



083017-01

#### Specifications, Dimensions, & Ratings

	Ratings							"D"	SUPPLY/		AIR	CONDENSATE		APPROX.
MODEL	MIN INPUT (MBH)	MAX INPUT (MBH)	GROSS OUTPUT (MBH)	THERM EFF. %	"A" HEIGHT (IN.)	"B" WIDTH (IN.)	"C" LENGTH (IN.)	CONN. HEIGHT (IN.)	RETURN CONN. (IN.)	VENT DIA. (IN.)	INTAKE DIA. (IN.)	& BOILER DRAIN CONN. (IN.)	GAS CONN. (IN.)	SHIPPING WEIGHT (LBS)
FF-1000	200	1000	950	95.0	64	29	72	6	3 Victaulic	6	6	1	1	1185
FF-1500	300	1500	1425	95.0	75	35	80	3	3 Flange	8	8	1	2	2020
FF-2000	400	2000	1900	95.0	75	35	80	3	3 Flange	8	8	1	2	2020
FF-2500	500	2500	2375	95.0	75	35	93	3	3 Flange	10	10	1	2	2500
FF-3000	600	3000	2850	95.0	75	35	93	3	3 Flange	10	10	1	2	2500

#### PRESSURE VESSEL DESIGN

ASME certified stainless steel heat exchanger ASME Section IV-certified, "H" Stamp MAWP 160 PSIG & max temp 210°F Ten Year limited heat exchanger warranty Lifetime thermal shock warranty

COMBUSTION DESIGN Stainless steel mesh pre-mix burner Low NOx emissions Full modulation, 5:1 turndown Natural gas (consult factory on LP gas) 4" wc to 14" wc inlet gas pressure Direct spark ignition system/UV scanner High & Low Gas Pressure Switches, Manual Reset Variable speed combustion blower Air proving switch

#### **BOILER EQUIPMENT**

Concert Boiler Control™(24 Vac) High limit w/ manual reset safety temperature control Low water cutoff, manual reset Water flow switch

Supply & return water temperature sensors Flue gas temperature sensor

Air vent valve Condensate trap

Blocked condensate switch Blocked vent air switch Pressure & temperature gauge

ASME safety relief valve 50 psig (optional 30,60,75,100,125, or 150 psig)

#### VENTING

Air Intake - Ducted or Room Air

 $Category\,IV\,Individual\,Venting\,with\,Engineered\,Vent\,System$ Category II Common Venting with Engineered Vent System

#### **ELECTRICAL DESIGN**

120 VAC / 60 Hertz / 1 phase power supply (FF-1000) 208-240 VAC / 60 Hertz / 1 phase power supply (FF-1500 to 3000) 208-240-460 VAC / 60 Hertz / 1 phase or 3 phase power supply (FF-2000 to 3000)

24 VAC low voltage control power supply

Condensate neutralizer Header sensor, direct immersion Header sensor, well immersion (with well) Outdoor air reset sensor Knockdown configuration Reverse construction Communication gateway

BMS signal converter kit



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# **FREE FLEX** Free to Move

- 1 3M MBH
- Fully Field Repairable
- Lifetime Thermal **Shock Warranty**
- Variable-Primary or **Primary/Secondary**







## Bryan Built: Core Values Pacify Marketplace VOID of Longevity and Character

How long will your condensing boiler last? If using a Free Flex from Bryan, the answer is: a LIFETIME. With over a century designing and manufacturing boilers, our cornerstones of profound LONGEVITY, consistent RELIABILITY, and unique SERVICEABILITY are welcomed into a deprived condensing landscape. This space is littered with "me too" replicas exhibiting endless welds and unrepairable or stationary tube sheets at odds with burner temperature swings. Our heat exchanger sets us apart. Only Bryan's time-tested seal provides a lifetime guarantee against thermal shock where no other competitive welded product dare go beyond 10 years. Our design also grants unequalled access for service and cleaning of the heat exchanger. This allows for an industry 1st field replacement of tubes, an optional knockdown configuration to go where no other condensing boiler can fit and space-saving reverse construction for side-by-side installation.

#### **Uncommon & Serviceability Access**

Maintenance accessibility is as critical part of the overall boiler design, and the Free Flex does not disappoint. Front, left-hand side, the jacket and flue collector doors are easily removed for full access to service and clean the heat exchanger and burner/blower/gas train assembly. Liberal heating surface throughout the pressure vessel evenly distributes heat transfer promoting longer product lifecycle. Tubes can be removed or replaced with simple hand tools in minutes. Commercial-grade controls used in the construction of the boiler can be purchased locally for fast repair.

