



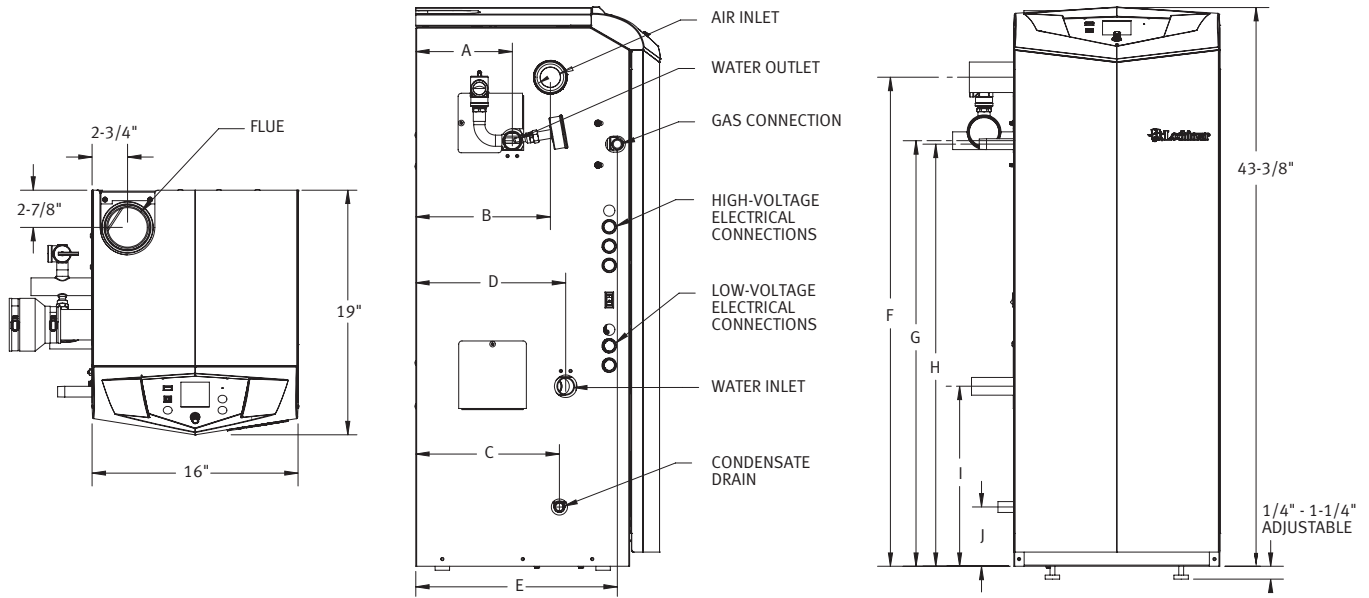
Lochinvar[®]
HIGH EFFICIENCY BOILERS & WATER HEATERS

**KNIGHT
FIRE TUBE BOILER
Submittal Sheet**

KHN-Sub-01

KNIGHT FIRE TUBE BOILER

JOB NAME _____
LOCATION _____
ENGINEER _____
WHOLESALER _____
CONTRACTOR _____
MODEL NO. _____
TYPE GAS _____
EQUIPMENT TAG _____
NOTES



Model Number	Input MBH		AFUE%	Heating Capacity MBH	Net MBH	A	B	C	D	E	F	G	H	I	J	Gas Connect.	Water Connect.	Air Inlet	Vent Size	Shipping Weight
	Min	Max																		
KHN055	8.3	55	95	51	44	6"	8-3/8"	11-1/8"	10-1/2"	13-1/4"	37-1/2"	32-5/8"	32-1/4"	13-1/4"	3-3/8"	1/2"	1"	2"	2"	160
KHN085	8.5	85	95	79	69	6"	8-3/8"	11-1/8"	10-1/2"	13-1/4"	37-1/2"	32-5/8"	32-1/4"	13-1/4"	3-3/8"	1/2"	1"	2"	2"	165
KHN110	11	110	95	102	89	7-3/8"	9-3/4"	11-1/8"	10-5/8"	14-5/8"	37-3/4"	33"	32-1/2"	14"	4-5/8"	1/2"	1"	3"	3"	170
KHN155	15.5	155	95	144	125	7-3/8"	9-3/4"	11-1/8"	10-5/8"	14-5/8"	37-3/4"	33"	32-1/2"	14"	4-5/8"	1/2"	1"	3"	3"	175
KHN199	19.9	199.9	95	185	161	7-1/2"	10-1/2"	11-1/8"	11-5/8"	15-3/8"	38"	33"	32-3/4"	14"	4-5/8"	1/2"	1-1/4"	3"	3"	195
KHN285	28.5	285	95	264	229	7-1/2"	10-1/2"	11-1/8"	11-5/8"	15-3/8"	38"	33"	32-3/4"	14"	4-5/8"	1/2"	1-1/4"	3"	3"	205

