

STIRLING[®] POWER BOILER

A reliable, flexible and adaptable boiler design for industrial applications



RENEWABLE | ENVIRONMENTAL | THERMAL

Since 1867, the Babcock & Wilcox (B&W) name has been synonymous with quality, dependability and service. Today, B&W continues to supply quality steam generation equipment to utilities and industry worldwide.



Proven Experience

The Stirling® boiler has provided dependable steam to industry for more than 100 years. Since 1960 B&W has sold more than 240 Stirling power boilers that are providing more than 75 million lb/h steam flow, burning a wide variety of fuels. Many more vintage Stirling boilers installed prior to 1960 are still in operation.

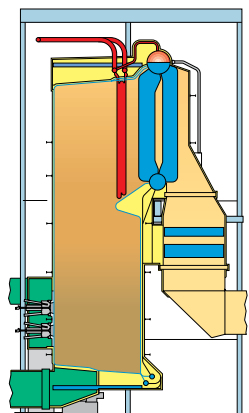
Major Industries Served

A proven and flexible design has made the Stirling power boiler adaptable for applications in a variety of industries, such as:

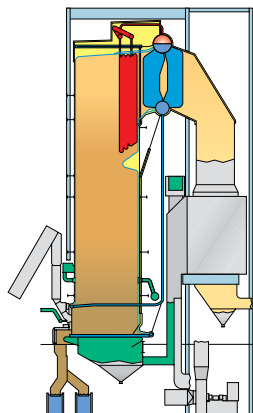
- ▶ Pulp and paper
- ▶ Iron, steel and other metals
- ▶ Chemicals
- ▶ Petroleum
- ▶ Food products
- ▶ Municipal solid waste
- ▶ Ethanol / sugar cane
- ▶ Power

The Stirling® Power Boiler

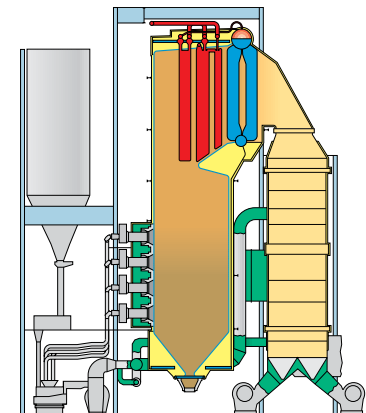
Proven



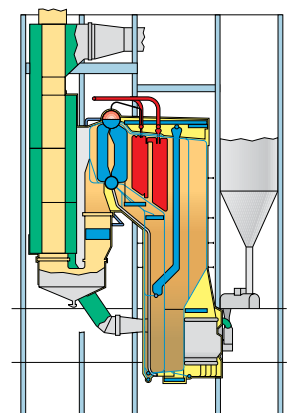
CO gas and oil



Refuse-derived fuel



Pulverized coal, coke oven gas and blast furnace gas



Cyclone™ furnace boiler for firing coal

Specifications to Fit Your Requirements

Capacity

Pulverized coal, oil, gas, CO, BFG, COG:
80,000 to 1,200,000 lb/h (10.1 to 151.2 kg/s)

Stoker coal:
60,000 to 400,000 lb/h (7.6 to 50.4 kg/s)

Stoker wood, bagasse, biomass:
80,000 to 900,000 lb/h (10.1 to 113.4 kg/s)

Bubbling fluidized bed (BFB) wood, bagasse, biomass:
80,000 to 1,000,000 lb/h (10.1 to 126.0 kg/s)

Circulating fluidized bed (CFB) coal, wood, biomass:
80,000 to 1,000,000 lb/h (10.1 to 126.0 kg/s)

Stoker refuse derived fuel (RDF), municipal solid waste (MSW):
80,000 to 360,000 lb/h (10.1 to 45.4 kg/s)

Steam pressure

To 2200 psig (15.2 MPa) design for a one-drum unit

To 1800 psig (12.4 MPa) design for a two-drum unit

Steam temperature

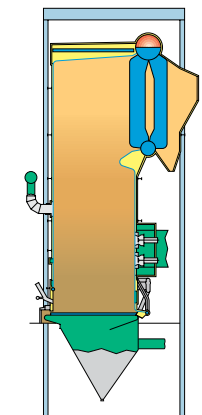
To 1000F (538C).

Fuels

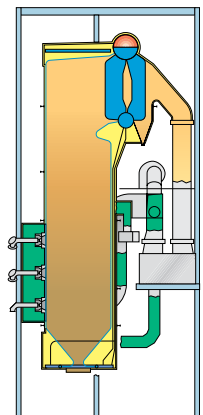
Solid, liquid or gaseous fuels such as pulverized and stoker coal, oil, natural gas, wood, bark, bagasse and other biomass, RDF, MSW, carbon monoxide (CO), blast furnace gas (BFG), coke oven gas (COG), and various other byproduct fuels.



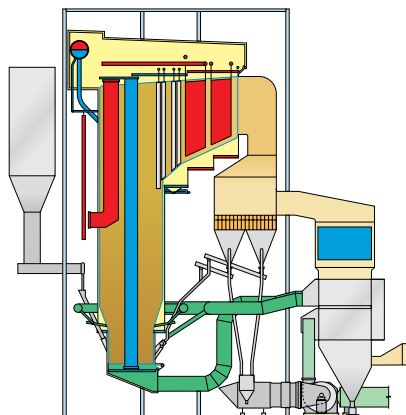
Adaptable



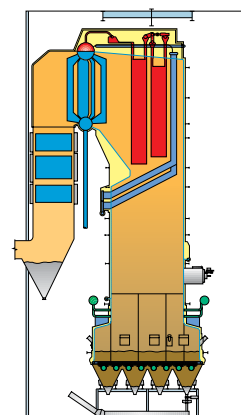
Oil, natural gas and biomass stoker-fired



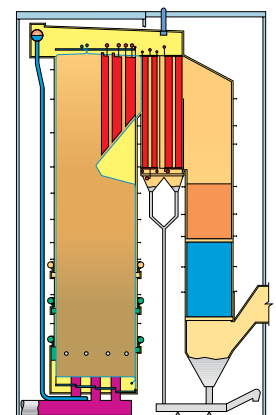
Pulverized coal, oil and natural gas



Circulating fluidized bed



Bubbling fluidized bed



CO gas

Quality Auxiliary Equipment

A dependable boiler design alone does not assure high availability for your steam generating system. Auxiliary components must be just as reliable. B&W has the experience and technical capabilities to provide the industry's most proven boiler auxiliary equipment, including pulverizers, burners and stokers.



