CROWN BOILER BY VELOCITY BOILER WORKS

PHNTM Floor Standing Heating Boiler

Wholesaler _____

Job Name _____

Mech. Contractor _____

Model No. _____ Quantity: _____

Gas Type _____

BTU/hr INPUT _____

BTU/hr OUTPUT _____

Venting Application _____

_____

Standard Features

• ASME Constructed Stainless Steel Water Tube Heat Exchanger

• 30 psi Relief Valve

• 190°F Maximum Operating Supply Temperature

• 95.0% AFUE

• Fully Modulating Burner System with 5:1 Turndown Ratio

• Vent Adapter Allows For CPVC/PVC, Single Wall Polypropylene
  Or Stainless Steel Venting

    Note: See Installation Manual for a List of Approved Vent Systems,
  Vent Length Limitations, and Other Installation Requirements

• Polypropylene Condensate Trap

• Boiler, System and Domestic Hot Water Pump Output Terminals

• Tight Clearances to Combustible Material

• Field Convertible to LP Gas

• Stackable for Floor Space Savings

• Slide Out Control Panel Drawer

• Microprocessor Based Honeywell Sola Control System with Touch Screen
  User Interface Consisting of:

    o Direct Spark Ignition System

    o Supply, Return, Flue, and Outdoor Sensors

    o Lead/Lag and Selectable DHW Priority

    o Warm Weather Shutdown

    o Pump Exercise

    o Central Heating System Freeze Protection

    o Energy Management System (EMS) 4-20mA Interface

    o Plug & Play Multiple Boiler Peer-Peer Communication Network
  Connections For Up to 8 Multiple Boiler Installations

    o Remote Firing Rate and External Limit Terminal Contacts

    o Terminal Contacts for Optional Header Sensor

• 12 Year Limited Heat Exchanger Warranty, 2 Year Warranty On Parts

Optional Equipment

• Condensate Neutralizer

• Header Sensor Kit – Required for multiple burner systems

• RJ45 Cable Splitter

• LWCO Kit

• 50 psi Relief Valve

Special Job Notes:

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PHNTM210B
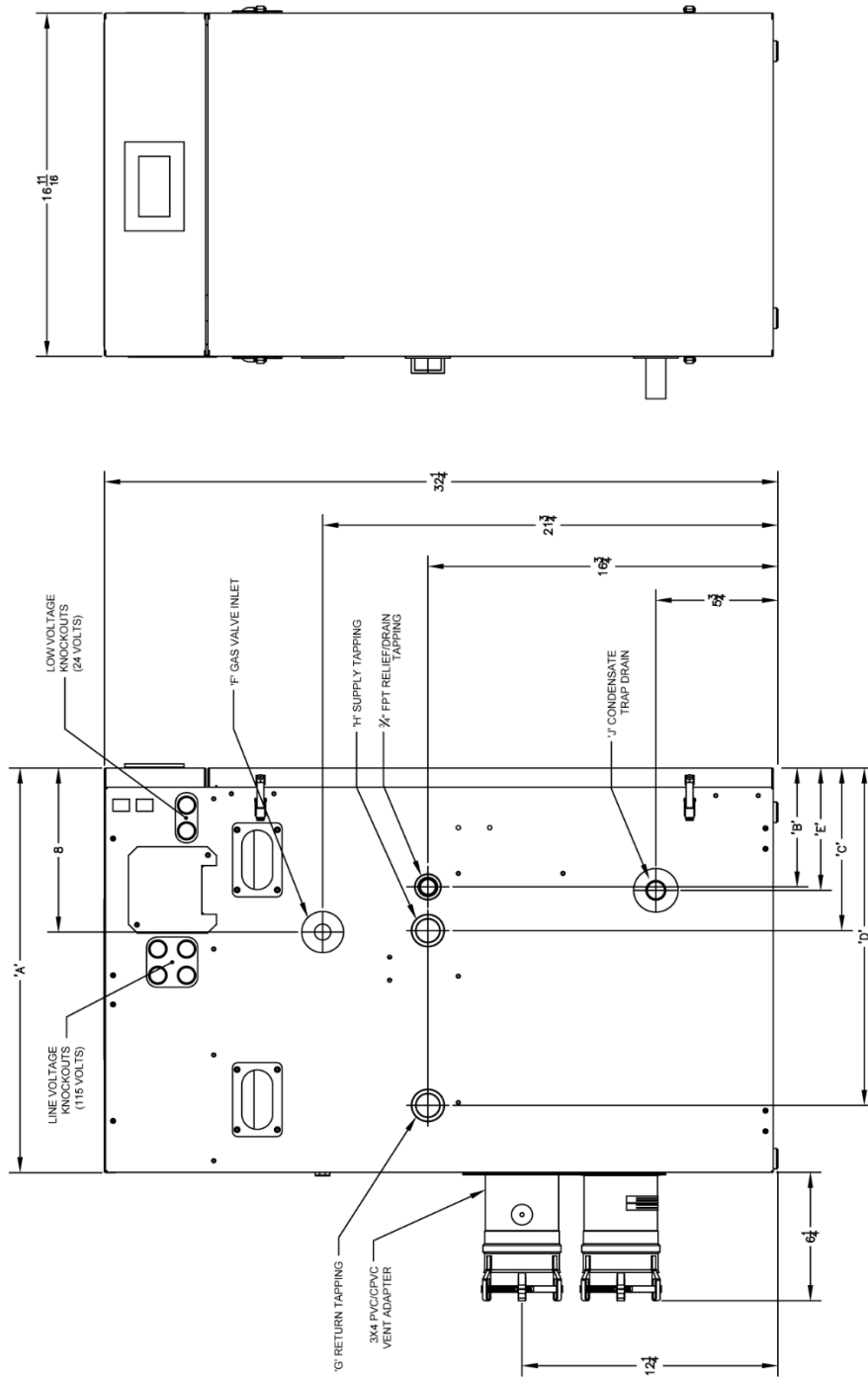
Venting Note: Sizes noted are for two pipe CPVC/PVC & certain specified two pipe poylpropylene and certain specified stainless
steel vent systems. Concentric vent terminals are not permitted. See installation manual for venting option details

