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Steam Boiler Diagram

Steam boilers can be divided into coal fired steam boilers, biomass fired steam boilers, gas fired steam boilers, fuel fired steam boilers, and electric steam boilers according to fuel. The coal fired steam boiler structure and the biomass fired steam boiler structure are similar, the gas steam boiler and the oil fired steam boiler are similar.

CN Boiler has many years of experience in industrial steam boilers, whether it is boiler products or the operation of the entire system, we are very professional. The operation of the entire steam system is directly related to the quality of the product. Of course, the timely and accurate coordination of various auxiliary machines is also very important. The steam boiler system not only requires the high quality of the boiler body, but also requires the auxiliary equipment to be able to quickly and efficiently complete the instructions and help steam boiler to produce steam that meets the requirements. Let's talk about the working principle of the steam boiler.

★ Coal/Biomass Fired Steam Boiler

Coal/biomass fired steam boilers include DZL series, SZL series, and SHX

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series products. Among them, DZL generally has a small steam capacity below 10t/h steam produced, SZL series steam boiler most is a medium steam capacity between 20t/h to 40t/h, and SHX series steam boiler is large steam capacity, which is between 30t/h to 75t/h.

DZL Series

SZL Series

SHX Series

Coal/Biomass Fired Steam Boiler Working Principle

Coal/Biomass is burned on the boiler grate, and the chemical energy of the fuel is transformed into the heat energy of the high-temperature flue gas. Through heat transfer, the heat energy of the high-temperature flue gas is converted into the heat energy of the high-temperature steam. Taking DZL as an example, the flue gas flow is as follows

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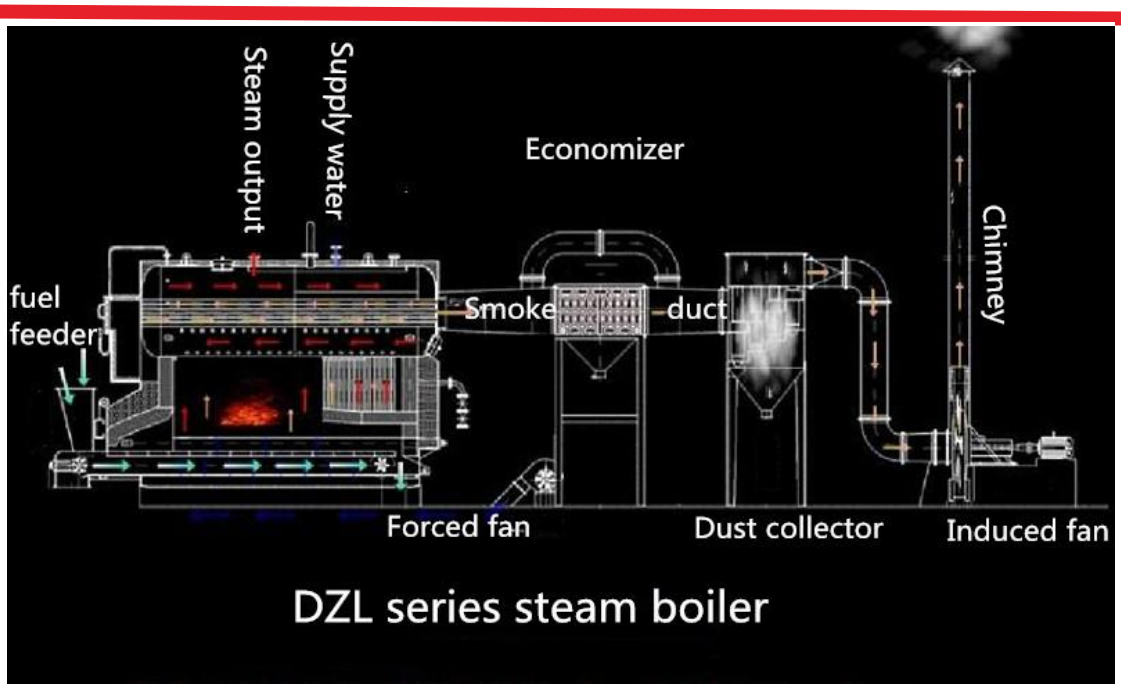

1) The first return trip --furnace

Boiler operation is automated, the fuel is transported to the chain grate through the grate reducer running, and burned on the chain grate,so the furnace forms the first process

2) The second return journey of the flue gas - two-wing flue duct

The high-temperature flue gas generated by combustion is transferred to the two-wing flue above the furnace through the rear smoke box, that is, the second return flue formed by the bottom of the water pipe and the furnace.

3) The third return journey of flue gas - fire tube

It enters the threaded smoke pipe through the front smoke box, and

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enters the chimney through the economizer and dust collector, and is discharged to the atmosphere.

