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TOUGH TOOLS, HALF PRICE

Technical Support and E-Warranty Certificate

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KEROSENE HEATER

MODEL:ZB-K70/ZB-K175/ZB-K215

We continue to be committed to provide you tools with competitive price.

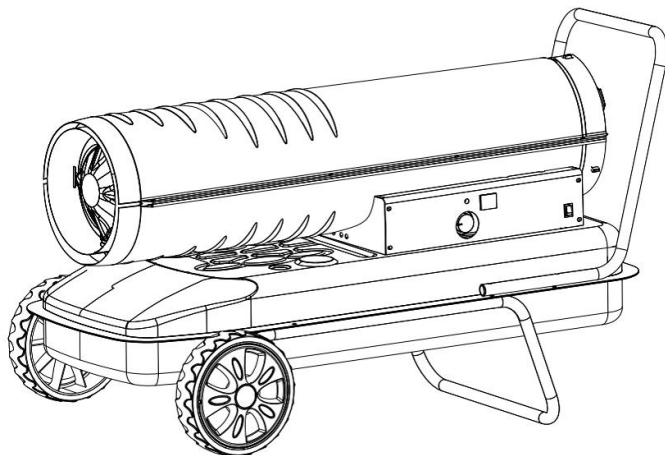
"Save Half", "Half Price" or any other similar expressions used by us only represents an estimate of savings you might benefit from buying certain tools with us compared to the major top brands and does not necessarily mean to cover all categories of tools offered by us. You are kindly reminded to verify carefully when you are placing an order with us if you are actually saving half in comparison with the top major brands.

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NEED HELP? CONTACT US!

Have product questions? Need technical support? Please feel free to contact us:

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This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

CONSUMER: Retain this manual for future reference.

IMPORTANT: Read and understand all of the directions in this manual before assembling, starting, or servicing the heater. Improper use of this heater can cause serious injury. Keep this manual for future reference. **Not suitable for the use of wood floors or other combustible materials.**

 DANGER GENERAL HAZARD WARNING:


Be sure to comply with the instructions and warnings provided with this heater, or death, serious bodily injury and property loss, or damage from the hazards of fire, explosion, burn, asphyxiation, and carbon monoxide poisoning can result.


Only people who understand these instructions should use or service this heater.

If you need heater information such as an instruction manual, labels etc; contact the dealer or manufacturer.

 DANGER NOT FOR USE IN NON-ADEQUATELY VENTILED ENCLOSED SPACES.

 WARNING NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING OR WHILE CONNECTED TO A POWER SOURCE

 WARNING Fire, burn, inhalation, and explosion hazard. Keep combustibles, such as building materials, paper, or cardboard, a safe distance from the heater, as these instructions recommend. Never use the heater in spaces that contain products such as gasoline, solvents, paint thinners, dust particles, volatile or airborne combustibles, or any unknown chemicals. This is an unvented portable heater. It uses air (oxygen) from the area in which it is used. Adequate combustion and ventilation air must be provided. Refer to ventilation on Page 16.

 WARNING Do not operate this heater until you have read and thoroughly understand these safety and operating instructions. Failure to comply with the precautions and instructions provided with this heater can result in death, serious bodily injury, property loss or damage from fire hazards, soot production, explosion, burns, asphyxiation or carbon monoxide poisoning. Only persons who can read and understand these instructions should use or service this heater. Not for use in the home or recreational vehicles.

⚠️ WARNING Electrical Safety The owner is responsible for checking this electrical product before use to ensure it is safe. You must inspect power cables, plugs, sockets, etc, for signs of wear or damage. You must ensure this electric shock risk is minimized by installing appropriate safety devices. The main distribution board should incorporate a residual current circuit breaker (RCCB). We also recommend that a residual current device is used (RCD). An RCD is Particularly important for mobile devices that are connected to a supply without an RCCB. Any fault rectification or electrical work, including the connection of a plug must be carried out by a qualified electric.

You must also comply with electrical safety requirements, including the Electricity at Work Act 1989, which requires portable electrical appliances used on business premises to be PAT tested annually. The Health & Safety at Work Act 1974 places responsibility for the safe condition of electrical appliances upon owners. Power cables and plugs should always be regularly inspected for safety. If in doubt about electrical safety, you must consult a qualified electrician.

Safety Information

⚠️ DANGER Indicates an imminently hazardous Situation which, if not avoided, WILL result in death or serious injury.

⚠️ WARNING Indicates an potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

⚠️ CAUTION Indicates an potentially hazardous Situation which, if not avoided, MAY result in minor or moderate injury.

