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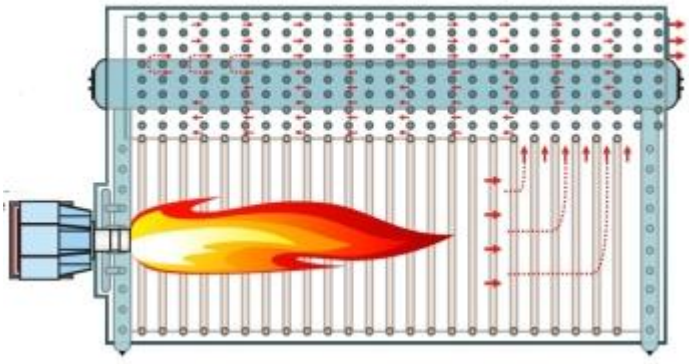
SZS Series Gas/Oil Fired Pressurized Hot Water Boiler System Introduction

Overview

SZS series gas and oil-fired boilers are double-drum, horizontal, and chamber-fired D-shaped layout structures, with the furnace on the right and tube bundle convection on the left.The upper and lower drums are fixed on the chassis of the main body through movable supports in the middle of the lower pot and at both ends, and ensure that the boiler as a whole expands to both ends.

The furnace is surrounded by water-cooled walls. The water-cooled wall usually adopts a membrane wall structure. The membrane-type water-cooled wall on the left side of the furnace completely seals and separates the furnace and the convection tube bundle.The rear part of the convection tube bundle area is a sparse staggered structure (convection tube bundle Ⅰ zone),and the front part is a sequential structure (convection tube bundle Ⅱ zone).

The smoke produced by the combustion of the furnace enters the ember chamber successively from the smoke outlet at the rear of the furnace,to the sparse staggered convection tube bundle area,to the front convection tube bundle area, and then turns from the left front of the boiler to enter the spiral finned tube economizer and condenser. Finally, it enters the chimney or is drawn into the chimney by the induced draft fan and discharged to the atmosphere.



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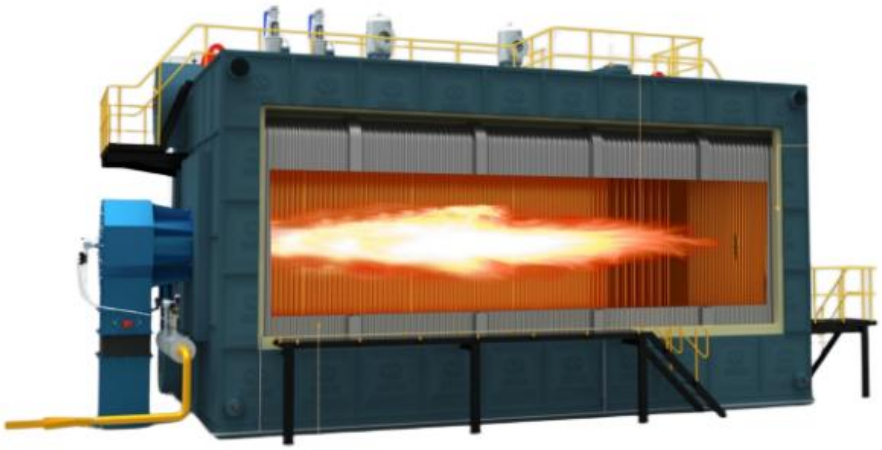
Boiler System Composition

It consists of boiler main body,control system and auxiliary equipment.

Boiler Main Body Technical Features



Membrane type structure
Whole membrane wall structure D-type arrangement

★Convection tubes of upper and lower drum form the convection heating surface and ensure the whole boiler expand towards

★The combustion chamber adopts narrow pitch membrane wall which has good gas tightness and reduce heat loss and improve boiler heat efficiency

★The rear part of convection tubes is rare sparse staggered structure while the front part is sequential structure

★The front and rear walls of boiler body adopt membrane type structure which highly improve the working life of front and rear wall,up to more than 20 years

★The sealing of both sides of membrane wall and drums adopt comb plate to avoid the reveal of condensate water and fuel gas caused by sealing with refractory concrete

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Reliable Water Cycle

★The high temperature zone of the boiler body adopts forced circulation to ensure that the heating surface of each part can be reliably cooled and prevent vaporization.

