

# GENERAL INFORMATION



## H SERIES

Hydronic Wall Heaters



412 shown



tested to:  US1995 standards



**READ CAREFULLY** - These instructions were written to help prevent difficulties that might arise during installation of this heater. Studying the instructions first may save you considerable time and money later. Observing the following procedures will cut the installation time to a minimum. King encourages you to save these instructions for future reference.

*Thank you for buying this King H series heater. It should provide years of trouble-free service and comfort to your home. Please inspect the package to ensure the heater coil and fan, with cover and screws to attach it to the wallbox, are included.*

### Here are a few tips in getting the heater installed correctly!

1. **LOCATION:** If possible find a location that is not on an outside wall - this will maintain the insulation value of your home and reduce cold air leaks that come from gaps in the outside wall. Mount the heater in a location that will not have furniture blocking the front of the unit within 2 feet - a corner wall is ideal. Blowing heat towards the coldest part of the room (like a window) is best. To heat the room evenly warm air needs to circulate freely without obstructions.
2. **BEDROOMS:** A good location for a heater in a bedroom is just to the inside of the door of that room, blowing heat towards a cold glass window. The thermostat should be located just above the light switch, with the heater in a stud bay over from the thermostat. Many times this *one stud bay over* is not possible due to very small bedrooms, where the thermostat will be in the same stud bay as the heater. Temperature control and accuracy will suffer in this instance due to the coils giving off convected heated air, the heated air moving up the wall where it will then effect the thermostat's sensors.
3. **LIVING ROOMS:** Mount the heater in a location that will not have furniture blocking the front of the unit within 2 feet. Often, a corner wall is ideal because it is a traffic area with less chance of furniture placement. Blowing heat towards the coldest part of the room (like a large window area) is best. Mount thermostat near a light switch for that room if it is in an open area.
4. **MOUNTING:** The heater should be located a minimum of 4 inches off a finished floor, although, to dramatically reduce the lint and dust intake, up to 10 inches off the floor. However, too high placement on a wall may change the visual appearance of the product. King further recommends placement 4 inches from any side wall longer than 18 inches, and 8 inches below a ceiling or shelf that protrudes more than 6 inches.
5. **THERMOSTATS:** Only King model HB / HBP or HW / HWP / HWPT-120 thermostats are designed to control this heater. Any other line voltage electric heat thermostats will not control the pump and fan in a sequential preheat start up, nor have a definite off for both fan and pump. Standard bi-metal electric heat thermostats are not designed for, and should never be used for, control of hydronic fan heating. A King H series thermostat should not, when possible, be mounted above the fan coil heater, instead off to the side, where the convective heat from the coils will not effect the temperature sensing when the fan heater is off. For best performance, pipes running to the heater (if they enter in to the thermostat's stud bay) should not have a total combined length (inlet / outlet) of over 10 feet, and, should not be closer than 16 inches in any direction to the thermostat's junction box in that stud bay. If the thermostat must be in the stud bay with the heater the thermostat should be mounted on the left side of the stud bay as that side has no heat fins thereby having the least impact on thermostat accuracy.

# INSTALLATION INSTRUCTIONS

Following are installation guidelines:

- Disconnect power at main panel.
  - Make certain all wiring is in accordance with all local codes.
  - Ensure units are properly grounded.
  - Heater voltage rating should be the same as supply load.
1. The heater should be located a minimum of 4 inches off a finished floor, although, to dramatically reduce the lint and dust intake, mount up to 10 inches off the floor. However, too high of placement on a wall may change the visual appearance of the product. King further recommends placement of 4 inches from any side wall longer than 18 inches, and 8 inches below a ceiling or shelf that protrudes more than 6 inches. Screws or nails can be used to secure the can to the studs. The wall can should take up the room of a standard 2 x 4 stud cavity. If deeper than a 2 x 4 stud wall make sure the can reveals itself outside the finished wall by 3/4". Make sure the "Up" sticker is clearly observed in the can and on the grill.
  2. Feed the power to the center of the can, with a maximum of 15 Amp circuit protection. Provide a 1/2" strain relief and follow all local and national electrical codes for wire sizing and proper connection. Aluminum wire will require special connectors and preparation to the connections for a safe connection.
  3. Feed both the water lines to the upper left corner of the can. Offset 5/8" threaded copper pipe fittings are provided for easy hook up, in or out of the box.
  4. Complete piping and bleed air out of coil for 5 minutes with system pump operating at maximum flow rate.
  5. Copper coils are manufactured to be used with potable water and pressures up to 125 psi. Copper tubing used in the coil is Alloy 122 made to ASTM-B-75 specifications. This is the same Coper used in homes for drinking water.
  6. Connect the electrical power to the motor leads selecting the speed required for the application. The white wire is the common lead, black is high speed and red is low speed. Use only two leads, white and black for high speed or white and red for low speed. Connect the green groundwire to the bare groundwire.
  7. A proper thermostat per heater should be used to maintain and provide the best comfort and energy efficiency from your King heaters. King requires the use of King models HW120, HWP120, and one timer thermostat per system, the HWPT120, as they were specifically designed for use with the heater. King thermostat models HB and HBP are also approved for use.
  8. Test fan coil for motor operation and check for leaks at pipe connections.
  9. Place grille on, using the 2 screws provided. Do not over tighten.