This is a Kerosene (1-K Diesel) directed-fire forced air heater. It is primarily intended for temporarily heating buildings under construction, alteration, or repair. Directed-fired means that all of the combustion products of the heater enter the heated space. This appliance is rated at 98% combustion efficiency but does produce small amounts of carbon monoxide. Carbon monoxide is toxic.

⚠️ DANGER Carbon Monoxide poisoning may lead to death!

Humans can tolerate small amounts of carbon monoxide, and precautions should be taken to provide proper ventilation. According to this manual,

failure to provide proper ventilation can result in death. Early signs of carbon monoxide poisoning resemble the flu. Symptoms of improper ventilation are:

*** Headache * dizziness * burning of the nose and eyes
* nausea * dry mouth * sore throat ***

For optimal performance of this heater, it is strongly suggested that 1-K kerosene be used, 1-K kerosene has been refined to virtually eliminate contaminants, such as sulfur. Which can cause a rotten egg odor during the operation of the heater, However, #1 or #2 fuel oil - diesel may also be used if 1-K kerosene is not available. Be advised that these fuels do not burn as clean as 1-K kerosene, and care should be taken to provide more fresh air ventilation to accommodate any added contaminants that may be added to the heated space. Use of #1 or #2 fuel oil may result in more periodic maintenance.

⚠️ WARNING Risk of indoor air pollution!

-Use this heater only in well-ventilated areas! Provide at least a three-square-foot (2800 sq cm) outside air opening for every 29KW/hr) heater rating.

-Carbon Monoxide Poisoning. Early signs of carbon monoxide poisoning resemble flu-like symptoms such as headaches, dizziness, and/or nausea. If you have these symptoms, your heater may not be working properly.

-Get fresh air at once! Have the heater serviced. Some people are more affected by carbon monoxide than others. These include pregnant women, those with heart or lung problems, anemia, or those under alcohol or at high altitudes.

⚠️ WARNING Risk of burns / fire / explosion!

-NEVER use fuels such as gasoline, benzene paint thinners, or other oil compounds in this heater(RISK OF FIRE OR EXPLOSION)

-NEVER refill the heater's fuel tank while the heater is operating or still hot. This heater is EXTREMELY HOT While in operation.

-Keep all combustible materials away from this heater.

-NEVER block the air inlet or air outlet of the heater.

-NEVER use ductwork in front or at the rear of the heater.

-NEVER move or handle the heater while still hot.

- NEVER transport a heater with fuel in its tank.
- If equipped with a thermostat, the heater may start anytime.
- ALWAYS locate the heater on a stable and level surface.
- ALWAYS keep children and animals away from the heater.
- Bulk fuel storage should be a minimum of 762cm from heaters, torches, portable generators, or other ignition sources. All fuel storage should be in accordance with federal, state, or local authorities jurisdiction.
- NEVER use this heater in living or sleeping areas.
- NEVER use this heater where flammable vapors may be present.

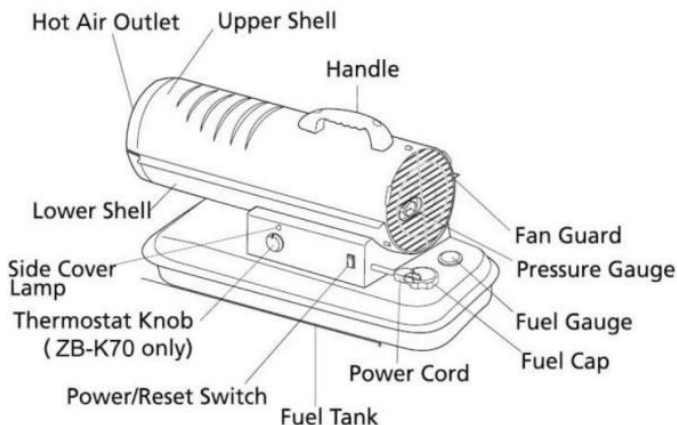
⚠ WARNING Risk of electric shock!

- Use only the electrical power (Voltage and frequency) specified on the model plate of the heater. Use only a local correct plug, grounded outlet and extension cord.
- ALWAYS install the heater so that it is not directly exposed to water spray, rain, dripping water, or wind.
- ALWAYS unplug the heater when not in use.

