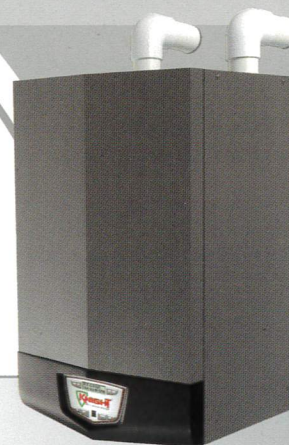


Up to  
\$1500  
Energy Tax Credit  
Qualified Product!

the best

mod/con Performance  
and Versatility

UP TO  
**96%**  
DOE AFUE  
Efficiency



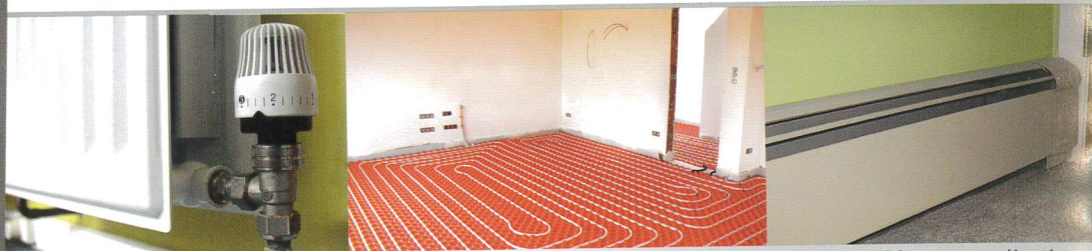
With Floor and  
Wall Mount Models



PO BOX 1934, 104 E. 11TH ST  
KEARNEY, NE 68848-1934  
308-234-2141  
WWW.FIDDELKEHVAC.COM



[www.knightheatingboiler.com](http://www.knightheatingboiler.com)



KNIGHT is a great choice for radiant floor heating, baseboard and panel heater applications.

Since its introduction in 2005, the KNIGHT modulating-condensing heating boiler has consistently delivered everything the professional needs for ease of installation and maintenance, and everything homeowners need for total comfort and long-term savings on energy costs.

With 5 floor-standing models and 5 compact Wall Mount units, Lochinvar offers the industry's broadest selection of modulating-condensing heating boilers. And KNIGHT is the industry's most advanced boiler design, including the SMART SYSTEM™

operating control that has quickly become a legendary benchmark among the trade!

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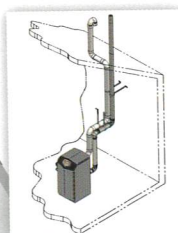


## 10 Models – The Right Choice, for Every Application

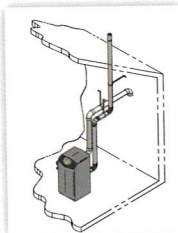


## 5 Flexible Venting Options

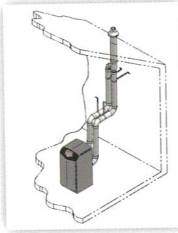
Direct Vent Vertical



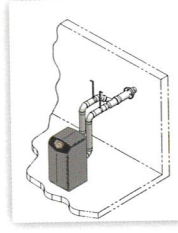
Vertical w/Sidewall Air



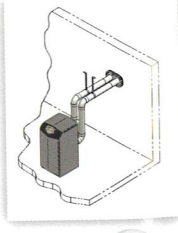
Direct Vent Vertical\*



Direct Vent Sidewall\*



Direct Vent Sidewall



### Vent using PVC, CPVC or Stainless Steel

Up to 100 feet of air intake and 100 feet of exhaust vent with PVC, CPVC or SS. \*Optional Concentric Vent Kit sold separately.



**"Why do I like the KNIGHT? I don't know where to begin.**

The direct venting with 100 feet of intake and exhaust eliminates a lot of problems. I also like the low voltage features, and the SMART SYSTEM's outdoor reset capability. The internal sequencer is tremendously powerful and ideal for multiple boiler installations. It's also great-looking, and aesthetics are important to my customers. When I install KNIGHT, my customers know they are getting a highly efficient state-of-the-art system, and they've all been completely satisfied."

