Circulating Fluidized-Bed Boiler
CFB

Design features

Top-supported design; uses normally difficult to burn fuels in a circulating bed of inert particles to control the combustion process and gaseous emissions such as NO_x and SO_2; a two-stage solids collection system is utilized consisting of U-beam particle separators where most of the solids are collected and internally recirculated to the furnace while the remaining solids are collected at and recycled from a multi-cyclone dust collector; an internal fluid-bed heat exchanger (IBHX) is utilized for load-following capability.

Capacity

To 2,200,000 lb/h (277 kg/s) or greater as required

Steam pressure

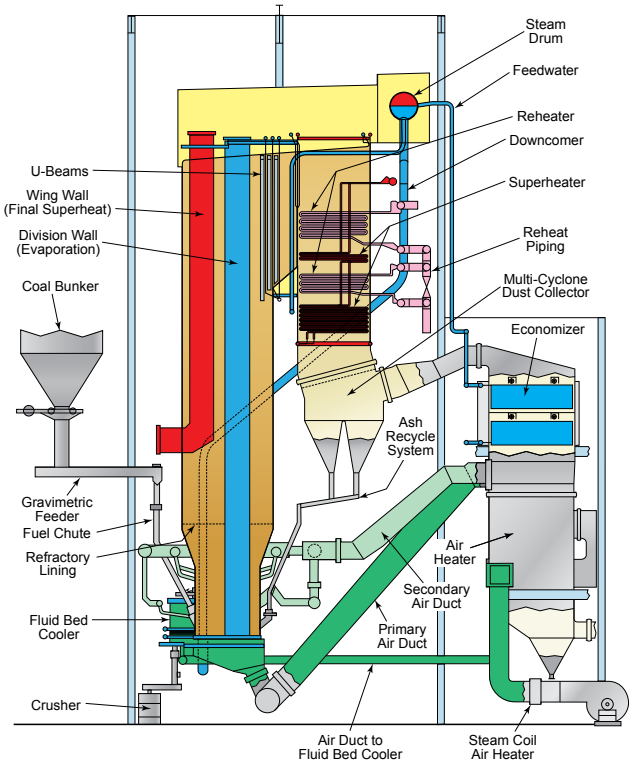
To 2600 psig (17.9 MPa)

Steam temperature

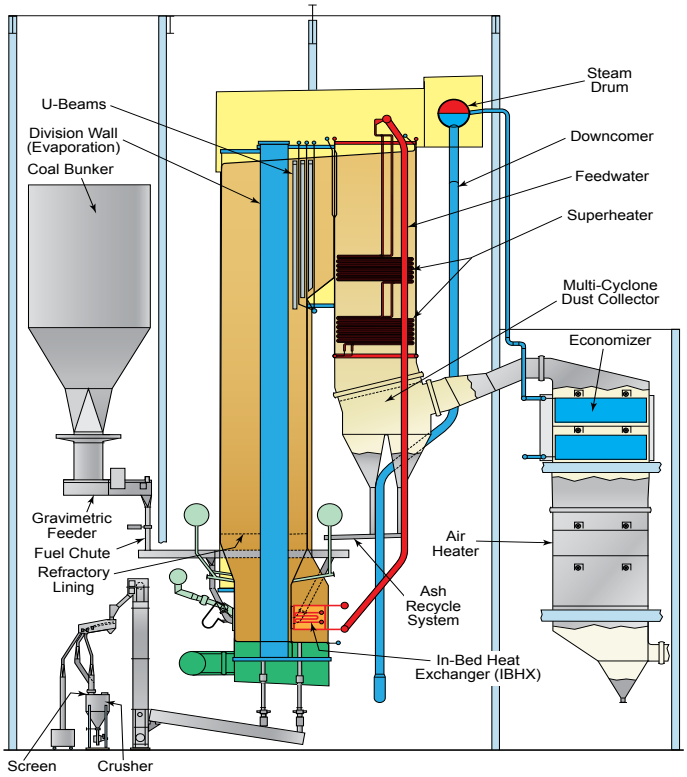
As required, usually to 1050F (566C)

Fuels

High sulfur and high ash fuels and various waste fuels (petroleum coke, waste coal, sludge and oil pitches), wood, biomass, gob, and culm



B&W IR-CFB Boiler



B&W IR-CFB Boiler with In-bed Heat Exchanger

Bubbling Fluidized-Bed Boiler
BFB

Design features

Top- or bottom-supported, one- or two-drum designs; proven attractive in new or retrofit applications and also provides an option to reduce SO_2 and NO_x emissions; open-bottom design for ease of large ash particle removal; burns wet wood-based fuels that other technologies can not combust [between approximately 2800 and 3500 Btu/lb HHV (6513 and 8141 kJ/kg) without support fuels]; reduces sludge volume while producing steam.

