

CREST[®]
CONDENSING BOILER

**HIGH EFFICIENCY OUTDOOR
CERTIFIED COMMERCIAL BOILERS**

12 MODELS FROM 750,000 TO
6.0 MILLION BTU/HR

UP TO 96% THERMAL EFFICIENCY

UP TO 25:1 TURNDOWN RATIO



NOW AVAILABLE WITH
REALTIME O₂ FEEDBACK[™]

RIDE THE LOCHINVAR WAVE[™]

Registered under U.S. Patent #9,746,176

DESIGNED ★ ENGINEERED ★ ASSEMBLED

USA



THE CREST COMBUSTION SYSTEM

CREST boilers are equipped with a top-mounted micro-metal fiber burner, engineered specifically for fire-tube technology. The system is designed to ensure smooth, quiet modulating combustion with up to 25:1 turndown. A FBN-2001 fires at its maximum 1,999,999 Btu/hr rate when the heat load is highest, and then gradually turns down to as low as 4% (80,000 Btu/hr) as load decreases. A modulating system runs smoothly and efficiently, without frequent on/off cycling. When the system is zoned, CREST's high turndown works to match the actual system demand. In return, CREST reduces the customer's fuel bill and provides better comfort by load-matching the heat loss of the system.

REDUCE INSTALLATION COST WITH VARIABLE FLOW TECHNOLOGY

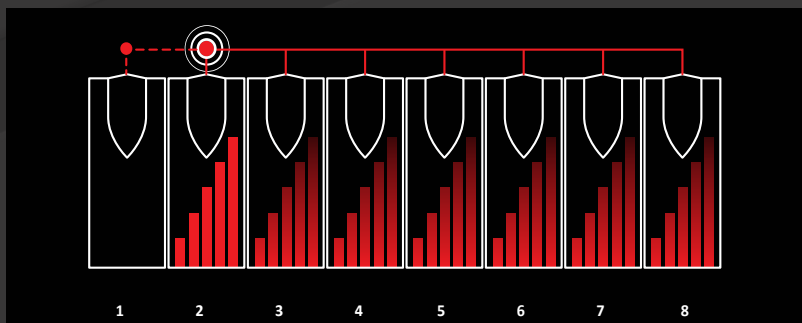
CREST can operate over a wide range of flow rates with very low pressure drop. This permits installation of a full flow (variable primary) system. Installation is streamlined, without the time and materials cost of primary/secondary piping, and pumps needed to maintain flow in a water-tube boiler. Variable flow also makes CREST more flexible at handling frequent fluctuations in the system flow rate.

HIGH EFFICIENCY WITH MINIMUM SUPPLY PRESSURE

CREST operates reliably with supply gas pressure as low as 4 inches water column. Negative Regulation technology draws gas into a pre-mix combustion system, instead of relying on utility pressure through the gas valve. Operation is steady in low gas pressure systems or when peak gas supply demand occurs. Plus, Neg/Reg fan control fine-tunes the fuel/air ratio entering the burner, providing an even, cleaner-burning flame, achieving high combustion efficiency.

PEACE OF MIND, WHEN IT MATTERS MOST

Cascade redundancy provides peace of mind because it helps ensure that a CREST boiler system will always deliver reliable performance with no downtime. If the lead boiler is turned off for maintenance, cascade redundancy automatically shifts the lead role to the second sequenced boiler. Up to eight CREST boilers can be sequenced using a 2-wire daisy-chain connection. Cascade sequencing can be programmed for lead-lag or efficiency optimized operation.



With lead-lag operation, one lead boiler modulates to capacity on demand. As load increases, the system then cascades to additional lag boilers in sequence. The first-on role shifts daily, distributing equal runtimes to each unit.

In an efficiency optimized system (see illustration above), all boilers fire and modulate simultaneously at the same Btu/hr input rates, maximizing thermal efficiency.



CREST features the next generation of Lochinvar's all-in-one SMART TOUCH™ operating control with the integration of the CON-X-US advanced technology. SMART TOUCH with CON-X-US provides outstanding functionality, and can



be integrated directly into a Building Automation System via Modbus and BACnet MSTP as standard equipment.

A 8" touch screen along with an updated user interface allows users to quickly see what their unit is doing. On screen graphs can help diagnose issues in the field. A new screen saver mode identifies the status of the boiler. Dark green indicates running mode, olive green is blocking mode and red is lockout mode. This is another way Lochinvar is leading the charge with boiler controls.