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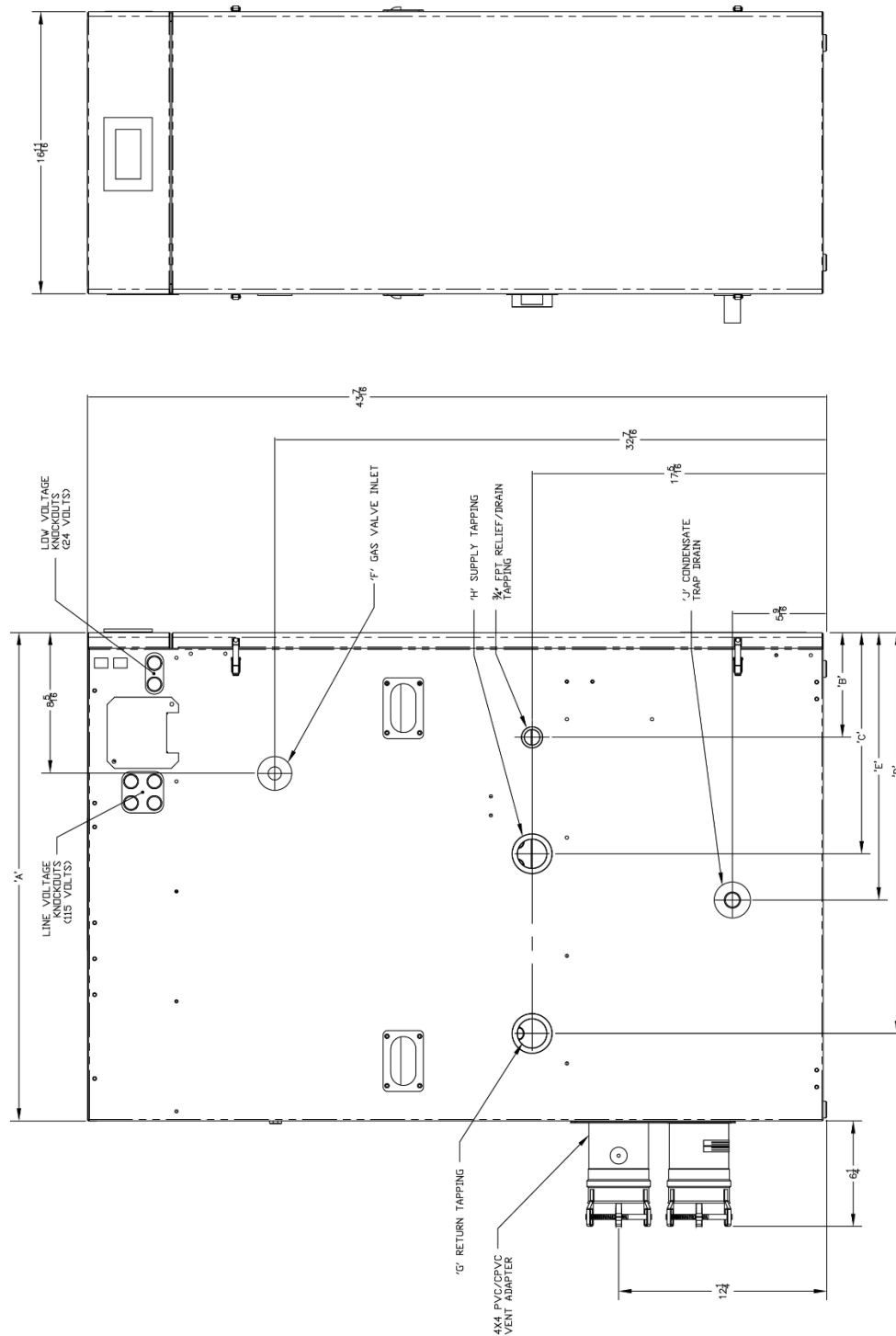
PHNTM285B