Capacity

Bottom-supported: Up to 225,000 lb/h (28.4 kg/s)

Top-supported: From 225,000 to 1,000,000 lb/h (28.4 to 126 kg/s)

Steam pressure

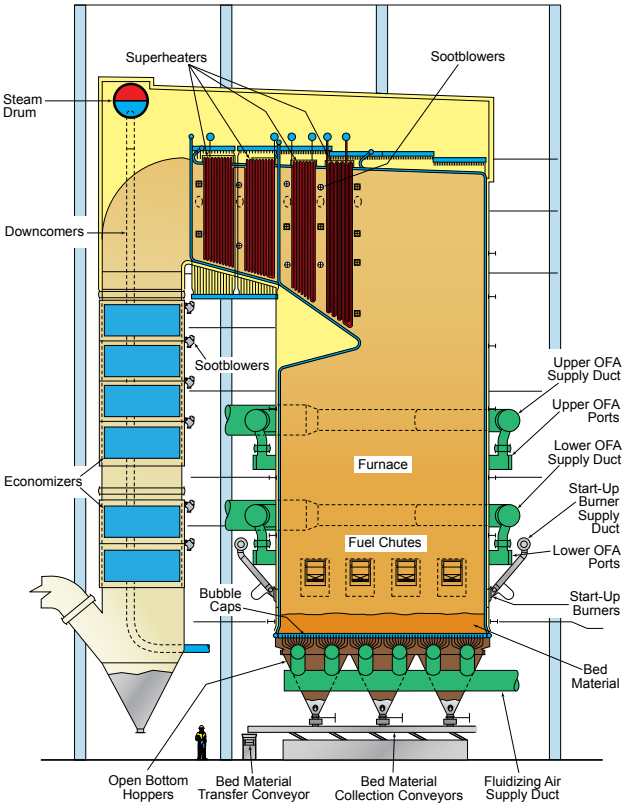
To 2600 psig (17.9 MPa)

Steam temperature

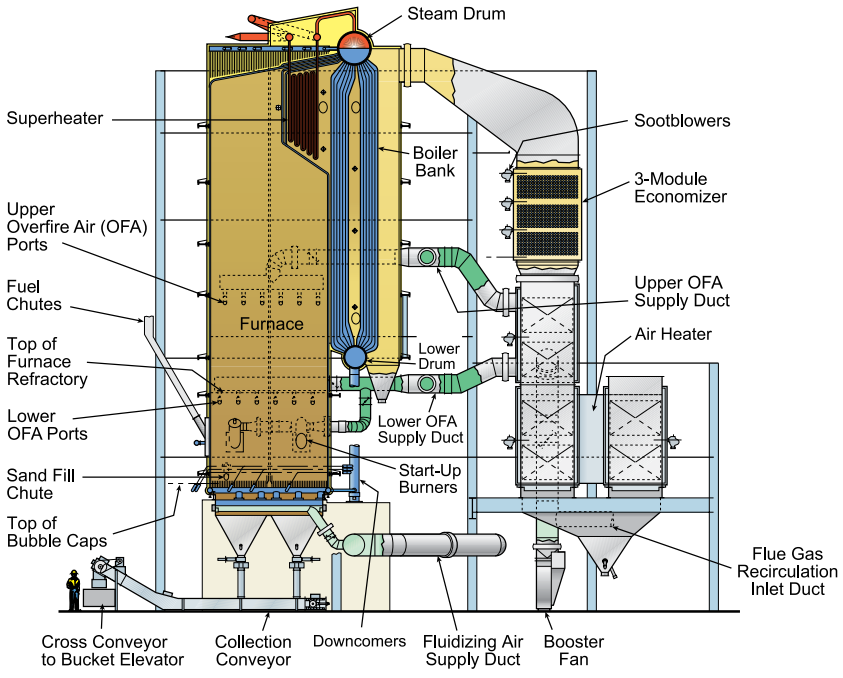
To 1000F (538C)

Fuels

Ideal for biomass and high moisture waste fuels such as sewage sludge, and the various sludges produced in pulp and paper mills and recycle paper plants, for both new boiler and retrofit projects; can burn wood wastes, bark, coal, tire derived fuel, oil, natural gas, and various coals



Top-Supported



Bottom-Supported