Warranty Information

Warranty Information

The warranties herein set forth are in lieu of all other warranties expressed or implied, and shall not apply to any accessory not part of the product. King Electrical Mfg. Company will repair or replace, without charge to the original owner, any product found to be defective or malfunctioning within the warranty period.

Heaters Warranty Period

One Year: EFW-MW-Series, EKB Garage Heater, HSB & HLB Hot Water Baseboards, K-Series Baseboard, KAWH-Series Heaters, KCA, KLA & KLI Cabinet Heaters, KCB, KDIA & KDBA Draft Barriers, KDS-Series Ceiling Heaters, KT-MW Kickspace, LB & SB Draft Barriers, MKT Series, OK-Series Radiant Heaters, 120V Portable Fan Heaters, 240V Portable Shop/Garage Heaters, 120V Portable Baseboards, RH Radiant Heater, RSH Radiant Heaters, Thermostats and Controls, TVR Mount, U-Series Pump House Heater, W-Series.

Two Year: H-Series Hydronic Fan Heaters, HI-Series Boiler Conversion Heaters, KBS Unit Heaters, KCV Cove Heaters, KTW In-Counter Heater, LPWV Vandal Resistant, PKB Portable Unit Heaters,

Three Year: CK & CKL Plenum heaters, PAW-SS Stainless Steel Heater, PCK Portable Heaters, WHF Series, WHF-HM High Mount Heater, WHFC Ceiling Heater, PAW-SS Stainless Steel Heater, GH and SKB Unit Heaters.

Five Year: CB Ceramic Baseboards, DAW-Series, KB Unit Heaters, KBP-Series, KCC & KCF Cabinet Heaters, KF & KFS Electric Furnaces, KFUH Unit Heaters, LPW-Series LPWA-Series, LPWC-Series, PAW-Series, PX-Series, SL-Series.

Heating Cable Warranty Period:

One Year: CWP & CWR, Thermostats and Controls.

Two Year: SR & SRP

Ten Year: TC &TCM, SC & SCM

Twenty Year: FC & FCM

High Velocity Drum Fan Warranty Period:

One Year: Direct Drive, Belt Drive

Warranty Terms: This warranty requires the owner or his agent install the equipment in accordance with the National Electrical Code, any other applicable heating or electrical codes and the manufacturer's installation instructions. It further requires that reasonable and necessary maintenance be performed on the unit. Failure of proper maintenance by owner will void the warranty in its entirety. The company is not liable for any actions it deems to be abuse or misuse of the product. The Company shall not be liable for consequential damages arising with respect to the product, whether based upon negligence, tort, strict liability or contract. No other written or oral warranty applies, nor any warranties by Representatives, Dealers, Employees of King or any other person. King Manufacturing can be contacted by phone at 800-603-5464, fax 206-763-7738 or website www.king-electric.com. The company's minimum liability shall not in any case exceed the purchase price for the product claimed to be defective.

In Case of Product Failure: Contact King Electrical Mfg. at 800-603-5464. The owner will be required to provide, within the designated warranty period, the following information: model number, date of purchase, and a complete description of the problem encountered with product. Upon receipt of the aforementioned, the company will reply to the owner within a period not to exceed fifteen (15) working days, and will provide the action to be taken by owner. The customer shall be responsible for all costs incurred in the removal or reinstallation of products, including, but not limited to labor costs, and shipping costs incurred to return products to King Manufacturing. At their discretion, King Manufacturing will decide to either repair or replace the product, with no charge to the owner, with return freight paid by King.

Technical Support: 206-762-0400 extension 2

How To Select The Right Size Heater

How To Select The Right Size Heater

Confirm Your Voltage

Before selecting an electric heater, determine if the power supply is 120 volt or 240 volt.

How to check your voltage:

- The most accurate way to check your voltage supply is with a voltmeter.
  WARNING: This test needs to be performed with the circuit breaker 'On'. If you are uncomfortable working with live electrical circuits, please consult an electrician.
- If you're replacing an old heater, identify voltage on the old heater label.
- Check your circuit breaker to identify either Single Pole 120 volt or Double Pole 240 volt.

Size Your Heater – Room Wattage Requirements

Simply follow the chart below to determine the wattage requirements for a particular room.