SMART TOUCH FUNCTIONS AND FEATURES

Smart Touch™ Features

CON-X-US Remote Connect

SMART TOUCH Touchscreen Operating Control Full-Color 8" Touchscreen LCD Display

Built-in Cascading Sequencer for up to 8 Boilers

- › Built-in Redundancy
- › Cascade Multiple Sized Boilers
- › Lead/Lag Cascade
- › Efficiency Optimized Cascade

Front-End Loading Capability with Copper-Fin II® and Power-Fin® Boilers

Building Management System Integration with 0-10 VDC Input

BACnet MSTP Communications

Outdoor Reset Control with Outdoor Air Sensor Password Security

Domestic Hot Water Prioritization

- › DHW tank piped with priority in the boiler loop
- › DHW tank piped as a zone in the system with the pumps controlled by the Smart System
- › DHW Modulation Limiting
- › Separately Adjustable SH/DHW Switching Times

Low Water Flow Safety Control & Indication

Inlet & Outlet Temperature Readout

Freeze Protection

Service Reminder

Time Clock

Data Logging

- › Hours Running, Space Heating
- › Hours Running, Domestic Hot Water
- › Hours Running, Modulation Rate
- › Ignition Attempts
- › Last 10 Lockouts

Programmable System Efficiency Optimizers

- › Night Setback
- › Anti-Cycling
- › Outdoor Air Reset Curve
- › Ramp Delay
- › Boost Temperature & Time
- › Modulation Factor Control

Three Pump Control

- › System Pump
- › Boiler Pump
- › Domestic Hot Water Pump

High-Voltage Terminal Strip

- › 120V/1PH/60Hz (OF 0751-2001)
- › 208V/3PH/60Hz (OF 2501-3501)
- › 480V/3PH/60Hz (OF 4001-6001)
- › System Pump, Boiler Pump and DHW Pump Power

Low-Voltage Terminal Strip

- › 24 VAC Auxiliary Device Relay
- › Auxiliary Proving Switch Contacts
- › Alarm on Any Failure Contacts
- › Runtime Contacts
- › DHW Thermostat Contacts
- › Unit Enable/Disable Contacts
- › System Sensor Contacts
- › DHW Tank Sensor Contacts
- › Outdoor Air Sensor Contacts
- › Cascade Contacts
- › 0-10 VDC BMS External Control Contact
- › 0-10 VDC Variable Speed Boiler Pump Control Contact

Optional Equipment

Alarm Bell
Outdoor Hood Kit
BMS Gateway - BACnet IP or LonWorks
Wireless Outdoor Temperature Sensor
Condensate Neutralization Kit
Common Vent Damper Kits
Motorized Isolation Valve (NEMA 4)
Electrical Transformer Options (Shipped Loose):

OF 0751-2001

- › 208V/3PH/60Hz → 120V/1PH/60Hz
- › 480V/3PH/60Hz → 120V/1PH/60Hz
- › 600V/3PH/60Hz → 120V/1PH/60Hz

OF 2501-3501

- › 480V/3PH/60Hz → 208V/3PH/60Hz
- › 600V/3PH/60Hz → 208V/3PH/60Hz

OF 4001-6001

- › 208V/3PH/60Hz → 480V/3PH/60Hz
- › 600V/3PH/60Hz → 480V/3PH/60Hz

RealTime O₂ Feedback

Modbus Communication

Short Circuit Current Rating Options:

OF 2501 - 6001

- › 100,000 A
- › 200,000 A

Codes & Registrations

ANSI Z21.13/CSA Certified
ASME Certified, "H" Stamp / National Board
California Code Compliant
CSD1 / Factory Mutual / GE Gap Compliant
South Coast Air Quality Management District
Qualified 0751-2001
AHRI Certified

Standard Features

Proof of Closure Valve (6001)
Modulating Burner with up to 25:1 Turndown
Direct-Spark Ignition
Low NOx Operation
Sealed Combustion
Air Inlet Filter
Low Gas Pressure Operation
Vertical and Horizontal Direct Venting
› Direct Vent up to 100 Feet
› PVC, CPVC, Polypropylene or AL29-4C (0751-6001)
› AL29-4C (751-6001)
ASME "H" Stamped Heat Exchanger
316L Stainless Steel Fire Tubes
160 psi Working Pressure
On/Off Switch
Adjustable High Limit with Manual Reset
Low Water Cutoff with Manual Reset & Test
High & Low Gas Pressure Switches w/Manual Reset
Low Air Pressure Switches
Condensate Trap w/Blocked Drain Switch
Drain Valve
System Sensor
Outdoor Air Sensor
Inlet & Outlet Temperature Sensors
High-Voltage Terminal Strip
Low-Voltage Terminal Strip
Downstream Gas Test Cocks
50 psi ASME Relief Valve
Temperature & Pressure Gauge
Zero Clearances to Combustible Materials
SCCR of 5,000 A
10-Year Limited Warranty (See Warranty for Details)
1-Year Warranty on Parts (See Warranty for Details)

