



**Product Submittal for Raytherm® - Type P
Professional-Series Pool Heaters
Models 1468-1826**

Indoor only

Date: _____ Job: _____ Location: _____

Equipment Tags: _____ Engineer: _____ Contractor: _____

Model: _____ Notes: _____

Prepared by: _____ Gas Type: Natural Gas Propane

82% Thermal efficiency

100% Factory fire-tested

Limited twenty-year warranty against thermal shock damage

Limited five-year heat exchanger warranty

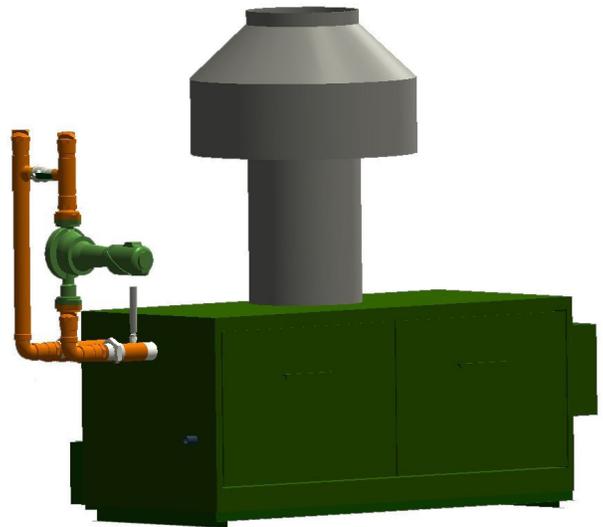
Maximum setpoint: 106°F

A floor load of 70 lbs./sq. ft. or less

Cuts fuel costs substantially because the standby and radiation losses normal to other boilers are eliminated

Operates with water temperature at the tubes as low as 105°F without condensing

Proudly assembled in the USA





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Features and Options

Heat Exchanger

- ASME Inspected and stamped, 160 PSIG
- National board registered
- Bronze headers
- Cupronickel finned tubing
- ASME Steel tube sheet
- Silicone high-temp O-rings
- 125 PSIG ASME pressure relief valve
- Temperature and pressure gauge
- Water connections
 - Left-hand (standard)
 - A-6 Right-hand

Controls

- 120 VAC, 60 Hz, 1 Ph power supply
- 120/24 V Transformer
- 100% Pilot shutoff/lockout
- Electronic, intermittent ignition device (IID) pilot
- High limit, manual reset, fixed, 180°F
- High limit, auto reset, fixed, 140°F (loose)
- Flow Switch
- Economaster pump delay
- On/Off power switch
- Poolstat, 66-106°F

Gas Train

- Combination valve
- Manual main gas shutoff cock
- Firing mode - on/off
- Fuel
 - Natural gas
 - Propane gas (minimum grade HD-5)

Construction

- Outdoor construction
- Enclosed front controls
- Stainless steel burners
- PolyTuf powder-coat finish
- Design Certified ANSI Z21.56/CSA 4.7

Venting

- D-2 Power vent (indoor), cat III (see catalog 1000.70)
- D-10 Drafthood, cat I

Bypass Options (see following)

- None (by others)
- H H-Bypass (default)
- CWR Cold water run

Additional Safety Controls

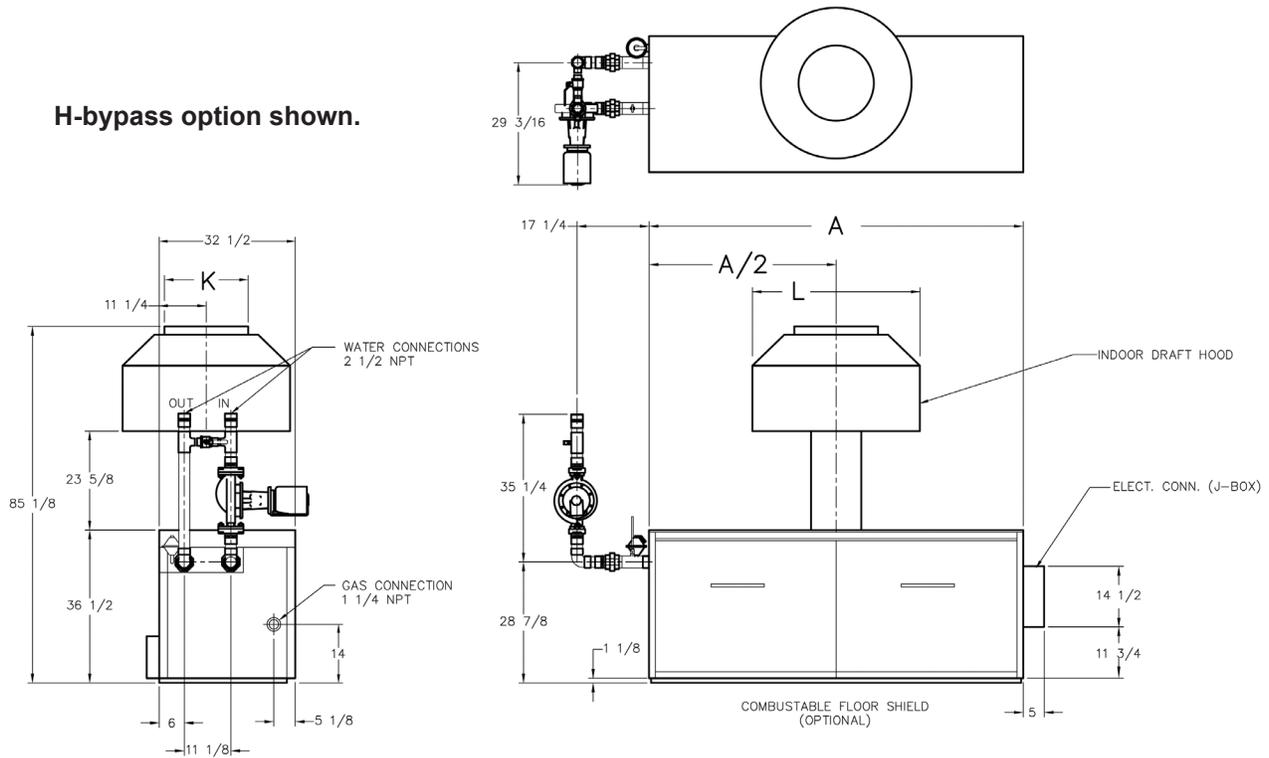
- B-22 Pump override
- C-5 Latching lockout module (CSD-1)
- E-4 Alarm package
 - 3" bell
 - 4" bell
- F-1 Flow switch on outlet
- F-9 Low water cut-off
- I-6 Temp control, 100°F max
- S-1 Low gas pressure switch, manual reset
- S-2 High gas pressure switch, manual reset
- _____
- _____