Step 1: Measure your room

Select the square footage closest to the room size you want to heat.

- Rooms with greater than average window space, increase wattage by 50%
- If wattage recommendation falls between two heaters, select the heater with higher wattage

Step 2: Age of Home

- Refer to the column with the age of your home.

General Requirements:

King Electric recommends approximately 6 watts per square foot for newer homes and 10 watts per square foot for older homes. It is recommended to add 2 watts per square foot for homes located in higher than average elevations or extreme cold climates.

Wattage Selection Guide

Square Footage of Room	Newer Home Watts* (6W/SqFt)	Older Home Watts**(10W/SqFt)
50	300	500
75	450	750
100	600	1000
125	750	1250
150	900	1500
175	1050	1750
200	1200	2000
225	1350	2250
250	1500	2500
275	1650	2750
300	1800	3000
325	1950	3250
350	2100	3500
375	2250	3750
400	2400	4000

(BTU = WATTS X 3.412)

*Newer home - Mostly 1980's to present, R19 walls, R30 floors and ceilings, standard windows thermal pane, 8 ft ceilings

**Older home - Prior to 1980, R11 walls, R19 ceilings, single pane windows, 9 ft ceilings

Select The Right Type Of Heater

How To Select The Right Type Of Heater

Fan heater or baseboard?

Space: A baseboard heater takes up more wall space than a fan-forced heater which can cause problems placing furniture. (For example: a 2250 Watt Pic-A-Watt® heater will provide as much heat as a 9 foot baseboard.)

Comfort: A fan-forced heater will heat a room within a few minutes whereas a baseboard will require 30 to 40 minutes. A fan-forced heater will also maintain a more even temperature because the fan will circulate air around the room. This reduces the severity of hot/cold temperature swings.

Noise: A baseboard heater has no moving parts and therefore is quieter than a fan heater. The small Pic-A-Watt® heater uses a squirrel cage blower which makes it almost inaudible.

Efficiency: A 1500 Watt baseboard uses the same amount of electrical power as a 1500 Watt fan heater. The difference is a fan heater gives more even heat throughout the room thereby reducing air stratification (hot air rising and not mixing with the cooler floor air). This process makes you feel cooler causing you to turn the baseboard thermostat to a higher temperature setting whereby it runs more often thus using more electric power than the same size fan heater. Every 1° a thermostat is turned up will raise a power bill 3.1%. As such, a baseboard set to 75°F will cost you 15.5% more than a fan heater set to 70°F.

Which fan heater to choose?

Use: If the heater will run often and be used as primary heating for the home King recommends using heaters with steel elements such as the Pic-A-Watt®. These elements carry a five year warranty and will hold up to the rigors of everyday use. For supplemental or occasional use open-coil elements work fine. If budgetary constraints are of primary importance open-coil heaters are the least expensive.

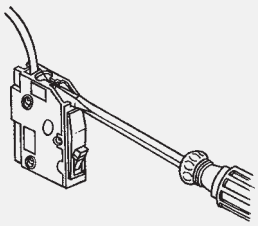
Noise: A propeller-type fan will make more noise than a squirrel cage fan. Open-coil elements make more noise than steel mass elements (Pic-A-Watt®) due to the rate of heat exchange with the air. For large rooms, two small heaters will be quieter than one large heater.

How To Size The Heating Circuit

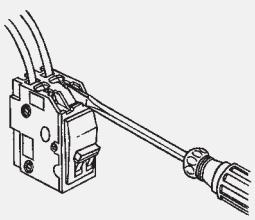
AMPS	VOLTS	WATTS	WIRE SIZE	CIRCUIT PROTECTION
12	120	1,440	#14/2	15 Amp – 1-Pole
16	120	1,920	#12/2	20 Amp – 1-Pole
12	240	2,880	#14/2	15 Amp – 2-Pole
16	240	3,840	#12/2	20 Amp – 2-Pole
24	240	5,760	#10/2	30 Amp – 2-Pole
32	240	7,680	#8/2	40 Amp - 2 Pole