Combustion Chamber

★ Since the combustion chamber adopts a full-membrane water-cooled wall structure and adopts micro-positive pressure combustion,there is no problem of stringing smoke,and the operating environment is pollution-free

Safety Devices

★The boiler is equipped with explosion-proof doors and flame detectors,so the operation is safe and reliable

Boiler Main Body Insulation

★High-quality aluminum silicate fiber is used, and Refractory cement insulation is used for heat preservation.The temperature of the boiler main body is controlled below 45° to effectively control heat loss

Manhole, Inspection Hole

★Manholes are arranged in the front and back of the upper and lower drums,and inspection doors are arranged in the rear of the boiler.

★Easy to open, convenient for users to repair and clean the inside and outside

Oil/Gas Fired pressurized Boiler Control System

According to the customer's demand for thermal power,temperature,pressure and equipment configuration,the boiler control system is developed and designed to achieve the purpose of monitoring the parameters and status of the boiler,and realize the intelligent of boiler control.

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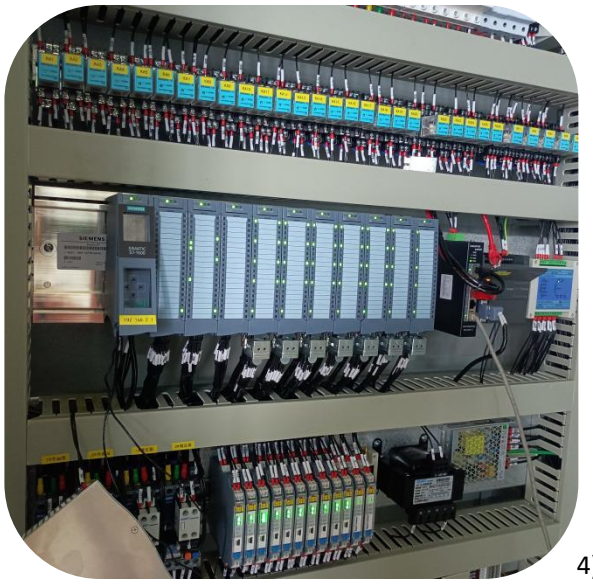
The Core Control Mode of the pressurized boiler system:MCU control(Microcontroller unit), Integrated controller (All-in-one PLC,not programmable),PLC control(programmable),PLC+PC control,DCS control.



1).Main Control:liquid level control of boiler,water tank and oil tank;pressure control;boiler system pressure control;temperature control,etc.Manual/automatic control of burners, pump valves and other equipment,master and backup switching.Water pump start and delay shutdown, water pump running status detection and burner interlock.

2).Anti-freezing Functions:Make the boiler run safely and stably at night when unattended, and make the system work in an energy-saving state to prevent the pipeline from freezing.

3).Self-inspection Functions of the control system: continuous inspection.To alarm and interlock protection when abnormal.

4).It collects,records,saves and manages important information and data function.

The Remote Instrument Valves used in the Control System Include: temperature sensor,liquid level gauge,pressure transmitter,pressure controllers,flow meters,electric regulators etc.

Auxiliary Equipment Features

1)Burner

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We can equip with different burner according to boiler parameter,fuel,Many burner brands meet different customers requirement.For natural gas fuel, we configure Riello, and for oil, we configure Baltur.
The burner brand:Baltur,Riello,Weishaupt,Hofamat,Honeywell,Ecoflam,Cavallo and so on.

The burner is equipped with a microelectronic control box, which can provide burner operating status and diagnosis of fault causes.
The improvement of the performance of the fan and the combustion head increases the scope of application of the burner and ensures the combustion efficiency of each operating point.
The unique design reduces the overall size, while providing ease of use and maintenance.
Feature of burner

- Automatically control
- Flame monitoring
- Automatic ignition system
- Autonomous filter

2)Water Treatment Device Technical Features

- Flow type metering, automatic recoil
- New cloth structure, uniform water distribution and stable water quality
- Resin tank made of glass fiber reinforced

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plastic, resistant to acid, alkali and salt, high strength and stable quality

- .Equipped with high quality resin and has a service life of more than 5 years
- .The whole set of equipment uses tap water to dispense water without pump boosting, saving energy.

