

PREMIER COMMERCIAL BOILERS



MODEL CFV
 **CLEARFIRE**

VERTICAL STEAM BOILER 10-60 HP
Full Modulation · High efficiency · Low Emissions · Touch Screen Control

CLEARFIRE-V The New Standard in Commercial High-Efficiency Firetube Boilers

CLEARFIRE-V

Features and Benefits

The Cleaver-Brooks compact gas-fired Clearfire-V vertical boiler is designed specifically for the requirements of the commercial market and is available in sizes ranging from 10 to 60 boiler horsepower, while delivering 150 psig steam pressure.

- Vertical design for small footprint
- High efficiencies up to 85%, reduces greenhouse gas emissions
- Maximize fuel savings with full burner modulation and high-turndown via Variable Speed Blower
- Easily-tuned, zero-governor, premix burner
- More reliable operation with no dampers or linkages
- Advanced combustion design eliminates need for flue gas recirculation and provides low emissions (< 20 ppm NOx and < 10 ppm CO)
- ModBus (RS 485) communications
- Direct spark ignition
- Low gas supply pressure < 14" W.C.
- Ultra quiet operation < 70 DBA
- Single phase power -115V --- minimal electrical energy consumption
- UL Listed (Natural Gas)
- Controls are CSD-1 Compliant

CLEARFIRE-V Options

- Sealed combustion for reduced make-up air requirement thus reducing energy costs
- Surface Blow-Off Controls
- Chemical Feed Tank
- Integral Feedwater System
- High Pressure Regulator
- Blowdown & Feedwater Valve Assemblies
- Reuseable Air Filter
- Feedwater Economizer

Advanced Burner Technology

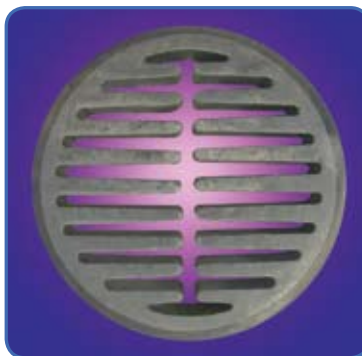
The Clearfire-V's high efficiency is achieved by employing an advanced Fecralloy burner designed to premix air and fuel for optimal combustion and low emissions. A variable speed blower motor provides extended burner turndown capability.



Durable Fecralloy Burner

Patented Heat Transfer Technology

The internationally patented AluFer® firetube is the latest Cleaver-Brooks innovation in advanced heat transfer technology.



Patented AluFer Tubes®

The Clearfire-V utilizes AluFer® firetubes to achieve unmatched heat transfer rates and superior fuel-to-steam efficiency of up to 85% depending upon operating pressure, all in a compact design.

The tube is constructed from an inner aluminum alloy finned surface, die fitted within an outer carbon steel tube providing exceptional heat exchange characteristics that are attributed to the following factors:

- Thermal conductivity of the AluFer® insert is significantly greater than that of carbon steel.
- Internal finned surface of the AluFer® tube enlarges the heat exchange surface area threefold.
- Inner surface of the tube is divided into ten flow channels to create maximum turbulence and heat transfer.