1. According to the National Electric Code heating circuits are considered a continous load and therefore must be derated by 20%. (For example: a 20 Amp heating circuit cannot have more than 16 Amps ofload connected.)
2. 120 Volt heaters require 1-Pole circuit breakers; 240 Volt heaters need 2-Pole breakers.
3. Use 2-wire cable with ground (Romex™ or BX).
4. When placing multiple heaters on a circuit do not exceed the wattage listed for the corresponding wire and circuit breaker size. (For example: 2-1000W & 1-1500W, 240V heaters = 3500 Watts total. These 3 heaters would require 12/2 wire and a 20 Amp 2-Pole breaker if they were to all be placed on the same circuit. If more heaters are needed either run a new circuit or increase the wire and breaker size to accommodate the load.)
5. A 1500 Watt heater will cost the same to run whether it is 120 or 240 Volt. 240 Volt heating circuits are more common because, as the chart shows, you can place more heaters on a 20 Amp 240 Volt circuit (maximum of 3840 Watts) versus a 120 Volt circuit (maximum of 1920 Watts).
6. 120 and 240 Volt heaters are not interchangeable. A 240 Volt heater run at 120 Volt will produce 25% of the rated wattage. A 120 Volt heater run at 240 Volt will be destroyed and poses a severe fire hazard.
7. What voltage are my heaters?

One breaker indicates 120 Volt is feeding your heater.



Two breakers tied together indicates a 240 Volt circuit feeding your heater.



Total Amperage Rating Chart

Total Amperage Rating Chart

Power KW	120V (1)	208V (1)	208V (3)	240V (1)	240V (3)	277V (1)	480V (1)	480V (3)	600V (1)	600V (3)
0.3	2.50	1.45	0.83	1.25	0.72	1.09	0.63	0.36	0.50	0.29
0.4	3.34	1.92	1.11	1.67	0.97	1.45	0.84	0.49	0.67	0.39
0.5	4.17	2.41	1.39	2.09	1.21	1.81	1.05	0.61	0.84	0.49
0.6	5.00	2.89	1.66	2.50	1.45	2.17	1.25	0.72	1.00	0.58
0.75	6.25	3.61	2.09	3.13	1.81	2.71	1.57	0.91	1.25	0.72
0.8	6.67	3.85	2.23	3.34	1.93	2.89	1.67	0.97	1.34	0.77
1	8.34	4.81	2.78	4.17	2.41	3.61	2.09	1.21	1.67	0.97
1.2	10.00	5.77	3.34	5.00	2.89	4.34	2.50	1.45	2.00	1.16
1.25	10.42	6.01	3.47	5.21	3.01	4.52	2.61	1.51	2.09	1.21
1.4	11.67	6.73	3.89	5.84	3.38	5.06	2.92	1.40	2.34	1.35
1.5	12.50	7.22	4.17	6.25	3.61	5.42	3.13	1.81	2.50	1.45
1.6	13.34	7.70	4.45	6.67	3.86	5.78	3.34	1.93	2.67	1.54
1.75	14.59	8.42	4.87	7.30	4.22	6.32	3.65	2.11	2.92	1.69
2	16.67	9.62	5.56	8.34	4.82	7.22	4.17	2.41	3.34	1.93
2.25	18.75	10.82	6.25	9.38	5.42	8.13	4.69	2.71	3.75	2.17
2.5	20.84	12.02	6.95	10.42	6.02	9.03	5.21	3.01	4.17	2.41
3	25.00	14.43	8.34	12.50	7.23	10.83	6.25	3.61	5.00	2.89
4	33.34	19.23	11.12	16.67	9.64	14.44	8.34	4.82	6.67	3.86
4.5	37.50	21.64	12.50	18.75	10.84	16.25	9.38	5.42	7.50	4.34
5	41.67	24.04	13.90	20.84	12.05	18.05	10.42	6.02	8.34	4.82
6	50.00	28.85	16.68	25.00	14.45	21.66	12.50	7.23	10.00	5.78
7.5	62.50	36.06	20.84	31.25	18.06	27.08	15.63	9.03	12.50	7.23
8	66.67	38.47	22.23	33.34	19.27	28.88	16.67	9.64	13.34	7.71
9	75.00	43.27	25.01	37.50	21.68	32.49	18.75	10.84	15.00	8.67
10	83.34	48.08	27.79	41.67	24.09	36.11	20.84	12.05	16.67	9.64
12	100.00	57.70	33.25	50.00	28.90	43.33	25.00	14.45	20.00	11.56
14	116.67	67.31	38.91	58.33	33.72	50.54	29.17	16.86	23.33	13.49
15	125.00	72.12	41.69	62.50	36.13	54.16	31.25	18.06	25.00	14.45
18	150.00	86.54	50.02	75.00	43.35	64.99	37.50	21.68	30.00	17.34
20	166.67	96.16	55.58	83.34	48.17	72.21	41.67	24.09	33.34	19.27
24	200.00	115.39	66.69	100.00	57.80	86.65	50.00	28.90	40.00	23.12
25	208.34	120.20	69.48	104.17	60.21	90.26	52.09	30.11	41.67	24.09
30	250.00	144.23	83.37	125.00	72.25	108.31	62.50	36.13	50.00	28.90
35	291.67	168.27	97.27	145.84	84.30	126.36	72.92	42.15	58.34	33.72
40	333.34	192.31	111.16	166.67	96.34	144.41	83.34	48.17	66.67	38.54
45	375.00	216.35	125.06	187.50	108.38	162.46	93.75	54.19	75.00	43.35
50	416.67	240.39	138.95	208.34	120.43	180.51	104.17	60.21	83.34	48.17
55	458.34	264.43	152.85	229.17	132.47	198.56	114.59	66.24	91.67	52.99
60	500.00	288.47	166.75	250.00	144.51	216.61	125.00	72.25	100.00	57.80
66	550.00	317.31	183.20	275.00	158.77	238.68	137.50	79.39	110.00	63.51