– Paul Rohrs, Biggerstaff Radiant Solutions, Lincoln, NE

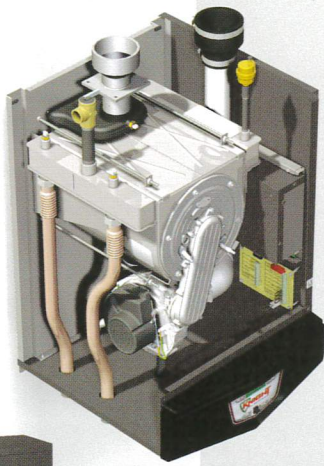
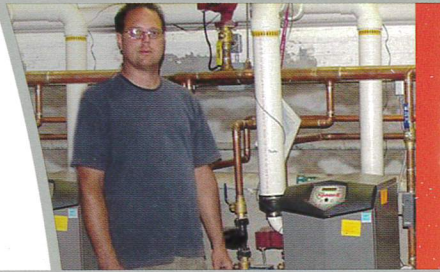
# Heroic Quality and Innovation

**96%**  
DOE AFUE  
Efficiency

**98%**  
Efficiency  
in low-temp  
radiant  
applications

*"I'm very impressed with the KNIGHT Boiler. It's lightweight, simple to install and works remarkably well. The SMART SYSTEM control is a definite advantage, because most other manufacturers sell the control separately and it has to be assembled on the job. I also really like that the KNIGHT can modulate down to 20 percent, and that the wiring is very easy to understand. I recommend the KNIGHT to all of my customers who are looking for a quality boiler that will perform well and last for years."*

*— Steve Ayotte, Ayotte's Water Works, Lansing, MI*



## Advanced Negative Regulation Technology

KNIGHT safely and reliably operates with supply gas pressure as low as 4 inches water column, because "Neg/Reg" technology automatically adjusts gas pressure 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. If no flame is detected, the system resets and attempts ignition four times. SMART SYSTEM will lock out and display a fault if ignition does not occur after four attempts.

## Two-in-One Stainless Steel Heat Exchanger

A primary heat exchanger combined with a secondary heat exchanger capturing flue gas heat allows entering water temperatures as low as 32°F. 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 with 5:1 Turndown

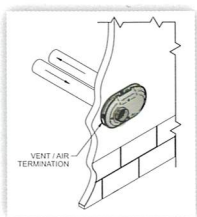
The SMART SYSTEM allows fully modulating combustion with 5:1 turndown. The burner can fire as low as 20% of maximum input, and modulates the firing rate up to 100% as demand increases. The woven stainless steel mesh assembly fires in a 360° pattern along the entire length of the heat exchanger. These together allow KNIGHT's compact size to excel compared to units with larger multiple burners.



## Ease of Installation

### Direct Venting up to 100 Feet!

KNIGHT offers greater flexibility than other boilers for placement of units within the building, because it permits direct-vent air intake and exhaust runs up to 100 equivalent feet, using PVC, CPVC or SS pipe. Additionally with Wall-Mounted KNIGHT models (WB 50-105) intake and vent runs of up to 40 feet are approved using 2" pipe. Intake and exhaust runs can terminate horizontally through a sidewall or vertically through the roof.



### Sidewall Vent Termination

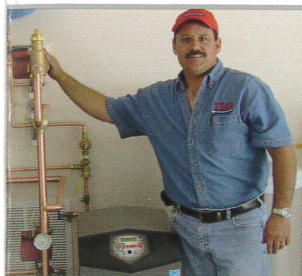
**SIDEWALL VENT  
TERMINATION -  
FACTORY SUPPLIED AND  
SHIPPED STANDARD  
WITH EVERY MODEL**



**SMART  
SYSTEM**

# The Industry's Smartest Design

SMART SYSTEM is the industry's most advanced operating control. Right out of the box, it gives you unequalled control and monitoring functions that are easy to understand and use.



"I really like the KNIGHT Boiler because it's very simple to install and program. The SMART SYSTEM control is great and I really like being able to troubleshoot with the PC software. My customers choose KNIGHT for its high efficiency and state-of-the-art design, and they're all thrilled that KNIGHT operates so quietly and makes their home much more comfortable."

