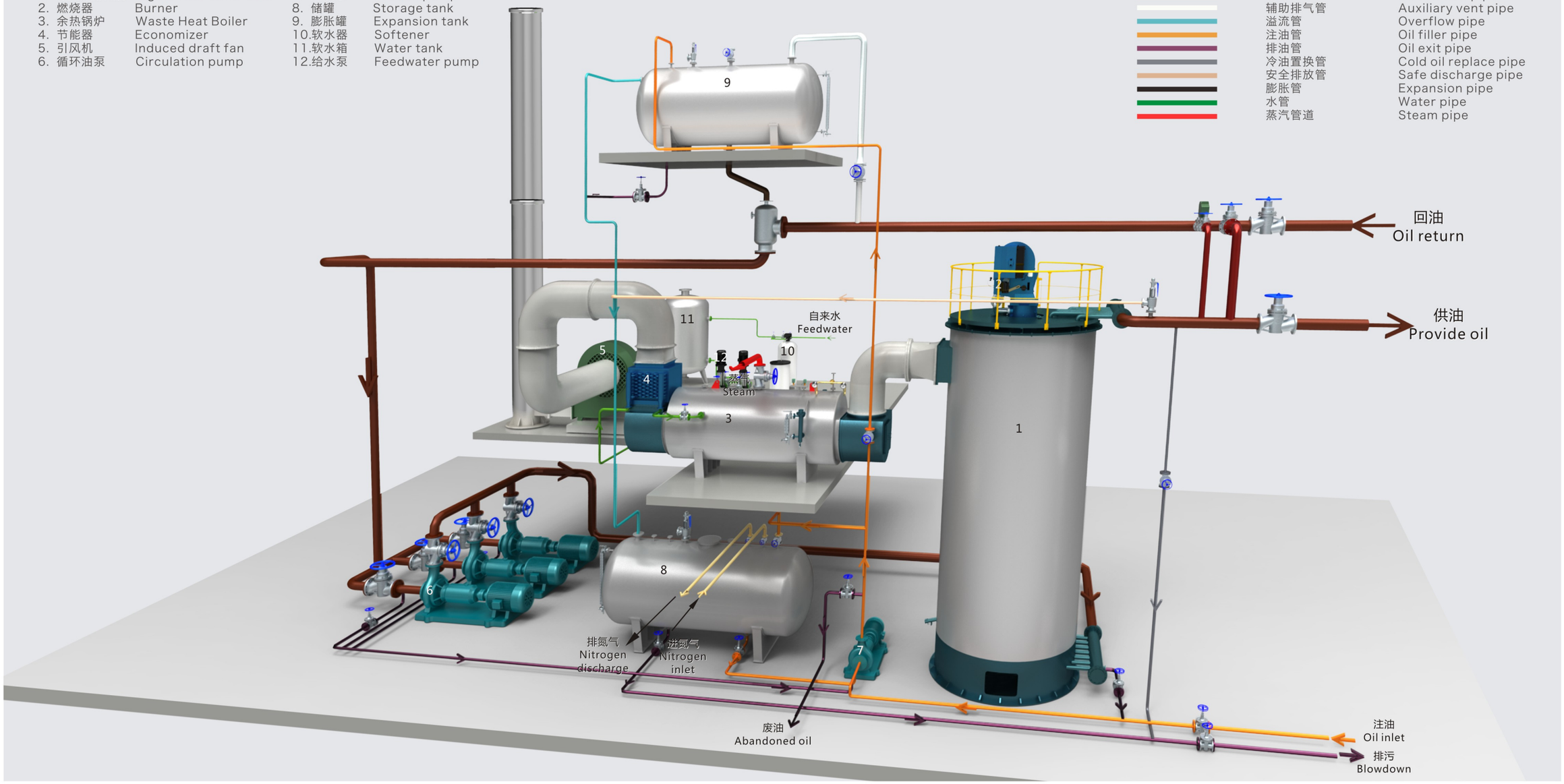
Chare Ⅱ:Vertical type gas/oil tiring organic thermal media carrier waste heat recovery device:waste heat boiler + economizer.

主要设备 Main equipment

1. 有机热载体锅炉	Organic Heat Carrier Boiler	7. 注油泵	Feedoil pump
2. 燃烧器	Burner	8. 储罐	Storage tank
3. 余热锅炉	Waste Heat Boiler	9. 膨胀罐	Expansion tank
4. 节能器	Economizer	10.软水器	Softener
5. 引风机	Induced draft fan	11.软水箱	Water tank
6. 循环油泵	Circulation pump	12.给水泵	Feedwater pump

图样列表 Main equipment

循环管	Circulation pipe
辅助排气管	Auxiliary vent pipe
溢流管	Overflow pipe
注油管	Oil filler pipe
排油管	Oil exit pipe
冷油置换管	Cold oil replace pipe
安全排放管	Safe discharge pipe
膨胀管	Expansion pipe
水管	Water pipe
蒸汽管道	Steam pipe