C-B Falcon Control

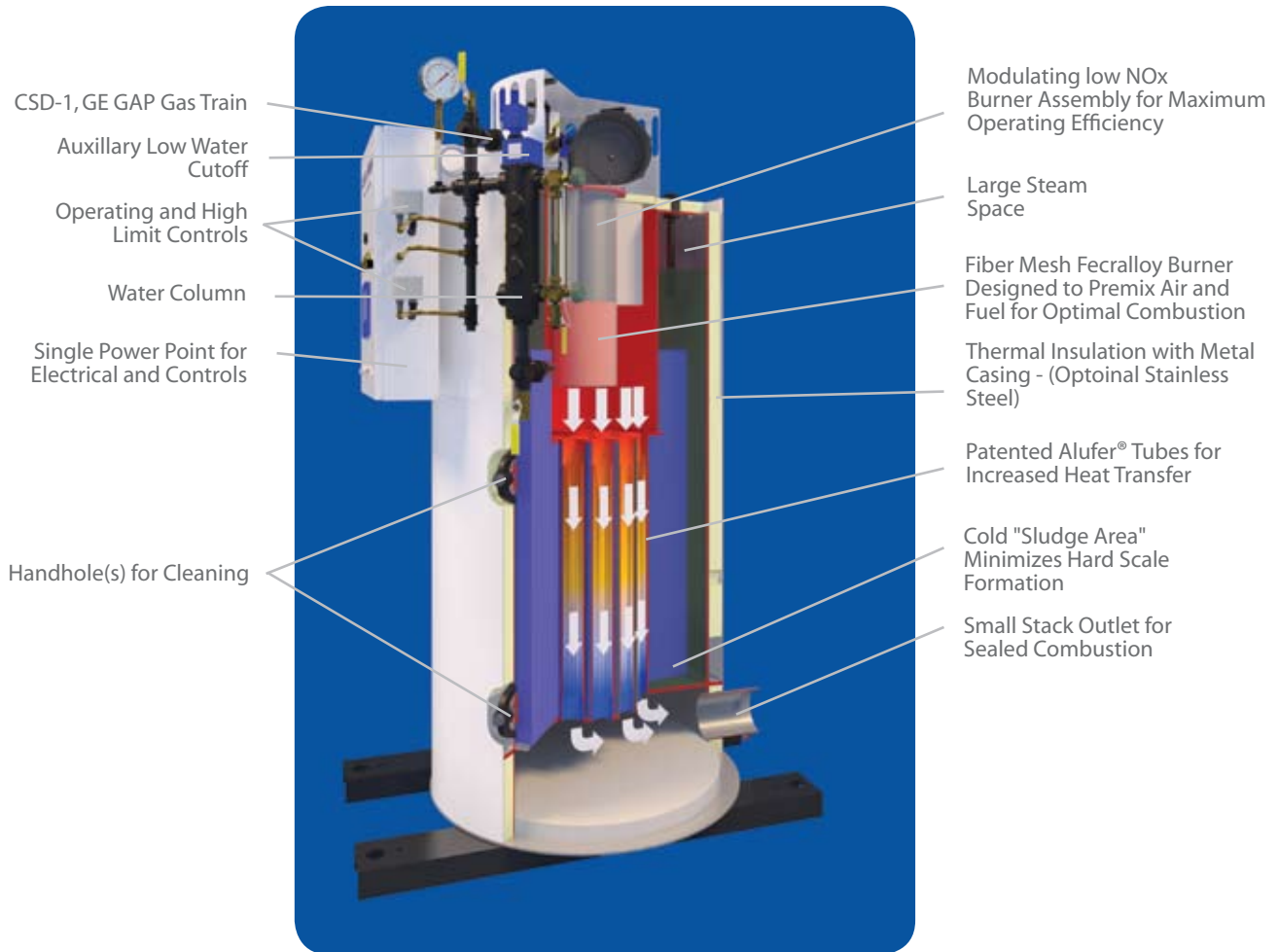
The C-B Falcon is a total boiler control that provides our customers with the integrated functionality needed to efficiently and economically operate their boiler system, while providing necessary safety and reliability.

- A single source solution for total Boiler control
- Touch screen graphics with trending
- Integrated Burner sequencing, alarming and lockout
- Date/time stamping of lockouts and alerts
- First out expanded annunciation, firing rate limiting, time of day (setback) and PID loops.
- ModBus (RS485) Communications
- UL Recognized