#### Variable Primary or Primary/Secondary Piping

Not only are our tubes flexible, but so are the different ways to pipe Free-Flex. With low water pressure drops, the Free-Flex is able to operate in low flow designs, Variable-Primary, and traditional primary/secondary designs.

#### **Knockdown Capability**

Knockdown and condensing were never mentioned before in the same sentence...until now! The Free Flex is available in various knockdown configurations best suited to gain access into a building that other packaged boilers will not. Individual components will easily fit through a standard door opening and can be reassembled without requiring the services of an ASME welder. Depending on the needs, the Free Flex can be partially assembled or completely disassembled.

#### **Reverse Construction**

Reverse (mirror) construction is available when two boilers are needed for side-by-side installation. This allows full access to the heat exchanger, burner/blower/gas train assembly on the right-hand side instead of the standard left-hand side, keeping the footprint as small as possible in tight mechanical rooms.

#### **Competitive Footprint**

The Free Flex offers a competitive **installed** footprint. Connections are located at the top of the unit freeing the sides of cluttered piping that often get in the way of servicing the boiler. The jacket encompasses the flue outlet assembly that permits minimum clearances to the rear where other models must accomodate for venting in floor print.

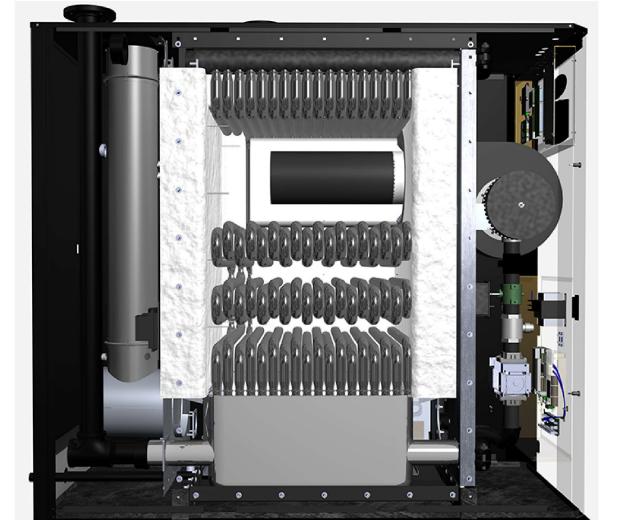
### **Venting Category II and IV**

Common venting with engineered vent systems.

## J HEAT EXCHANGER - FREE TO MOVE! 📞

At the heart of every Bryan Boiler design beats our exclusive flexible watertube. Objects expand and contract when exposed to temperature differentials and boilers are no exception. With combustion temperatures approaching 2000°F and drastically cooling during off cycles, only Bryan accounts for this natural thermal expansion by design. Competitive models unwisely rely on welds to hold back this movement

stressing material and seals. Our inclined flex tubes also provide natural internal circulation, mixing of hot water, and lower velocity through the tubes to optimize heat transfer and separation of solids.



#### **Lifetime Thermal Shock Guarantee**

A swedged mechanical fit, free of welds, seals the tube to header allowing for simple and quick tube replacement should repairs ever be required. Not only is Free Flex the only repairable condensing boiler on the market, it is also backed by Bryan's Thermal Shock Lifetime Seal Guarantee. Only Bryan can provide this assurance because we know our seal has worked for a century.





#### **State-Of-The-Art Control System**

Whether it be stand-alone, sequencing multiple boilers and/or communicating with a building management system, the Concert<sup>TM</sup> Boiler Control "checks all the boxes" for today's needed control features and functions:

- Large 7" color touch screen display
- 5:1 Turndown (high turndown option)
- Two (2) temperature demand inputs
- Three (3) pump control
- Up to 8 unit boiler sequencing
- BMS interface
- 4-20mA standard / 0-10v optional
- Modbus standard
- BacNET, Lonworks & other optional protocols
- USB data sharing port
- Energy efficiency enrichment technology
- **Built-in diagnostics**
- Huge archive database
- Time/date stamp on alarms and lockouts
- Domestic water priority
- · Factory default settings
- Three level password security
- Frost protection
- Boiler sensor monitoring and control
- Low water flow safety control and indication
- Proportion integral derivative (PID) parameters
- Brown-out protection