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图例三：燃煤（生物质）有机热载机锅炉余热回收装置：余热锅炉加省煤器

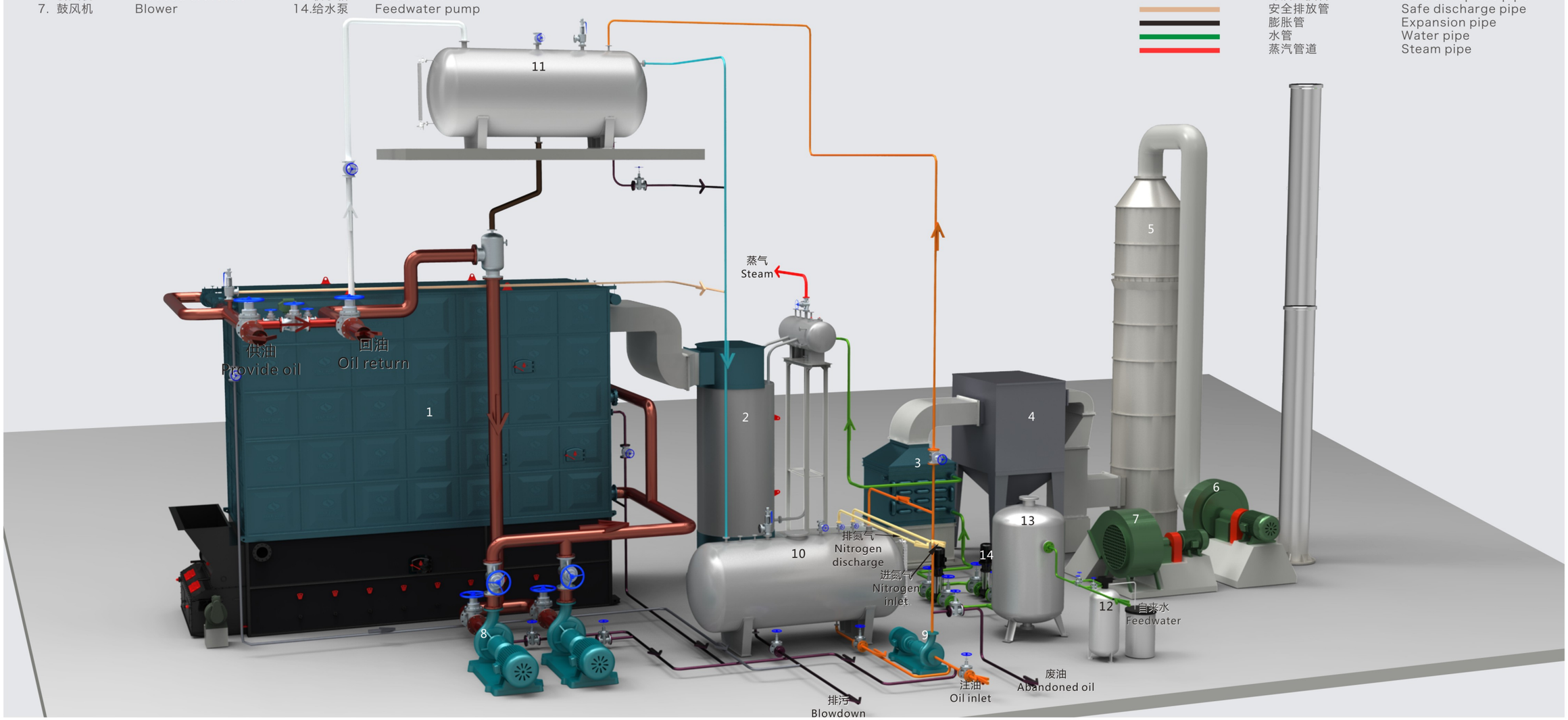
Chare Ⅲ:coal(biomass) firing organic thermal media carrier boile waste heat recovery device:waste heat boiler + economizer.

主要设备 Main equipment

1. 有机热载体锅炉	Organic Heat Carrier Boiler	8. 循环油泵	Circulation pump
2. 余热锅炉	Waste Heat Boiler	9. 注油泵	Feedoil pump
3. 节能器	Economizer	10.储罐	Storage tank
4. 多管除尘器	Multi-tube dust collector	11.膨胀罐	Expansion tank
5. 水膜除尘器	Wet scrubber	12.软水器	Softener
6. 引风机	Induced draft fan	13.软水箱	Water tank
7. 鼓风机	Blower	14.给水泵	Feedwater pump

图样列表 Main equipment

循环管	Circulation pipe
辅助排气管	Auxiliary vent pipe
溢流管	Overflow pipe
注油管	Oil filler pipe
排油管	Oil exit pipe
冷油置换管	Cold oil replace pipe
安全排放管	Safe discharge pipe
膨胀管	Expansion pipe
水管	Water pipe
蒸汽管道	Steam pipe



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图例四：燃煤（生物质）有机热载机锅炉余热回收装置：余热锅炉加空预器

Chare Ⅳ:coal(biomass) firing organic thermal media carrier waste heat recovery device:waste heat boiler + airpreheater.