## WATER TEMPERATURE AND AIR FLOW RATES

MODEL*	FINS PER INCH	FT. OF WATER PRESSURE DROP @ 2 GPM	AMPS	RPM	CFM	BTU@2GPM	120°	140°*	160°*	180°	200°
H412 2/3	4	.36	.54	2000	80	High Speed	1,800	2,500	3,600	3,500	4,100
H412 2/3	4	.36	.51	1750	50	Low Speed	1,200	1,400	1,700	2,000	2,300
H412 3/4	8	.54	.54	2000	80	High Speed	2,200	3,100	4,000	4,800	6,100
H412 3/4	8	.54	.51	1750	50	Low Speed	1,200	1,800	2,400	3,000	3,800
H612 4/5	4	.36	.48	2550	120	High Speed	3,600	4,700	5,800	7,100	8,500
H612 4/5	4	.36	.40	1850	105	Low Speed	3,200	4,000	5,000	6,100	7,300
H612 6/8	8	.54	.48	2500	120	High Speed	4,100	6,000	7,600	9,100	10,500
H612 6/8	8	.54	.40	1850	105	Low Speed	3,700	5,200	6,500	7,900	9,600

\* Most common operating temperatures

**Electrical Circuit Sizing**  
Maximum 15 Amps  
circuit breaker or fusing



**CAUTION**

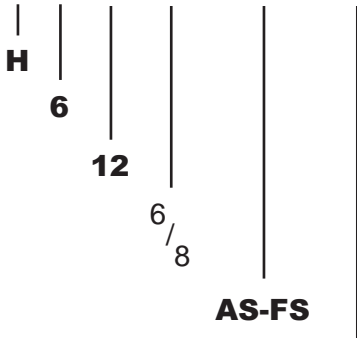
The heater should not be covered or blocked in any manner.

# INSTALLATION INSTRUCTIONS

**Specifications:**

**H Model Number Legend**

**H 6 12 6/8 AS-FS GW**



**GW** Grille White or Black color

**Electrical Circuit Sizing**

Maximum 15 Amps  
circuit breaker or fusing

**H** Series Hot Water

Number of copper tubes in coil

Voltage 120

6000 BTU heat output @ 140 Degree water input

8000 BTU heat output @ 160 Degree water input

Aqua Stat / Fan Switch

Inlet water temperature range: 100 to 200 Degree F

Power Supply: 110 to 125 Volt AC

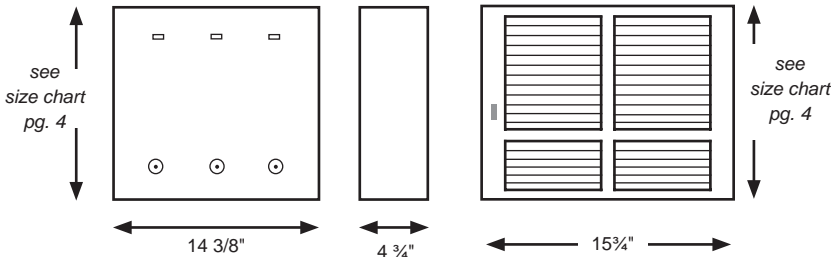
**Daily circulation is required if used on a potable water system.**

Use an HWPT120 thermostat for this.

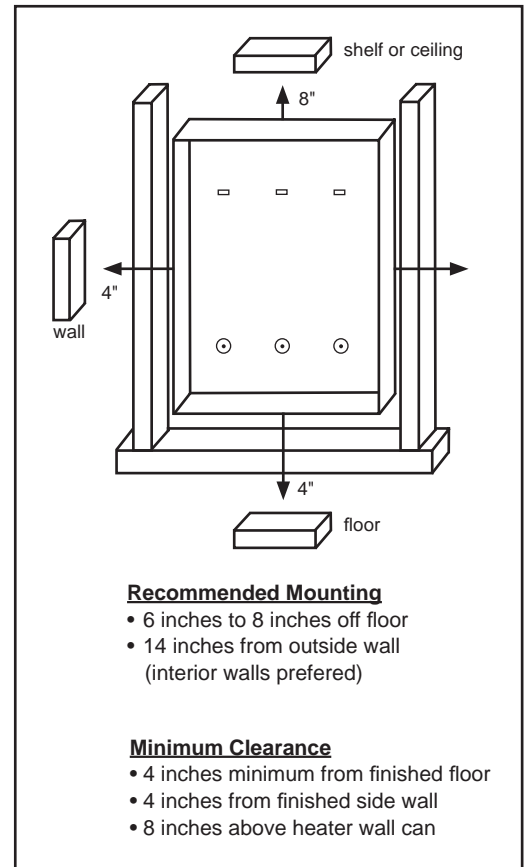
**Wall Can Front**  
see size chart page 4