Control of Plant Emissions

B&W can provide the necessary environmental equipment to meet your emissions requirements, including:

- ▶ Wet and dry electrostatic precipitators
- ▶ Wet and dry SO₂ and particulate scrubbers
- ▶ Dust collection equipment
- ▶ Low NO_x burners
- ▶ Selective catalytic and non-catalytic reduction systems

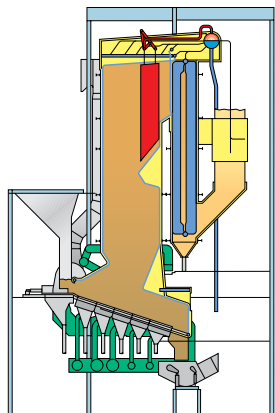
Total-scope Services

Construction and field operations are also available from B&W. Customers are served through a strategic network of field sales and service offices, agents, licensees and joint ventures located around the world.

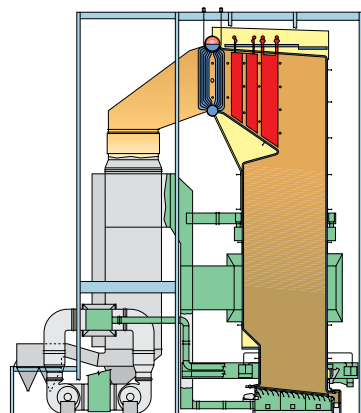
B&W's wide range of aftermarket product support services include:

- ▶ Project management
- ▶ Boiler construction, maintenance and repair
- ▶ Startup and commissioning
- ▶ Training programs
- ▶ Field service, inspection and diagnostic testing
- ▶ Engineered upgrades and supply of replacement parts for any make or type of boiler
- ▶ Balance of plant construction and repair

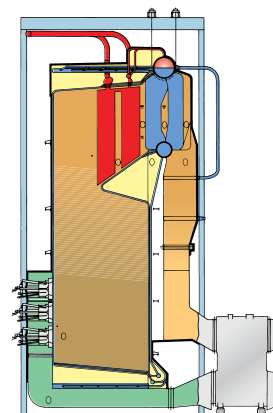
Reliable



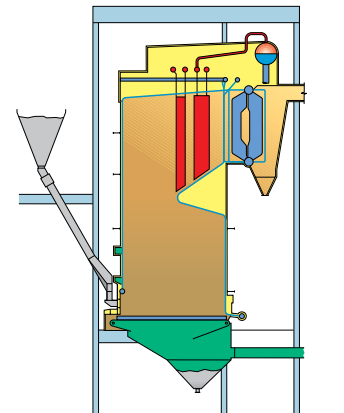
Municipal solid waste



Stoker-fired biomass
and pulverized coal



Natural gas and oil



Stoker coal



The design features of B&W's Stirling® power boiler provide a complete package of benefits not available from other boiler suppliers.

Stirling® Power Boiler Features	Benefits
Stirling power boilers are custom designed within a framework of pre-engineered components of incremental dimensions.	Pre-engineered components minimize engineering costs and delivery times, yet allow specific steam and fuel conditions to be met.
With one- or two-drum designs available, Stirling power boilers are versatile.	A wide range of steam capacities, pressures and temperatures is available to meet your specific application.
Various furnace configurations and combustion technologies can be utilized in the Stirling power boiler.	Flexible and adaptable designs are available to accommodate a wide range of specified fuels.
The steam drum of a Stirling power boiler is designed with superior internal components, including the proven cyclone separators.	The improved steam circulation provides the best steam quality for turbine (power generation) or process applications. The drum also minimizes water level swings to accommodate rapid and wide load changes.
The Stirling power boiler's furnace is 100% water-cooled with gas-tight membrane wall construction.	This design provides ease of maintenance (no furnace refractory), maximum safety and faster installation.
A spray attemperator is used for steam temperature control.	Spray attemperation allows the steam temperature and pressure to be maintained throughout a wider control range.
The Stirling power boiler uses B&W's proven auxiliary equipment, such as pulverizers and burners.	Equipment reliability means less downtime and maintenance costs and more efficient long-term operation.

Established in 1867, Babcock & Wilcox is a global leader in renewable, environmental and thermal technologies and services for power and industrial applications.

For more information or to contact us, visit our website at www.babcock.com.



RENEWABLE | ENVIRONMENTAL | THERMAL

Babcock & Wilcox

1200 E Market Street, Suite 650
Akron, Ohio, U.S.A. 44305
Phone: +1 330.753.4511

www.babcock.com    

The information contained herein is provided for general information purposes only and is not intended nor to be construed as a warranty, an offer, or any representation of contractual or other legal responsibility.

Stirling and *Cyclone* are trademarks of The Babcock & Wilcox Company.

© 2022 The Babcock & Wilcox Company. All rights reserved.

E101-3203 3K09F



The B&W Stirling® power boiler is a versatile and reliable steam generator with designs that can accommodate a wide range of fuels.