(1) Single Phase, (3) Three Phase

Heater Care And Information

Taking Care Of Your Heating System

At the start of each heating season clean and inspect each heater. **It is extremely important to remember to turn off the power at the circuit breaker before attempting any installation, maintenance or repairs. Failure to do so may result in serious electrical shock, burns or possible death.** Remove the grille on fan heaters. Clean any dust or lint from inside the heater with a vacuum cleaner, compressed air or soft bristle brush. Check that the fan spins freely. Between 5-10 years you may want to upgrade your thermostat, as the sensing element may not be as accurate as when new. The most ac- curate thermostat is listed as an anticipated model. If, in the future, you decide to remodel or add rooms to your home, you won't have to worry about the size of your heating system. With electric heat you can add to the heating system, in large or small increments.

Zone Control

Thermostat settings are a matter of personal preference. A few days of adjustments will help you determine the setting that is comfortable for you. Most people keep their living quarters at 68 to 72ºF (20 to 22ºC) and sleeping areas at 65ºF (18ºC). For energy conservation and financial savings it is wise to set living area thermostats back at night, but not below 60ºF (16ºC).

Temperature Versus Cost

When setting your thermostat, you may want to consider the relative cost of various temperatures. The chart at right shows how much higher your heating bill may be if you like temperatures warmer than 70ºF (21ºC).

	-3.1%	+3.1%	+6.2%	+9.4%	+12.5%	+15.6%	+18.7%	+21.9%	+25.0%	+28.0%	+31.0%
69˚F	70˚F	71˚F	72˚F	73˚F	74˚F	75˚F	76˚F	77˚F	78˚F	79˚F	80˚F
20.5˚C	21.1˚F	21.6˚C	22.2˚C	22.7˚C	23.3˚C	23.8˚C	24.4˚C	25˚C	25.5˚C	26.1˚C	26.6˚C

Ohm's Law

The relationship between Wattage (heat) output and the applied Voltage of electric resistance heating elements is determined by a precise physical rule defined as Ohm's Law which states that the current in a resistance heating element is directly proportional to the applied Voltage. Ohm's Law is traditionally expressed as:

I = E/R

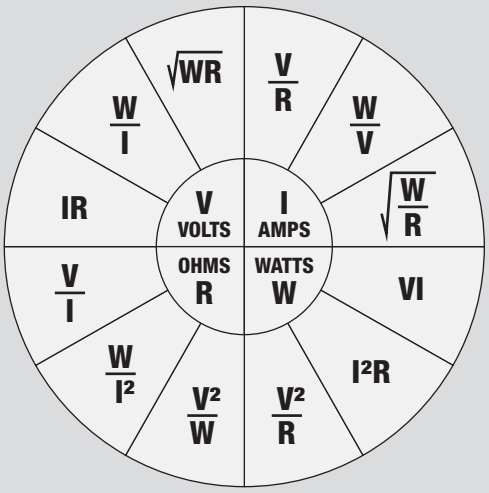
Where: ***I*** = Amperes (Current)
E = Voltage
R = Ohms (Resistance)

The same equation using the conventional abbreviation for voltage is:

I = V/R

Where: ***I*** = Amperes (Current)
V = Voltage
R = Ohms (Resistance)

An unknown electrical value can be derived by using any two known values in one of the variations of Ohm's Law.