— Chad Padilla, The Socha Company, Albuquerque, NM

## 2-Line, 16-Character LCD Display

Displays setup and diagnostic information in words, not codes

## Password Security

Dual passwords for installer and user

## Product Service Indicator

Program reminders for cycle count, operation hours or last service

## Pump Relay w/Freeze Protection

Ensures water temperature does not fall below 40°F

## Low-Water Flow Indicator

Uses temperature differential to protect against low flow in the heat exchanger by reducing modulation or shutdown

## Outdoor Reset

Outdoor temperature monitor guides the reset schedule to meet load

## Night Setback

Program a heating loop water temperature setback for any time of the day, each day of the week

## Building Management System (BMS) Control

0-10 VDC, BMS-driven input for modulation rate or temperature control

## DHWP with Pump Control

On call for hot water, SMART SYSTEM overrides outdoor reset and starts DHWP pump to the indirect. Runtime can alternate between heating and domestic hot water to meet demand simultaneously

## System & Boiler Pump Controls

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

## In/Out Temperature Sensors

Allows installer to select which sensor controls the boiler setpoint



## PC Connection —

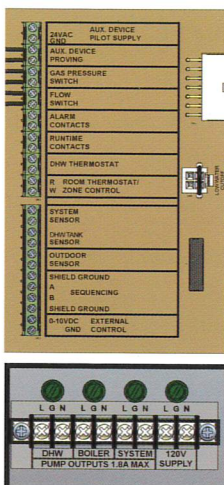
Can be used with KNIGHT PC software to troubleshoot and program SMART SYSTEM functions and to track historical data, including faults, trends and energy consumption.

## Field Connection Versatility

User-friendly terminal strip allows for 28 low-voltage field connections. Plus, 4 line voltage connections supply power to the unit, and up to three pumps operated by the SMART SYSTEM.

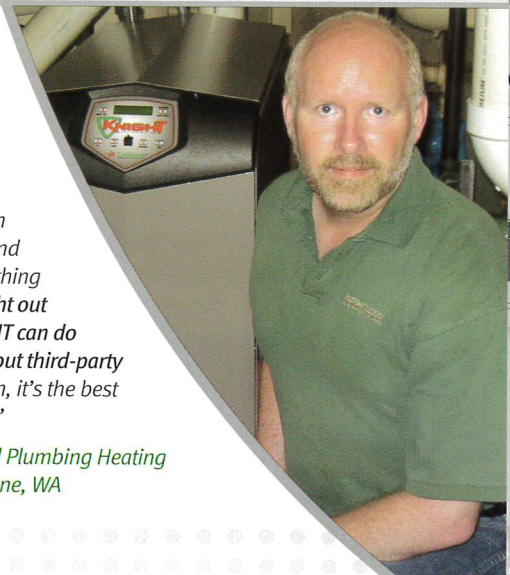
## Built-in Cascading Sequencer

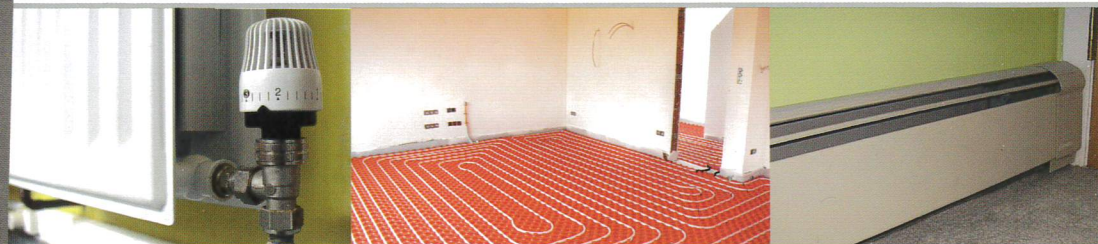
SMART SYSTEM includes a built-in sequencer for 2–8 units, eliminating the cost and labor of a third-party sequencer. On demand, one boiler acts as lead unit and modulates with demand to meet capacity. The additional load then "cascades" to the next boiler in line and continues until all are operating or demand is satisfied. When demand drops, the process reverses.



"The control system on the KNIGHT is head and shoulders above anything else available. Straight out of the box, the KNIGHT can do anything I need without third-party controls. Hands-down, it's the best boiler on the market."