Wall Can Side

**Louvered Grille**  
see size chart page 4



**Louvered Grille Depth**  
7/8"

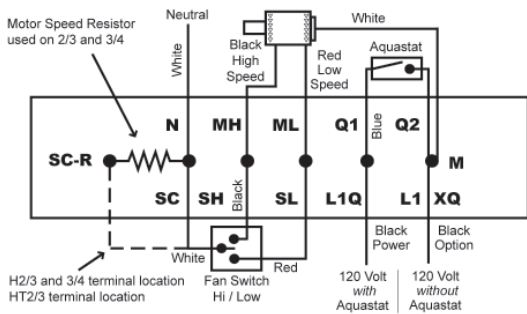


**Recommended Mounting**

- 6 inches to 8 inches off floor
- 14 inches from outside wall (interior walls preferred)

**Minimum Clearance**

- 4 inches minimum from finished floor
- 4 inches from finished side wall
- 8 inches above heater wall can



**LEGEND**

- SC - switch common
- SC-R - switch common 2/3 & 3/4
- SH - switch high speed
- SL - switch low speed
- MH - motor high lead
- ML - motor low lead
- M - motor common
- Q1 - aqua switch
- Q2 - aqua switch

- L1Q - power lead with aquastat
- L1XQ - power lead without aquastat

N - neutral lead

One year warranty from date of installation



# PRODUCT SELECTION

## H SERIES HYDRONIC FAN COIL HEATER

SIZE CHART						
UPC #093319	MODEL NUMBER*	BTU 140° / 160° (high speed)	VOLTS	CAN SIZE H x W x D	GRILLE SIZE H x W x D	WALL CAN
21090	H412 2/3-FS-GW	2,500 / 3,600	120	9½" x 14 3/8" x 4¾"	11" x 15¾" x 7/8"	HC9
21091	H412 3/4-FS-GW	3,100 / 4,000	120	9½" x 14 3/8" x 4¾"	11" x 15¾" x 7/8"	HC9
21081	H612 4/5-FS-GW	4,700 / 5,800	120	11" x 14 3/8" x 4 ¾"	12 ½" x 15 ¾" x 7/8"	HC11
21092	H612 6/8-FS-GW	6,000 / 7,600	120	11" x 14 3/8" x 4 ¾"	12 ½" x 15 ¾" x 7/8"	HC11

\* Aqua Stat not required when using a King hydronic thermostat. In-built aquastat is available by special order only, consult factory for price and availability.

## HYDRONIC THERMOSTATS

ELECTRONIC LINE POWERED 2-STEP HYDRONIC FAN COIL THERMOSTATS				
UPC #093319	MODEL NUMBER	DESCRIPTION	WT. (lbs.)	LIST PRICE
19048	HW120	120V 12A ELECTRONIC, 2 STEP - 3 WIRE	.7	\$109.45
19047	HWP120	120V 12A ENERGY STAR 2 STEP - 3 WIRE		\$138.46
19049	HWPT120	120V 12A ELECTRONIC 2 STEP, WITH PUMP TIMER		\$155.54

ELECTRONIC BATTERY POWERED 2 STEP HYDRONIC FAN COIL THERMOSTATS				
UPC #093319	MODEL NUMBER	DESCRIPTION	WT. (lbs.)	LIST PRICE
19050	HB	240/208V 12A SINGLE POLE, 2 STEP HYDRONIC, 3-WIRE	.7	\$99.83
19051	HBP	120/208/240V SINGLE POLE, 7-DAY PROGRAMMABLE THERMOSTAT		\$122.43

### Line Power Operated



**HW120**  
Part # 19048  
120V, 12.5 Amps



**HWP120**  
Part # 19047  
120V, 12.5 Amps  
Programmable



**HWPT120**  
Part # 19049  
120V, 12.5 Amps  
with timer  
Programmable

### Battery Operated



**HB**  
Part # 19050  
208 / 240V, 16 Amps



**HBP**  
Part # 19051  
120 / 208 / 240V, 16 Amps  
Programmable