VOLTS

$$Volts = \sqrt{Watts \times Ohms}$$

$$Volts = \frac{Watts}{Amperes}$$

$$Volts = Amperes \times Ohms$$

AMPERES

$$Amperes = \frac{Volts}{Ohms}$$

$$Amperes = \frac{Watts}{Volts}$$

$$Amperes = \sqrt{\frac{Watts}{Ohms}}$$

OHMS

$$Ohms = \frac{Volts}{Amperes}$$

$$Ohms = \frac{Watts}{Amperes^2}$$

$$Ohms = \frac{Volts^2}{Watts}$$

WATTS

$$Watts = Volts \times Amperes$$

$$Watts = Amperes^2 \times Ohms$$

$$Watts = \frac{Volts^2}{Ohms}$$

Commonly Asked Questions/Glossary

Commonly Asked Questions:

Q. Will the room heat up faster if I put the thermostat on 90 degrees when I get home?

A. No. The thermostat is just an on-off switch that is temperature sensitive. The heater is either on or off.

Q. My baseboards are on outside walls, should fan heaters be also?

A. No. A fan heater, recessed into an outside wall, will create extra heat loss and air leakage for that room. An inside wall, facing a cold window, is the best location.

Q. My thermostat is above my fan-heater. Why?

A. The fan heater blows warm air away from itself and into the room. By the time the warm air has recirculated and reached the thermostat above the heater, a comfortable room temperature has been achieved.

Q. Will my electric bill be lower if I use 120 volt heaters?

A. No. Same size 120 volt and 240 volt heaters will use the same amount of power, measured in watts or kilowatts. Your electric company charges by kilowatt hours.

Q. Should I clean my heater?

A. Yes. Once a year you must clean and inspect your heaters. Please refer to the section “Taking Care of Your Heating System” on the previous page. You may request a copy of the operation & maintenance for your heater if you have lost it.

Q. Why does my new heater produce smoke when I turn it on?

A. In the manufacturing process, a light lubricant is used, which will burn when the heater is energized. The smoke will stop after the heater has fully heated. There is no cause for alarm. It is recommended to open a window during initial operations.

Q. If I need to replace my heater, can I use a higher wattage heater?

A. Your electrical system was sized for the original heater’s wattage. A smaller wattage heater would be OK, but a larger wattage heater may create a hazard.

Q. Are King heaters actually made in Seattle, Washington?

A. Yes. Since 1958 we have made quality residential, commercial and industrial heating products in the same location.

Glossary

Open Coil Element: An open-coil element using Nickel-Chromium wire that can handle very high temperatures.The coiled wire maximizes the surface area for efficient heat transfer.

Dual Open Coil Element: Same as above, except the element wattage can be reduced in half by cutting one of the element wires.

Pic-A-Watt Element: The core of the King heating line. Developed in 1988 it has worked flawlessly ever since. It is made from steel elements brazed onto steel plate fins making for a long-lasting maintenance-free heater. The multiple wattage feature allows the exact wattage needed for any room to be selected.

Ceramic Element: This core is made of extruded ceramic insulators that increase thermal mass helping improve even heating. The liquid-free design increases safety.

Spiral Steel Fin Element: These steel element tubes have continuous fins that spin to create one of the highest quality, longest- lasting elements on earth.

C-Frame Motor: C-Frame motors are inexpensive and commonly used in appliances. King motors contain a large oil reservoir that helps prolong the motor life and reduce maintenance.

Efficiency Motor: A unit bearing motor is a heavy-duty long-lasting motor. It uses a fraction of the energy that a C- Frame motor does, thereby saving you money on heating bills. This motor typically runs 15–20 years and never requires oiling. It is either long-lasting cast iron or standard economy-cast aluminum.