— Don Smet, Standard Plumbing Heating Controls Corp., Spokane, WA





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### 10 Models – The Right Choice, for Every Application



The KNIGHT floor-standing lineup features 5 small footprint designs from 80,000 to 285,000 Btu/hr

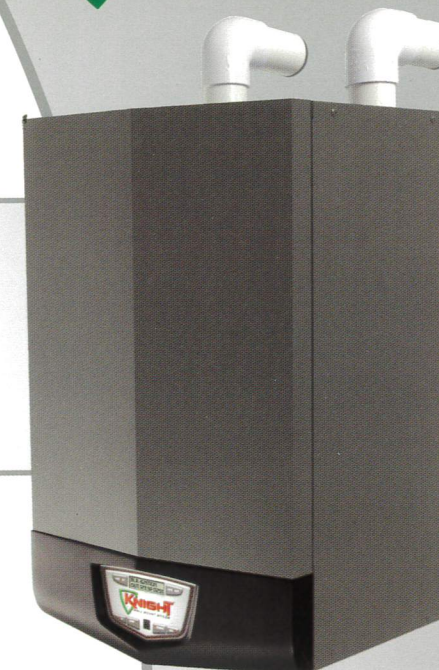
## Space Saving Convenience



"After my first KNIGHT installation, I loved it so much I installed it in my own home, and now my heating bill is half what it used to be."

– Rick Brunner, Hydronic Solutions, Nassau County, NY

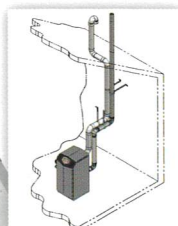
KNIGHT lineup includes 5 space-saving Wall Mount models from 50,000 to 210,000 Btu/hr



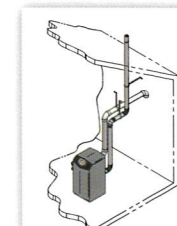
All KNIGHT Boilers meet or exceed the highest federal emissions requirements.

## 5 Flexible Venting Options

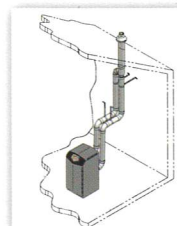
Direct Vent Vertical



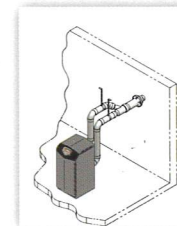
Vertical w/Sidewall Air



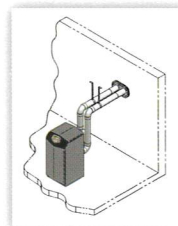
Direct Vent Vertical\*



Direct Vent Sidewall\*



Direct Vent Sidewall



### Vent using PVC, CPVC or Stainless Steel

Up to 100 feet of air intake and 100 feet of exhaust vent with PVC, CPVC or SS. \*Optional Concentric Vent Kit sold separately.



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– Paul Rohrs, Biggerstaff Radiant Solutions, Lincoln, NE