User-friendly Touch Screen Graphics

The Clearfire- V Advantage



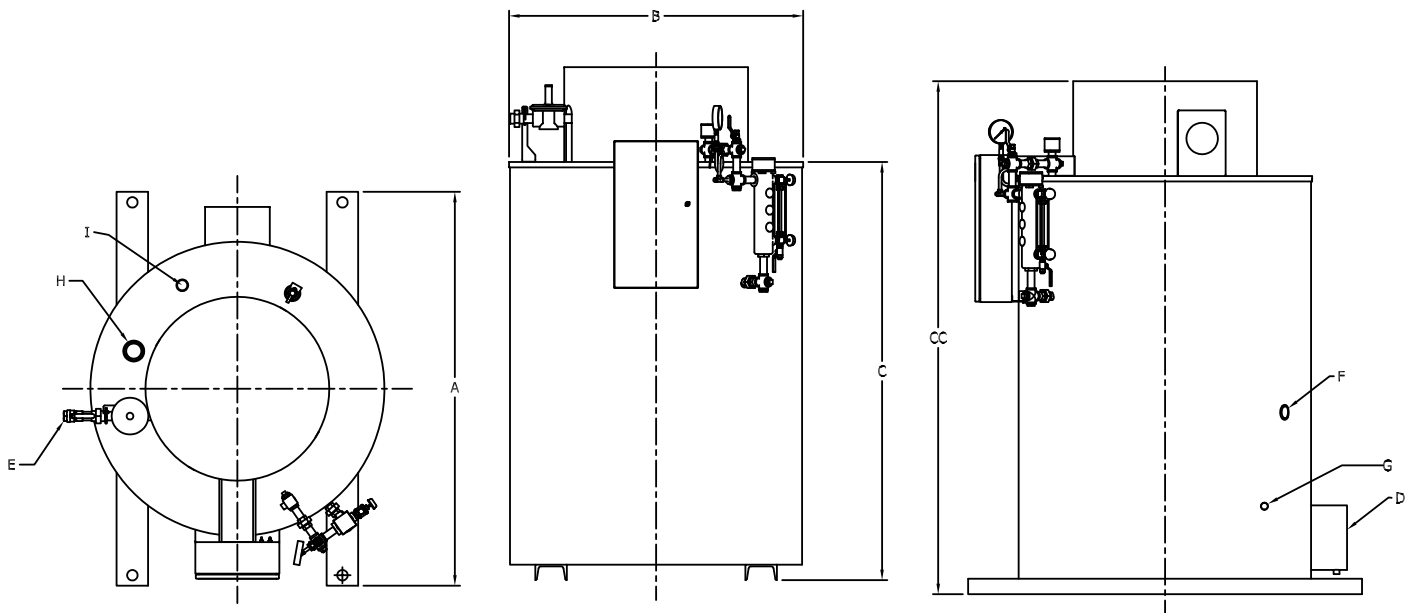
Single Source Skid Package Solutions

Looking for a turn-key steam solution? Cleaver-Brooks offers standard and complete steam boiler system skid mounted packages in gas and propane fuels. The package includes the steam boiler, feed system and blowdown separator with optional chemical feed system and water softener. This complete package saves you time installing the system as all is required is power, gas, steam and water connections.

- *Single Source Responsibility*
- *Plug and Play, minimizes installation*
- *Standard Skid Solutions to meet your needs*



MODEL CFV
CLEARFIRE



Clearfire-V Boiler Dimensions and Ratings

Boiler Horsepower	10	15	20	25	30	40	50	60
Dimensions - INCHES								
Overall Length (A)	50	50	55	55	68	68	75	75
Overall Width (B)	32	32	39	39	47	47	56	56
Clearance Height (C)	73	77	73	79	72	78	81	87
Overall Height with Trim (CC)	84	90	84	90	86.5	92.5	99	105
Connections - INCHES								
Stack Nominal OD (D)	6	6	6	6	8	8	10	10
Gas Connection (E)	1	1	1	1	1 1/4	1 1/4	1 1/2	1 1/2
Feed Water (F)	1	1	1	1	1	1	1 1/4	1 1/4
Bottom Blowdown (G)	1	1	1	1	1	1	1 1/4	1 1/4
Steam Outlet (H)	1 1/2	1 1/2	1 1/2	1 1/2	2	2	3	3
Surface Blowoff (I)	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Steam Boiler Weights in LBS								
Normal Water Weight - 150#	710	815	1,195	1,365	1,795	2,050	2,715	3,090
Approx. Shipping Weight	2,000	2,120	2,540	2,780	3,690	4,030	5,280	5,740
Power Requirements (115VAC, 60 Hz, single phase)								
Blower Motor Size (Watts)**	335	335	335	335	335	750	1,200	1,200
Ratings								
Rated Capacity—Steam (lbs-steam/hr from 212°F)	345	518	690	863	1,035	1,380	1,725	2,070
Output (1,000 Btu/hr)	335	502	669	837	1,004	1,339	1,674	2,008
Fuel Input - 15# Steam*	413	620	826	1,033	1,240	1,653	2,066	2,479
Fireside Heating Surface (sq.ft.)	84	103	128	159	208	258	312	388
Turndown/Modulating Firing Rate	4:1	4:1	4:1	4:1	5:1	5:1	5:1	5:1

Notes:

* Input calculated at nominal 81% efficiency for 1,000 Btu/cf gas content.

** For altitudes above 1500 ft., contact local Cleaver-Brooks authorized representative for verification of boiler and blower motor size.



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