Venting Note: Sizes noted are for two pipe CPVC/PVC & certain specified two pipe poylpropylene and certain specified stainless steel vent systems. Concentric vent terminals are not permitted. See installation manual for venting option details

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Specification	Boiler Model	
	PHNTM210B	PHNTM285B
Maximum Input (MBH)	210	285
Minimum Input (MBH)	42	57
Gross Output/Heating Capacity (MBH)	194	262
Net AHRI Water Rating (MBH)*	169	228
AFUE (%)	95.0	95.0
Altitude (ft. above sea level) - USA	0-10,000**	
Altitude (ft. above sea level) - Canada	0-4500**	
Fuel	Shipped for Natural Gas, Field Converted for LP Gas	
Max. Allowable Water Temperature (°F)	190	
Max. Allowable Working Pressure (psi)	160	
Factory Supplied Safety Relief Valve (psi)	30	
Boiler Water Volume (gal.)	1.7	2.4
Heat Transfer Area (sq. ft.)	21.8	29.1
Approx. Shipping Weight (lb)	206	256

*Net AHRI Water Ratings shown are based on a piping and pickup allowance of 1.15

**Special configurations required above 2000ft. Boilers not suitable for LP gas above 7000ft.

Dimensions	Boiler Model	
	PHNTM210B	PHNTM285B
A- Inch (mm)	23-15/16 (608)	21-13/16 (554)
B- Inch (mm)	5-13/16 (147)	7-5/16 (185)
C- Inch (mm)	7-5/16 (186)	14-1/8 (358)
D- Inch (mm)	17-1/8 (435)	18 (456)
E- Inch (mm)	5-15/16 (151)	12-1/4 (312)
Gas Inlet F (FTP)	1/2"	3/4"
Return G	1" (FPT)	1-1/4" (FPT)
Supply H	1" (FPT)	1-1/4" (FPT)
Condensate Drain J	Factory Provided Socket End Compression Pipe Joining Clamp for 3/4" Schedule 40 PVC Pipe	
Nominal Vent Collar Size - Inch	3	4
Nominal Intake Collar Size - Inch	3	4

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Flow Range Requirement Through Boiler

Boiler Model	Boiler Supply Connection, Inch, FPT	Boiler Return Connection, Inch, FPT	Minimum Required Flow (GPM) @ 35°F ΔT	Boiler Head Loss, Ft. @ 35°F ΔT	Required Flow, (GPM) @ 30°F ΔT	Boiler Head Loss, Ft. @ 30°F ΔT	Required Flow, (GPM) @ 25°F ΔT	Boiler Head Loss, Ft. @ 25°F ΔT	Maximum Required Flow (GPM) @ 20°F ΔT	Boiler Head Loss, Ft. @ 20°F ΔT
PHNTM210B	1	1	11.1	5.4	12.9	7.1	15.5	9.8	19.4	14.4
PHNTM285B	1¼	1¼	15.1	5.9	17.7	7.8	21.2	10.7	26.5	16.0

Notes: Required Flow (GPM) = ** Output (MBH) x 1000/500 x ΔT
      ** Output (MBH) – Select Value for specific Boiler Model from Table 2. **See also Table 13 for near boiler piping sizing.** Using boiler antifreeze will result in higher fluid density and may require larger circulators.

Recommended Circulators for 50 ft. Equivalent ft. Near Boiler Piping
[Approximately 20 ft. Straight Pipe, (4) 90° Elbows, and (2) Full Port Ball Valves]

Boiler Model	Boiler Supply Connection, Inch, FPT	Boiler Return Connection, Inch, FPT	Near-Boiler Piping Supply Pipe Size, Inch	Near-Boiler Piping Return Pipe Size, Inch	Flow, GPM @ 25°F Temp. Differential	Combined Boiler & Piping Loop Head Loss, Ft.	Recommended Circulator Make & Model
PHNTM210B	1	1	1¼	1¼	15.5	11.7	Taco 0014 [2]
PHNTM285B	1¼	1¼	1½	1½	21.5	12.3	Taco 0013 [2]

Notes:
[1] Temperature Differential = 20°F
[2] Taco Circulators shown are not equipped with internal flow check valve (IFC).
When selecting Circulators other than recommended, contact Circulator Manufacturer for sizing information.
Near-Boiler Piping Size shown is based on 2 to 5.5 Ft/Sec. velocity range to avoid potential noise and pipe erosion.

Pressure Drop vs. Flow

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