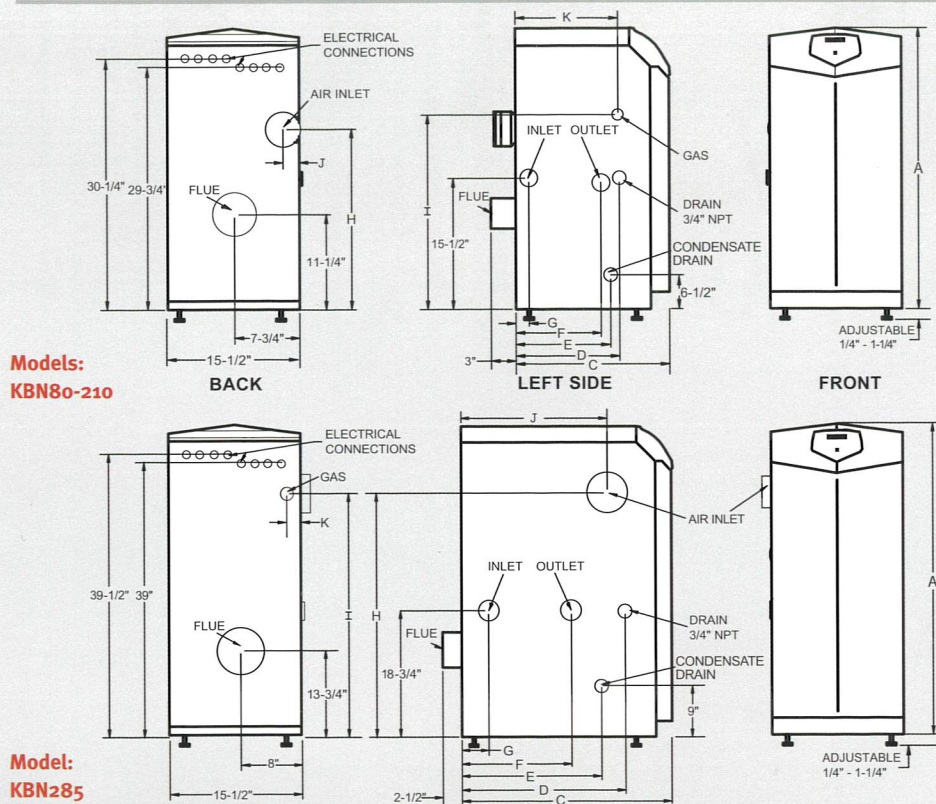
## Squire models - 30 to 120 gallons

### KNIGHT plus SQUIRE delivers domestic hot water for less!

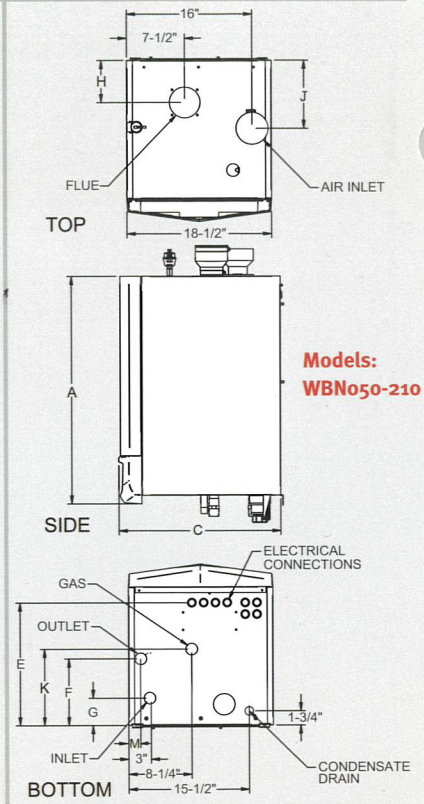
The KNIGHT boiler's DHWP feature means you can easily install it with Lochinvar's new SQUIRE indirect water heater. With this winning combination, homeowners will get high-efficiency space heating from KNIGHT, plus all the domestic hot water they need from SQUIRE. Equipped with a stainless steel tank and heat exchanger, SQUIRE will provide more hot water with lower water heating costs compared to a standard gas or electric water heater.




