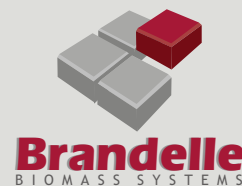


Biomass Solutions for an Eco-friendly Future

Specifications

Model	BX 200
S/N	0902-BX200-004
Rated Capacity	200,000 Btu/hr max
Power adjustability	60000-200000btu/hr
Efficiency	92.0%
Fuel rate at max. power	12.7kg/hr
Hopper duration at max. power	24 hrs.
Hopper volume	420 L
Hopper capacity	272 kg
Ash bin volume	20L
Height	1435 mm
Width*	1250mm
Depth	825mm
Total weight	635kg
Boiler water volume	95.7 liters
Outlet fittings	2 Inch NPT
Required chimney draught	15-30 Pa
Exhaust flue diameter	6 inch
Combustion gas temperature @ max. power	215 deg C
Combustion gas temperature @ ½ max. power	160 deg C
Combustion gas mass flow rate @ max. power	100 cfm
Electrical requirements	220V / 60 Hz / 15 Amps / 1 PH
Max. noise	54 dB
*excludes ash bin	



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The Company

Intrigued by the alternative energy industry, Brandelle Biomass Systems was established as a sister company to Brandelle Industries Ltd. in 2005. Serving automotive, aerospace, energy and agriculture sectors for several years, Brandelle Industries has gained significant experience in electrical, mechanical design, and manufacturing.

Brandelle Biomass Systems has invested extensive research into renewable energy solutions with favorable results. We quickly recognized the diverse variety of fuel types available and the challenges associated with them for clean, efficient combustion. Over the past several years we have developed a boiler capable of efficiently burning the fuels available today and the developing fuels of tomorrow. We're excited to be at the forefront of this emerging eco-friendly industry.

BX Series Boilers

Features

BX Series solid fuel boilers are fully automatic, providing the owner with a convenient and economical heating system packed with features. These boilers are designed to convert renewable biomass directly to heat energy with a carbon neutral footprint.

Multi-Fuel Capability

- Effectively burns fuel with ash content up to 10% ASTM D3174*.
- Pre-programmed fuel types with proven parameter settings to optimize combustion. Simply select your fuel on the touch screen

Fuel Programs: Wood Pellets, Switch Grass Pellets, Wheat Shorts/Oat Hulls, Corn, Wood Chips, Firewood, User1, User2

- User can modify and save parameters to any predefined fuel type OR build and save parameters for 2 of your own fuels
- Fuel Calibration Procedure. Due to the inconsistency in fuel geometry and weight, fuel calibration reduces any error in the boiler's ability to meter the correct quantity of fuel
- Hopper holds enough fuel to run 24 hours at max. capacity
- The BX Series boilers can accept 22" pieces of firewood



Automatic Ignition and Shut Down Sequences

- Electric element ignition
- Guaranteed ignition from a cold start in sub-zero temperatures
- Controller has the ability to re-ignite the boiler without the use of the electric element
- Smokeless start up and shutdown feature

Burn Chamber, Walking Grate, Automatic De-ashing

- Burn chamber walls and walking grate constructed from 304 stainless steel
- Processes fuel with moisture content up to 35% ASTM D3173*
- Walking grate design carries and agitates fuel from the back of the combustion chamber forward
- The grate cycle time is configurable through the touch screen control module
- Interlocking, heavy-duty firebrick promotes complete combustion and protects combustion chamber from the high temperatures, ensuring longevity
- Ash automatically augered to ash bin
- Driven by 3PH, 1/2HP motors with auto reversing incase of jam



Primary and Secondary Air

- Dual blowers gives independent control of primary and secondary air
- Primary air control reduces clinker formation and fly ash
- Positive pressure fuel delivery prevents burn back
- Downstream secondary nozzles in the burn chamber ensure complete oxidation of CO to Co2.



Efficient Heat Exchanger

- 95L boiler
- 42 fire-tubes arranged as multi pass heat exchanger
- Features a counter current flow for maximum heat transfer
- Extensive water jacket includes burn chamber door

Advanced Heat Exchanger Automatic Cleaning

- Cleaning performed automatically with a frequency proportional to the power output
- Upright tubular heat exchanger has built-in turbulator that provide increased thermal efficiency
- Vertical tube design does not allow any debris, which may accumulate over time, to settle in the tubes

Rugged Construction with Commercial Industry Grade Components

- Fabricated from metal plate
- All components are precision laser cut, formed and welded
- Combustion chamber is lined with firebrick, it is made with stainless steel to prevent long-term oxidation
- Design provides easy access so servicing requires very little physical effort
- All mechanical components are standard off-the-shelf items



Electrical Controls

Advanced Microprocessor Controls (AMC) for Optimum Combustion Efficiencies

- AMC monitors three separate loops to continually assess the actual load, alter the fuel quantity and adjust the combustion's air supply
- AMC provides fully modulating power settings from 30%-100% of capacity
- Lambda O2 regulation optimizes combustion efficiencies and minimize emissions
- 2 temperature resets (outdoor temp and domestic temp) predict heat loads and adjust boiler set points accordingly minimizing oscillation during load changes

5.1" Touch Screen Display with User Configurable Parameters

- Menu guided settings provide quick and easy setup over all the configurable parameters
- Status of components such as pumps, motors and blowers is displayed
- Controller's real time clock allows tracking of alarms, error codes and service intervals
- Users have the ability to customize the heating system as required

Remote Computer Access with Real Time Data

- AMC has a built in RS-232 communications port and a 56 kbs modem
- Users have access to all data, settings, parameters and error codes in real time
- Modem allows for alarm dialing to an emergency phone number set by the user
- Modem allows Brandelle Biomass Systems to diagnose problems or upload new software revisions, if required



Commercial Industry Grade Components

- All electrical components, with the exception of the microprocessor board, are standard off-the-shelf items

Remote Hopper

The Boiler's hopper holds between 24 hours and 4.5 days worth of fuel during continuous run time. These durations are further extended if the boiler goes to shut down due to periodic low heat load requirements.

In remote situations where frequent refilling of the hopper is inconvenient or not possible, a large remote hopper can be added to the system. The fuel is transferred, via plastic tubing, from the larger hopper to the boiler's small hopper by means of a vacuum system (pellet and grain fuels only). The user has three options in configuring the vacuum transfer. It can be set to go on instantaneous with hopper low level being sensed, it can be set with a time delay of low level being sensed, or transfer can be set to a daily time. A transfer distance of up to 50 feet, including an elevation change, is possible.

Secure and Safe for In Home Installation

- Complies with CSA and ASME boiler code for operation in Canada and the US**
- CSA and UL electrical certification
- Complies with CAN/CSA-B366.1-M91 Solid-Fuel-Fired Central Heating Appliances
- Capable of being installed indoors
- Fuel is non-volatile in nature and is non-explosive when stored in closed containers
- BX series safety features include; Burn back flap, Positive pressure fuel entry, Temperature activated fire suppressant, Burn chamber door and Hopper hood monitoring, Exhaust Pressure Switch, Alarm Auto Dialer, and High limit safety thermostat guarantees the highest possible degree of safety.

*with varying efficiency **approvals pending

wood pellets



shelled corn



woodchips



oat hulls / wheat shorts



switch grass



fire wood