Aluminum Fan Blade: King uses aluminum fan blades which are noncombustible. The fan is an impeller type: it draws room air into the heater and then blows out heated air.

Squirrel Cage Blower: A long cylindrical blower that keeps the heater quiet. Recommended for areas where heater noise would be unwelcome, such as bedrooms and dens.

Built-In Thermostat: The heater comes with factory installed thermostat.

Smart Limit Protection: Patented safety system shuts the heater off if an overheat condition occurs. Reset is allowed by turning off the thermostat.

Stainless Steel: An excellent 304 grade, corrosion- resistant stainless steel. Perfect for chemical or saltwater environments.

Radiant Heat: A radiant heater provides sun-like warmth. The heat radiates from the heating element warming objects that are nearby.

Convection Heat: This type of heater has no fans, instead heating by the natural process of warm air rising off the element. Place on outside walls to prevent cold window drafts.

Hydronic: The newest heaters in the King product line, using the warmth of hot water circulating from a home’s hot water tank or boiler.

Quiet Running: The quietest heaters in the King product line.

A Brief History

1956: In 1956 the electricity industry launched the "Live Better Electrically" (LBE) campaign, featuring a young Ronald Reagan touting the benefits of clean electricity, with the goal of converting American homes to 100% electric power.

1958: By 1958, electric heat was seen as a new frontier. Robert E. Wilson, founder of King Electrical MFG Co. wanted to be part of this new revolution and saw the opportunity to bring high quality all electric heating products to the market. Typical heating systems (coal, oil, and kerosene) were usually dirty, smoky and smelled terrible. Electric heat was the new, clean, flameless heating system, eliminating foul-smelling fuels and requiring no maintenance. After a successfully landing a military housing contract to outfit 5,000 military family homes, King's electric baseboard heater was born. The public embraced it and millions of homes replaced their huge basement furnace with small baseboard heaters under the windows.

1963: Business was booming and soon KING outgrew its small factory location in South Park, a south Seattle suburb. Seattle had just hosted the 1962 World's Fair giving millions of Americans their first look at the Pacific Northwest. After the fair one of the international pavilion buildings was moved to a lot close to KING; offices were added and the new KING factory was born.

1968: By 1968, over 30 different manufacturers of electric heat had launched into the business. Many innovations came and went, but only the strongest would survive. King introduces the KB unit heater and KCC cabinet heater product lines.

1970s: KING continued to expand distribution by adding warehouses across the United States to expedite delivery to a rapid growing market share. The international market steadily increased and several large distributors were set up in Canada, South America, and various other countries. King introduces the KFS electric furnace product line.

1984: The first small fan heaters (W series) were developed, again shifting the way Americans heat their homes. With improved air circulation and a compact design, these heaters were quickly becoming the industry standard.

A Brief History

1986: Everything changed with the invention of the Pic-A-Watt® series of heaters. A new class of heaters, that allowed customers to select the exact wattage, tailoring the heater to an area's specific heating requirements. An industry first.

Pic-A-Watt
Selectable Wattage Element ®

1999: King develops and introduces the soon to be patented Smart Limit Protection (SLP) safety limit. The safety standard of the industry today.

SMART SLP® LIMIT PROTECTION

2007: A big year for KING. Dean Wilson formerly with GE is named CEO, and daily management of the business is now run by brothers Dean, Brad and RJ Wilson. As most competitors move production offshore, KING makes the decision to significantly invest in new automated equipment to keep production in the USA. The C5 Tourette press is purchased allowing for 24/7 sheet metal production. King introduces line of electronic thermostats, the first thermostats in the market designed and built by a heating manufacturer.

2008: King Electric expands product line to include fan-forced hydronic heating.

HYDRONIC

2010: Construction is finished on 40,000 sqft warehouse and distribution center in Seattle, WA. King launches comprehensive line of Electric Heating Cables.

2013: King launches new industry leading line of Garage Heaters, effectively creating a new category for the electric heat market. King purchases second C5 machine, effectively doubling sheet metal production capacility.

2015: King launches ECO2S 2-Stage Heaters – ECO2S Works Smarter, Not Harder. KING launches the ATMOZ WIFI, connected thermostats with smart phone app control, for line voltage heaters.

2018: King Celebrates our 60 Year Anniversary of Made in America Comfort.

We believe experience matters.