## Knight Heating Boiler Dimensions & Specifications— Floor Standing Models



## Wall Mount Models



KNIGHT Heating Boiler 						Dimensions and Specifications																
Model Number	Input		AFUE %	Heating Capacity		NET I=B=R MBH	A	C	D	E	F	G	H	I	J	K	M	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Shipping Weight
	Min MBH	Max MBH		MBH	MBH																	
WBN050	10	50	95.3	45	39	29-1/4"	15-3/4"	NA	10-3/4"	10-3/4"	2"	6-3/4"	NA	3-1/4"	4-1/4"	2-3/4"	1/2"	1"	2"	2"	130	
WBN080	16	80	95.3	72	63	29-1/4"	15-3/4"	NA	10-3/4"	10-3/4"	2"	6-3/4"	NA	3-1/4"	4-1/4"	2-3/4"	1/2"	1"	2"	2"	130	
WBN105	21	105	95.4	94	82	29-1/4"	15-3/4"	NA	10-3/4"	10-3/4"	3-1/2"	5-1/2"	NA	3-1/4"	4-1/4"	2-3/4"	1/2"	1"	2"	2"	134	
WBN150	30	150	95.5	135	119	29-1/4"	20-3/4"	NA	15-3/4"	8-1/2"	3-1/2"	5-1/2"	NA	8-3/4"	9-3/4"	1-1/2"	1/2"	1"	3"	3"	162	
WBN210	42	210	95.7	190	165	29-1/4"	25"	NA	20"	12"	3-1/2"	5-1/2"	NA	13"	14"	1-1/2"	1/2"	1"	3"	3"	177	
KBN080	16	80	95.3	72	63	33-1/4"	14"	7"	5-3/4"	5"	3"	20-1/2"	22"	1-3/4"	6-1/2"	NA	1/2"	1"	3"	3"	125	
KBN105	21	105	95.4	94	82	33-1/4"	14"	6-1/2"	5-3/4"	4-1/2"	1-1/2"	20-1/2"	22"	1-3/4"	6-1/2"	NA	1/2"	1"	3"	3"	129	
KBN150	30	150	95.5	135	119	33-1/4"	18"	12-1/4"	11-1/2"	10"	1-1/2"	21-1/4"	23"	1-3/4"	12"	NA	1/2"	1"	3"	3"	157	
KBN210	42	210	95.7	190	165	33-1/4"	22-1/4"	16-1/2"	15-3/4"	14-1/4"	5-1/4"	21-1/4"	23"	1-3/4"	16-1/4"	NA	1/2"	1"	3"	3"	172	
KBN285	57	285	96.0	260	226	42-1/2"	19-3/4"	12-3/4"	13-1/2"	6"	2"	34"	31"	11-3/4"	4-1/4"	NA	3/4"	1-1/4"	4"	4"	224	

Notes: Performance data based on manufacturer's test results. Indoor installation only. All information subject to change. Change "N" to "L" for LP gas models.

### Standard Features

- ▶ Energy Star® Qualified
- ▶ Up to 96% DOE AFUE Efficiency
- ▶ Modulating Burner with 5:1 Turndown
  - ▶ Direct-Spark Ignition
  - ▶ Low NOx Operation
  - ▶ Field Convertible from Natural to LP Gas
- ▶ Vertical & Horizontal Direct-Vent
  - ▶ PVC, CPVC or SS Venting up to 100 Feet
  - ▶ Factory Supplied Sidewall Vent Termination
- ▶ ASME Stainless Steel Heat Exchanger
- ▶ Automatic Reset High Limit
- ▶ Inlet & Outlet Temperature Sensors
- ▶ Boiler Circulating Pump
- ▶ 30 psi ASME Relief Valve
- ▶ Adjustable Leveling Legs (KB Models only)
- ▶ Wall Mount Bracket (WB Models only)
- ▶ Zero Clearances to Combustible Material
- ▶ 12 Year Limited Warranty (See Warranty for Details)

### SMART SYSTEM™ Features

- ▶ SMART SYSTEM Digital Operating Control
  - ▶ 2 line, 16 Character Display
  - ▶ Dual Level Password Security
  - ▶ Domestic Hot Water Prioritization
  - ▶ Built in Cascading Sequencer for up to 8 Boilers
  - ▶ 0-10 VDC Input Control
  - ▶ Outdoor Reset Control with Outdoor Air Sensor
  - ▶ Low Water Flow Safety Control & Indication
  - ▶ Alarm on Any Failure Contacts
  - ▶ Service Reminder
  - ▶ Freeze Protection
  - ▶ Night Setback
  - ▶ Time Clock
  - ▶ Three Pump Control (System, Boiler & DHWP)
  - ▶ Data Logging
    - ▶ Examples: Hours Running, Space Heating
  - ▶ Programmable System Efficiency Optimizers
    - ▶ Examples: Anti-cycling, Ramp Delay

### Optional Equipment

- ▶ Adjustable High Limit w/ Manual Reset
- ▶ Flow Switch
- ▶ Low Water Cutoff w/Manual Reset & Test
- ▶ Alarm Bell
- ▶ Concentric Vent Kit
- ▶ Condensate Neutralization Kit
- ▶ SMART SYSTEM PC Software
- ▶ Multi-Stack Frame

### Firing Codes

- ▶ M9 Standard Construction
- ▶ M7 California Code



**Lochinvar®**  
High Efficiency Water Heaters, Boilers and Pool Heaters