

HIGH EFFICIENCY COMMERCIAL BOILERS



CONDENSING BOILER

SMART TOUCH™

TOUCHSCREEN OPERATING CONTROL
FEATURING A BUILT-IN CASCADING SEQUENCER

1.0, 1.3 AND 1.5 MILLION BTU/HR

FIRING RATE MODULATION TO 10:1

DIRECT-VENT FLEXIBILITY TO 100 FEET



UP TO 98%
THERMAL EFFICIENCY



BUILDING ON A NEW TRADITION OF INNOVATION

Lochinvar's commitment to research and development once again brings new innovation to the industry! The new SYNC™ Commercial Boiler combines stainless steel heat exchanger technology with **Modulating Condensing** combustion to deliver thermal efficiencies as high as 98% in low-temperature applications.

With models at 1.0, 1.3 and 1.5 million BTU/hr inputs, SYNC will serve a large range of commercial applications and add the "green" touch that building owners and facility managers desire.

SYNC also reaches new levels of innovation with SMART TOUCH™... touchscreen technology that puts total operational control at your fingertips! With SMART TOUCH, it's easier than ever to set up a perfectly synchronized "green" system, and access a complete onboard database of real-time operational data and performance history.

Other features in SYNC with your needs include space-saving footprints, direct-vent design with intake and exhaust runs up to 100 feet, and a built-in cascading sequencer for up to 8 boilers, delivering up to 12 million BTU/hr heating capacity.

Link up with SYNC...the mod/con boiler that's touched by innovation in every way.

THE SYNC COMBUSTION SYSTEM ADVANCED NEGATIVE REGULATION TECHNOLOGY

SYNC safely and reliably operates with supply gas pressure as low as 4 inches water column, because Negative Regulation (Neg/Reg) technology automatically adjusts fan speed to ensure the correct volume of fuel and air entering the burner.

"FAIL-SAFE" DIRECT-SPARK IGNITION

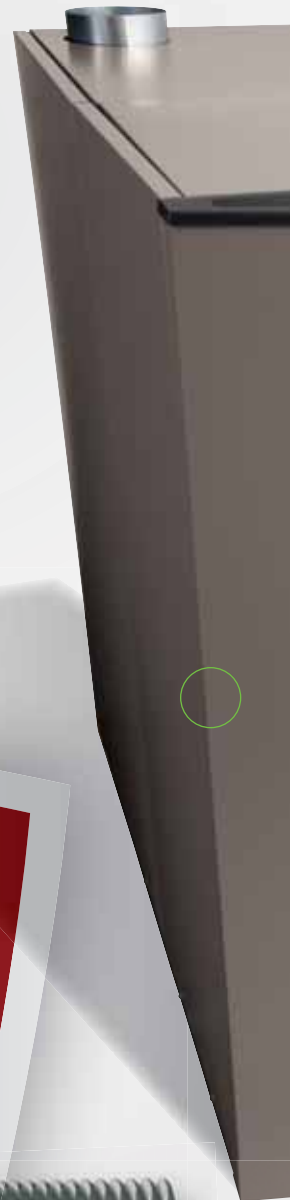
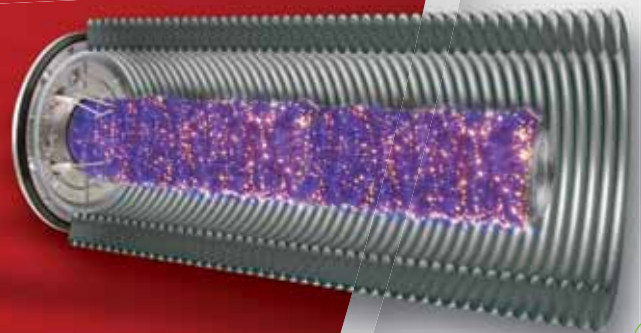
With each call for heat, two electrodes ignite the fuel/gas mixture. A third electrode then senses for flame. SMART TOUCH will lock out and display the fault if ignition does not occur.

TWO-IN-ONE STAINLESS STEEL HEAT EXCHANGER

A primary heat exchanger combined with a secondary exchanger captures flue gas heat and allows entering water temperatures as low as 32°F without a low-temperature bypass. The stainless steel, pH-tolerant design features a weld-sealed assembly with no O-rings or gaskets, and does not require special glycol. ASME Section IV approved and stamped.

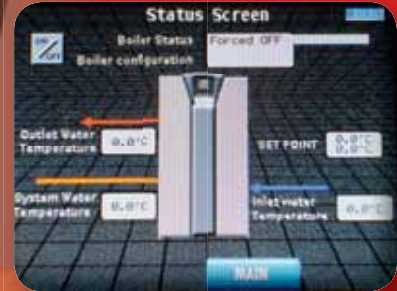
FULLY MODULATING BURNER

SMART TOUCH allows fully modulating combustion with 10:1 turndown. The combustion system can fire as low as 10% of maximum input, and modulates the firing rate up to 100% as demand increases. The burner design incorporates a woven steel mesh sleeve over a stainless steel burner tube and fires in a 360° pattern along the entire length of the primary heat exchanger. These together allow SYNC's compact size to excel compared to units with larger multiple burners.