Regulatory Agency Requirements

- G-1 CSD-1 (factory mtd)
Exempt from CSD-1 as of 2004 edition
- G-15 CSD-1 field upgrade kit

Job: _____

H-bypass option shown.



Model No.	MBTUH Nat (x1000)* (kWh)		Width Inches (mm) A	Flue Dia. Inches (mm) K	Bell Dia. Inches (mm) L	Approx. Shipping Weight lbs. (kg)	Heater Amp Draw
	MTBU Input	MTBU Output					
P-1468	1467.0 (422)	1203.0 (352)	74-7/8 (1901)	18 (457)	36 (914)	1050 (476)	<12
P-1631	1630.0 (477)	1336.6 (391)	81-1/8 (2060)			1100 (499)	
P-1826	1825.0 (534)	1497.0 (439)	89-3/8 (2270)	20 (508)	40 (1016)	1190 (539)	

Ratings shown are for natural gas at elevations up to 2,000 feet. For elevations over 2,000 feet, reduce ratings at the rate of 4% for each 1,000 feet above sea level.

* For propane ratings, multiply natural gas values by 0.955.

Front-mounted pump is 3/4 HP, 120 VAC 1Ø 60 Hz, 11 amp.

The H-bypass design uses a pumped bypass with manual valves to control the inlet water temp to avoid condensation and scaling.

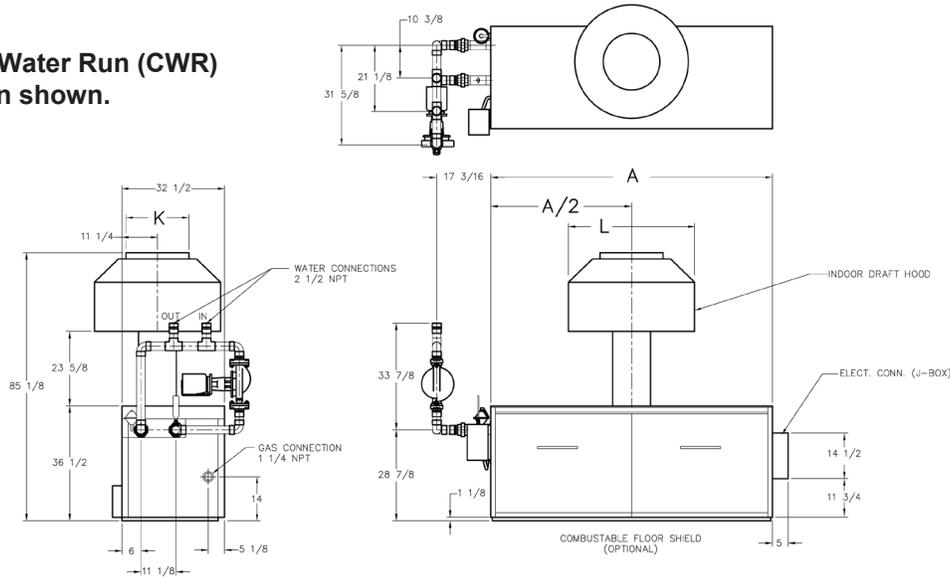
Primary/secondary piping is required for proper operation.

HEATER FLOW RATES with H-Bypass

Model No.	Loop Flow GPM (LPM)	Heater Flow GPM (LPM)
P-1468	35-55 (132-208)	85 (321)
P-1631	40-65 (151-246)	
P-1826	45-70 (170-264)	

Adjust flow to obtain 120°F outlet temperature.

Cold Water Run (CWR) option shown.



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Front-mounted pump is 3/4 HP, 120 VAC 1Ø 60 Hz, 11 amp.

The Cold Water Run bypass design uses a variable-speed injector pump to automatically control the inlet water temperature to avoid condensation and scaling, even when the pool water changes temperature rapidly.

Primary/secondary piping is required for proper operation.

Separate 120 VAC 1Ø or 240 VAC 1Ø power required for Cold Water Run control. The control provides 3-phase power to the injector pump.

Also requires P-47 Flange Kit for Injector Pump. The injector pump is included with the option, and ships loose for installation at the bypass inlet.

Cold Water Run Pump Data

Model No.	Heater Pump			P-45 Injector Pump*			
	Flow GPM (LPM)	ΔT °F (°C)	Pressure Drop (ft. hd.)	Flow GPM (LPM)	ΔT °F (°C)	Pump HP	Pump P/N
P-1468	90 (340)	27 (15)	14	60 (227)	40 (22.2)	1/3	951394
P-1631		30 (16.7)	14.5		45 (25)		
P-1826		34 (18.9)	15.4		50 (27.8)		

*Requires separate circuit breaker