*Information subject to change without notice. Change "N" to "L" for LP gas models.



FIRING CODES

- M9 Standard Construction
- M7 California Code



SMART SYSTEM™ FEATURES

› Smart System Digital Operating Control

Multi-Color Graphic LCD Display w/Navigation Dial,
Soft Keys and Loch-N-Link™ USB programming

› Three Boiler Setpoint Temperature Inputs

Plus Domestic Hot Water Prioritization

› Built-in Cascading Sequencer for up to 8 Boilers, with Cascade Redundancy

Multiple Size Boiler Cascade
Lead Lag
Efficiency Optimization
Front End Loading Capability

› Outdoor Reset Control with Outdoor Air Sensor

Programmable for Three Reset Temperature Inputs

› Programmable System Efficiency Optimizers

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

› Four Pump Control

System Pump with Parameter for Continuous Operation
Boiler Pump with Variable Speed Control
Domestic Hot Water Pump
Domestic Hot Water Recirculation

› 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 Space Heat/DHW Switching Times

› Building Management System Integration

0-10 VDC Input to Control Modulation or Setpoint
0-10 VDC Modulation Rate Output
0-10 VDC Input to Enable/Disable Call for Heat

› Access to BMS Settings through Graphic LCD Display

› High-Voltage Terminal Strip

120 VAC / 60 Hertz / 1 Phase Power Supply
Three Sets of Pump Contacts

› Low-Voltage Terminal Strip

DHW Recirculation Pump Start/Stop
24 VAC Device Relay
Proving Switch Contacts
Flow Switch Contacts
Alarm on Any Failure Contacts
Runtime Contacts
DHW Thermostat Contacts
3 Space Heat Thermostat Contacts
System Sensor Contacts
DHW Tank Sensor Contacts
Outdoor Air Sensor Contacts
Cascade Contacts
0-10 VDC BMS External Control Contact
0-10 VDC Boiler Rate Output Contacts
0-10 VDC Variable Speed System Pump Signal Input
0-10 VDC Signal to Control Variable Speed Boiler Pump
Modbus Contacts

› Time Clock

› Data Logging

Hours Running, Space Heating
Hours Running, Domestic Hot Water
Ignition Attempts
Last 10 Lockouts

› Maintenance Reminder

Custom Maintenance Reminder with Contractor Contact Information
Installer Ability to De-activate Service Reminder

› Low-Water Flow Safety Control & Indication

› Password Security

› Customizable Freeze Protection Parameters

STANDARD FEATURES

› ENERGY STAR Most Efficient Product

› 95% DOE AFUE Efficiency

› Modulating Burner with up to 10:1 Turndown

Direct Spark Ignition
Low NOx Operation

› ASME Stainless Steel Heat Exchanger

30 PSI ASME Relief Valve

› Vertical & Horizontal Direct Vent

PVC, CPVC, Polypropylene or SS Venting up to 100 feet

› Smart System Control

› Condensate Trap

› Other Features

Automatic Reset High Limit
Adjustable High Limit w/Manual Reset
Boiler Circulating Pump
Zero Clearances to Combustible Materials
12-Year Limited Warranty (See Warranty for Details)

5-Year Limited Parts Warranty

OPTIONAL EQUIPMENT

CON-X-US® Remote Connectivity
Modbus Communication

BACnet MSTP

Flow Switch

Low-Water Cutoff w/Manual Reset & Test

Alarm Bell

Concentric Vent Kit

SMART SYSTEM™ PC Software

Condensate Neutralization Kit

BMS Gateway to LON or BACnet IP

Multi-Temperature Loop Control

Sidewall Vent Termination

Wireless Outdoor Sensor

LP Gas Conversion Kit



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