SMART

COMPLETE OPERATOR



STATUS SCREEN

Status Screen gives you a quick, convenient overview of current boiler operation.

UNEQUALED CONTROL AND MONITORING FUNCTIONS THAT ARE EASY TO USE

MODBUS COMMUNICATION

SMART TOUCH provides full system integration with Modbus communication protocol.

BUILDING MANAGEMENT SYSTEM CONTROL (0 – 10 V, 4 – 20 MA)

BMS-driven input for modulation rate or temperature control.

PASSWORD SECURITY

Dual password levels for installer & user.

HOT WATER GENERATOR COMPATIBILITY

One boiler in the system can be assigned for Domestic Hot Water Prioritization (DHWP) to meet domestic water demand.

PRODUCT SERVICE INDICATOR

Program reminders for cycle count, operation hours or last service.

SYSTEM AND BOILER PUMP CONTROLS

Provides power to both system and boiler pumps based on a call for heat. Programmable pump delay allows pumps to operate after a call has been satisfied.

FREEZE PROTECTION

Ensures water temperature does not fall below 40°F.

LOW WATER FLOW INDICATOR

Protects against high temperature differential in the heat exchanger with reduced firing rate or shutdown.

OUTDOOR RESET

Outdoor temperature monitor guides the reset schedule to meet heat loss/load of the building.

NIGHT TEMPERATURE SETBACK

Program a temperature setback for any time of the day, each day of the week.

PC CONNECTION

Connect with optional SYNC PC software to download and track historical data, including faults, trends and energy consumption.

31"

zero clearance to combustibles



TOTAL CONTROL, AT YOUR FINGERTIPS

The full-color SMART TOUCH Main Menu screen is your gateway to complete control of all SYNC functions, and total access to system performance data and history. Do it all and see it all right here, with or without connecting to a separate PC using our SMART TOUCH software.

EASY HANDLING ON THE JOBSITE

SYNC boilers are just 58" high and 31" wide, so they fit through a standard doorway or into small elevators. And stainless steel heat exchangers make them remarkably lightweight compared to other boilers in their class.



DIRECT-VENTING UP TO 100 FEET

SYNC offers tremendous flexibility for building plan placement because it permits direct-vent air intake and exhaust runs up to 100 equivalent feet using PVC, CPVC or AL29-4C stainless steel vent pipe. Intake and exhaust runs can terminate horizontally through a sidewall or vertically through the roof.



FUNCTIONS AT YOUR FINGERTIPS



CASCADE SCREEN

Control up to 8 boilers with real-time information on cascading operations at your fingertips.



TEMPERATURE SCREEN

Precisely monitor every aspect of temperature from virtually every point in the system.



BUILT-IN CASCADING SEQUENCER

Sequences up to an 8-boiler system using simple 2-wire daisy-chain connection, eliminating cost and uncertainty of separate “third party” sequencer. On demand, one boiler functions as the lead unit, and modulates to capacity. Increasing load then “cascades” to additional “lag” boilers in sequence as needed. Lead-lag rotation shifts lead boiler role every 24 hours, distributing equal lead-lag runtimes to each unit.

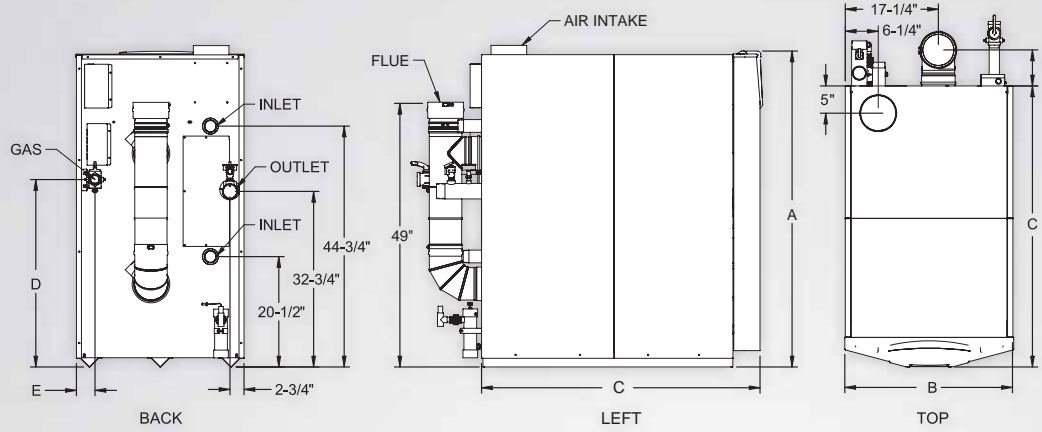
EASY ACCESS TO INTERNAL COMPONENTS

SYNC provides fast, easy access to internal components and electrical connections through a quick-release front door and easy-to-remove top jacket panel.