主要设备 Main equipment

1. 有机热载体锅炉	Organic Heat Carrier Boiler	8. 循环油泵	Circulation pump
2. 余热锅炉	Waste Heat Boiler	9. 注油泵	Feedoil pump
3. 空预器	Air preheater	10.储罐	Storage tank
4. 多管除尘器	Multi-tube dust collector	11.膨胀罐	Expansion tank
5. 水膜除尘器	Wet scrubber	12.软水器	Softener
6. 引风机	Induced draft fan	13.软水箱	Water tank
7. 鼓风机	Blower	14.给水泵	Feedwater pump

图样列表 Main equipment

循环管	Circulation pipe
辅助排气管	Auxiliary vent pipe
溢流管	Overflow pipe
注油管	Oil filler pipe
排油管	Oil exit pipe
冷油置换管	Cold oil replace pipe
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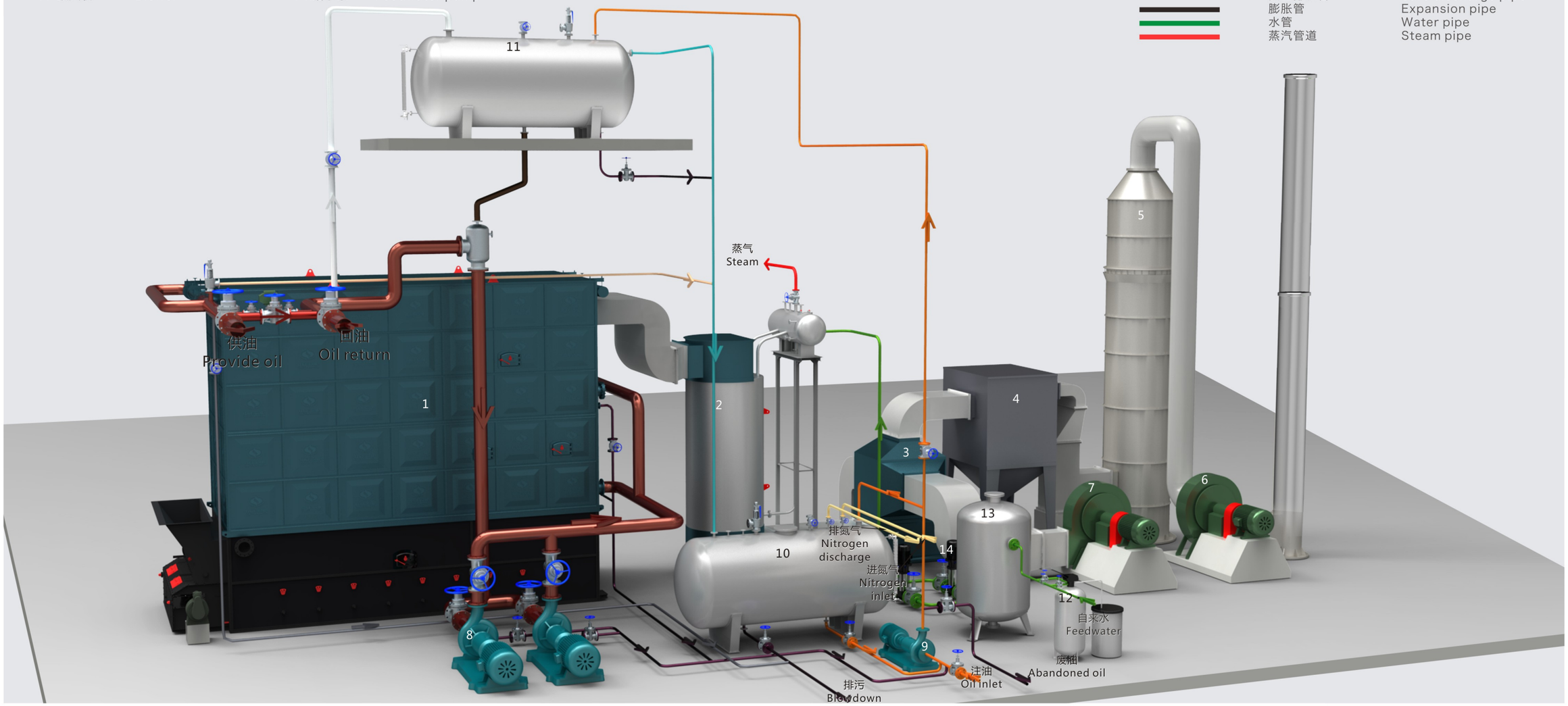
膨胀管	Expansion pipe
水管	Water pipe
蒸汽管道	Steam pipe



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