Circulation water Pump Features

- Compact structure and space saving
- Stainless steel,acid and corrosion resistant
- Blue spray, elegant look
- China's well-known brands, well quality
- Dual configuration, mutual backup

Energy Saver Features

- ND steel material, acid and alkali resistant, durable
- Aluminum silicate insulation, high heat exchange efficiency
- Straight-through structure, less boiler back pressure

Constant pressure make-up water degassing device

This equipment is a device that integrates steam tank, constant pressure and water replenishment. It plays the role of stabilizing pressure, automatic water replenishment, expansion and automatic pressure relief in the system, and removing free gas and dissolved gas in the system. Keep the system in an efficient, environmentally friendly and energy-saving state of motion.

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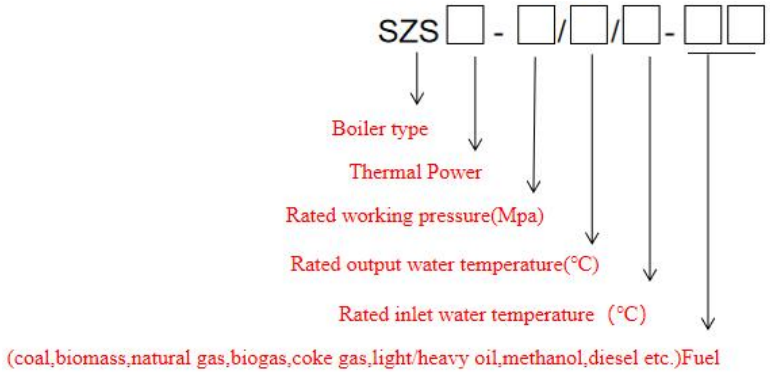
Parameter of SZS Series gas/oil Fired Pressurized Hot water Boiler

Example:SZS7-1.0/115/70-Q.Y=SZS series hot water boiler,thermal power 7MW,rated working pressure 1.0Mpa,rated output water temperature 115℃,rated inlet water temperature 70℃,Fuel oil or gas



Model	SZS7-1.0/115/70-Q.Y	SZS10.5-1.0/115/70-Q.Y	SZS14-1.25/115/70-Q.Y	SZS17.5-1.25/115/70-Q.Y	SZS21-1.25/130/70-Q.Y
Rated thermal power(MW)	7.0	10.5	14	17.5	21
Rated working pressure(bar)	10	10	12.5	12.5	12.5
Rated output water temperature(℃）	115	115	115	115	130
Rated inlet water temperature(℃）			70		
Main body Heating area(m2)	168	220	245.3	284.4	394.75
Condenser Heating area(m2)	164	306	527	645.1	738.3
Fuel available	natural gas,biogas,coke gas,light oil,methanol,diesel etc.				
Natural gas consumption(m^3)	720	1080	1440	1800	2160
Thermal efficiency(%)			>98		
Max Transportation Weight(t)	42.0	48.0	52.5	57.5	65

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Max boiler shipping size:L×W×H(m)	7.87×3.40×3.34	8.85×3.85×3.93	8.51×3.85×3.75	9.31×3.77×3.75	10.10×4.13×4.15
Model	**SZS29-1.25/130/70-Q.Y**	**SZS46-1.6/130/70-Q.Y**	**SZS58-1.6/130/70-Q.Y**	**SZS70-1.6/130/70-Q.Y**	**SZS116-1.6/130/70-Q.Y**
Rated thermal power(MW)	29	46	58	70	116
Rated working pressure(bar)	12.5	16	16	16	16
Rated output water temperature(℃)			130		
Rated inlet water temperature(℃)			70		
Main body Heating area(m2)	428.1	1065.9	1225.7	1408.4	6164.8
Condenser Heating area(m2)	990.8	1085.3	1292.5	1642.1	1830
Fuel available	natural gas,biogas,coke gas,light oil,methanol,diesel etc.				
Natural gas consumption(m^3)	2982	4680	5760	7200	11880
Thermal efficiency(%)			>98		
Max Transportation Weight(t)	72.5	Bulk 12.6	bulk 13.8	Bulk 16	Bulk 20
Max boiler shipping size:L×W×H(m)	10.90×4.13×4.15	11.00xφ1.45	11.10xφ1.46	12.00xφ1.66	12.50×φ1.66
Note: Parameter is for reference only, if any changes should follow the factory technical data.					

Delivery Documents about Equipment

1.Boiler room design drawing
2.Boiler foundation drawing
3.Boiler body drawing
4.Boiler control system technical data

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5.Boiler layout drawing
6.Valves& instruments drawing
7. Strength calculation data sheet
8. Certificate of Quality
9. Quality and Safety Inspection Certificates
10. Installation and operation instructions