Coal/Biomass Fired Steam Boiler Equipment

Furnace body: chain grate, furnace, air preheater, smoke duct, fuel feeder

Boiler body: economizer, steam drum, downpipe, header, water wall, superheater, preheater, etc.

Auxiliary machines generally include feed water pumps, soften water treatment device, fans, fuel handling equipment, steam header and dust removal equipment.

★ Gas/Oil Fired Steam Boiler

Gas/oil fired steam boilers include WNS series and SZS series products. The evaporation capacity of WNS steam boilers is below 20t/h, while that of SZS steam boilers is below 20-110t/h. SZS series steam boilers can produce saturated steam or produce superheated steam, customers can choose different products according to specific needs.

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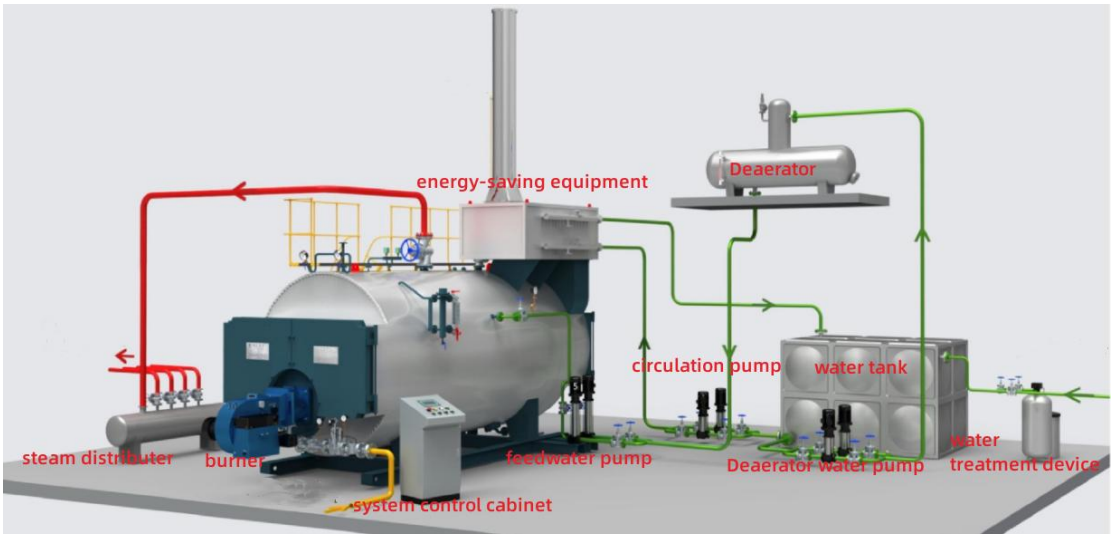
WNS Series

WNS Series

SZS Series

Gas/Oil Steam Boiler Working Principle

Taking WNS steam boiler as an example, the gas steam boiler working principle likes follow:



WNS Series of horizontal internal combustion steam boiler is a wet back shell type gas fired (oil fired) boiler with 3 passes. The steam boiler is fully automatic, the fuel after atomization by the burner forms the flame filling the whole waveform furnace and via furnace wall to transfer the radiant heat, this is the first pass. The high temperature smog yields from

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combustion is concentrated in reversal chamber and turns to the second pass, where is filled with thread smoke tube. After heat exchange by convection, the smog temperature gradually lowers,and then passes through economizer and condenser to chimney, and finally exhausts to the atmosphere.

Gas/Oil Steam Boiler Components

Furnace body: furnace, air preheater, smoke duct, burner

Boiler body: economizer, steam drum, preheater, etc.

Auxiliary machines generally include feed water pumps, soften water treatment device, fans, steam header,storage oil tank, daily oil tank.

★ Electric Steam Boiler

Working Principle

Electric steam boiler is a kind of thermal mechanical equipment that uses electricity as energy, converts electrical energy into heat energy, heats heat medium water to a certain parameter (temperature, pressure) through the heat exchange part of the boiler, and outputs rated steam to the outside. Product series include WDR/LDR.

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Operation Method

Turn on the power switch, and the water pump will automatically work to inject water into the furnace. After reaching the set water level, the water pump will stop automatically, and the heating indicator light will be on at the same time. After the work is finished, turn off the power, vent the remaining steam, drain the remaining water, keep the furnace clean and prolong the service life of the furnace.

If you also have any questions, you can consult us. We will answer you

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sincerely in time. Our service hotline is 86-371-56560102,or by Email contact us with heidyhan89@cnboilersolution.com

CN Boiler has 26 years of supply and after-sales experience in Steam boiler and boiler systems. In the selection of boiler accessories, we have rich experience. Choosing us will not only provide you with high-quality boilers, but also present you with a cost-effective steam boiler system, so that you will have no worries about the operation and maintenance of the boiler in the running stage.