FIELD CONNECTION VERSATILITY

Two user-friendly terminal strips allow for 28 easy low-voltage field connections. Plus 4 line voltage connections supply power to the unit, and up to three pumps operated by the SMART TOUCH control.

SYNC™ BOILER DIMENSIONS AND SPECIFICATIONS



Model Number Guide			
SB	N	1500	M13
Model	Natural Gas	Blue/hr Input	Firing Controls

SYNC Boiler,
Natural Gas,
1,500,000 Btu/hr input,
M13 firing controls

SYNC HEATING BOILER

DIMENSIONS AND SPECIFICATIONS

Model Number	Input MBH Min.	Input MBH Max.	Thermal Efficiency %	Output MBH	A	B	C	D	E	F	Gas Conn.	Inlet Water Conn.	Outlet Water Conn.	Air Inlet	Vent Size	Shipping Wt. (lbs.)
SBN1000	100	1,000	94	940	58-3/4"	31"	48"	35"	4-1/2"	15"	1-1/2"	2" x 2"	2-1/2"	6"	6"	710
SBN1300	130	1,300	94	1,222	58-3/4"	31"	52-1/4"	34-3/4"	3-1/2"	6-3/4"	1-1/2"	2" x 2"	2-1/2"	6"	6"	790
SBN1500	150	1,500	94	1,410	58-3/4"	31"	56-1/2"	34-3/4"	3-1/2"	6-3/4"	1-1/2"	2" x 2"	2-1/2"	6"	6"	880

Notes: Change 'N' to 'L' for L.P. Gas Model. No deration on L.P. models. Performance data based on manufacturer test results. 120 VAC / 15 AMP circuit required. All dimensions shown in inches.

STANDARD FEATURES

- > 94% Thermal Efficiency
- > Up to 98% Thermal Efficiency in Low Temperature Applications
- > Modulating Burner with 10:1 Turndown
- Direct-Spark Ignition
- Low NOx Operation
- Sealed Combustion
- Low Gas Pressure Operation
- > Vertical & Horizontal Venting
- Category IV Venting up to 100 Feet
- PVC, CPVC or AL29-4C Vent Material
- Sidewall Vent Terminations Provided
- > ASME Stainless Steel Heat Exchanger
- ASME Certified, "H" Stamped
- Gasketless Design
- 160 psi Working Pressure
- > On/Off Switch
- > Adjustable High Limit with Manual Reset
- > Low Water Cutoff with Manual Reset & Test
- > Low Air Pressure Switch
- > High & Low Gas Pressure Switches with Manual Reset
- > Inlet & Outlet Temperature Sensors
- > Two Easy Access Terminal Strips
- > Downstream Test Cocks
- > 50 psi ASME Relief Valve
- > Temperature & Pressure Gauge
- > Zero Clearance to Combustible Material
- > Approved for Combustible Floor Installation
- > 1 Year Warranty on Parts
- > 10 Year Limited Warranty (see warranties for details)

SMART TOUCH™ FEATURES

- > SMART TOUCH™ Touchscreen Operating Control
- Full-Color Touchscreen LCD Display
- Built-in Cascading Sequencer for up to 8 Boilers
- Building Management System Integration with 0-10 VDC Input
- Modbus Communications
- Outdoor Reset Control with Outdoor Air Sensor
- Dual Level Password Security
- Domestic Hot Water Prioritization
- 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
- Ignition Attempts
- Last 10 Lockouts
- > Programmable System Efficiency Optimizers
- Night Setback
- Anti-Cycling
- Outdoor Air Reset Curve
- Boost Temperature & Time
- > Three Pump Control
- System Pump
- Boiler Pump
- Domestic Hot Water Pump

- > High Voltage Terminal Strip
- 120 VAC / 50-60 Hertz / 1-Phase Power Supply
- Three Sets of Pump Contacts
- > Low Voltage Terminal Strip
- 24 VAC Auxiliary Device Relay
- Auxiliary Proving Switch Contacts
- Flow 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

OPTIONAL EQUIPMENT

- > Alarm Bell on Any Failure
- > Condensate Neutralization Kit
- > SMART SYSTEM PC Software
- > Stainless Steel Vent Kits

CODES & REGISTRATIONS

- > ANSI Z21.13b-2007 certified
- > ASME certified, "H" stamp
- > California Code compliant
- > CSD1 / Factory Mutual / GE Gap compliant
- > Massachusetts Code compliant
- > South Coast Air Quality Management District registered



Lochinvar®
 High Efficiency Water Heaters, Boilers and Pool Heaters