Minimum clearance from combustibles:

| Orientation | ZB-K70 | ZB-K175 | ZB-K215 |
|-------------|--------|---------|---------|
| Top (cm) | 125 | 125 | 125 |
| Side (cm) | 125 | 125 | 125 |
| Front (cm) | 250 | 250 | 250 |

Features



Feature1. Model ZB-K70

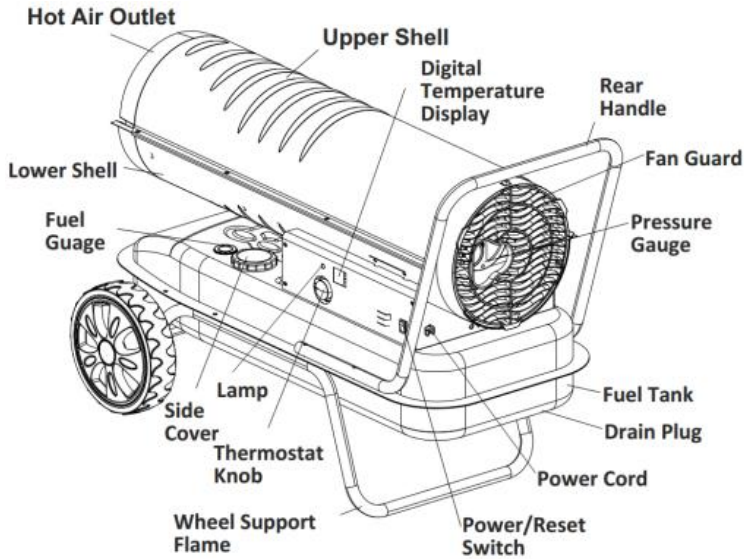


Figure 2. Model ZB-K175 / ZB-K215

Specifications

| Model | ZB-K70 | ZB-K175 | ZB-K215 |
|---------------------------|------------|------------|------------|
| Heat Output (btu) | 70000 | 175000 | 215000 |
| Fuel Consumption (Gal/Hr) | 0.53 | 1.32 | 1.62 |
| Fuel Tank Capacity (Gal) | 5 | 13.5 | 13.5 |
| Pump Pressure (Kpa/psi) | 31.0/4.5 | 48.0/7.0 | 52.0/7.5 |
| Power Supply (V/Hz/A) | 120/60/1.8 | 120/60/3.5 | 120/60/3.5 |
| Phase | single | single | single |
| Net Weight (kg) | 12.9 | 23.54 | 23.84 |

Specifications subject to change without notice

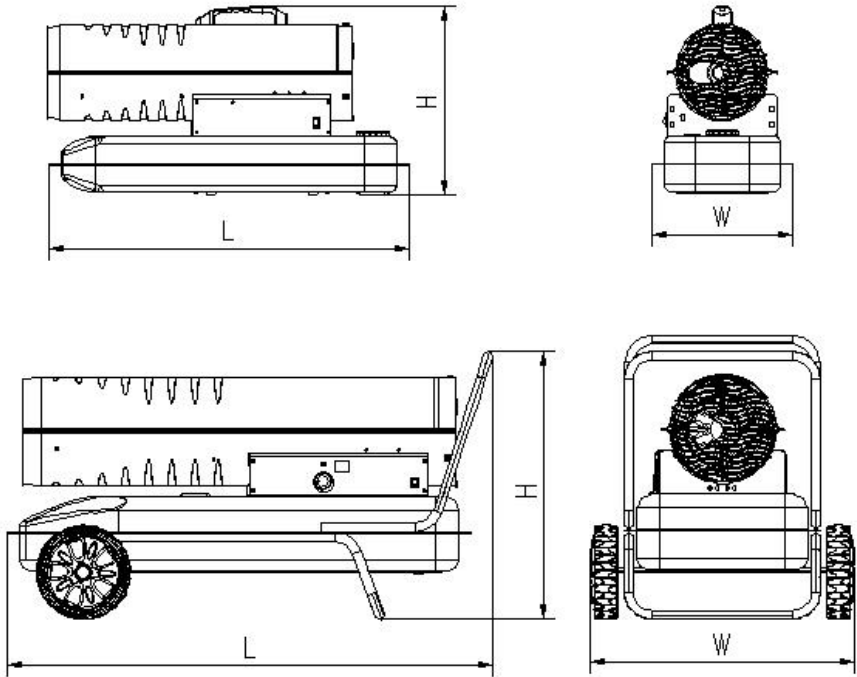


Figure 3. Product Dimensions

| | ZB-K70 | ZB-K175 | ZB-K215 |
|------------------|--------|---------|---------|
| L (mm) | 770 | 1040 | 1040 |
| W (mm) | 290 | 560 | 560 |
| H (mm) | 395 | 600 | 600 |

Unpacking

Remove the heater and all of the packing materials from the shipping carton.

NOTE: Save the box and packing materials for future storage.

Check the chart below to ensure you have all the parts required to assemble your heater.

Assembly

| | ZB-K70 | ZB-K175 | ZB-K215 |
|---------------------|--------|---------|---------|
| Wheel support frame | / | YES | YES |
| Wheel (2 pieces) | / | YES | YES |
| Rear Handle | / | YES | YES |
| Axle | / | YES | YES |
| Top Handle | YES | / | / |
| Screws & Nuts (A) 2 | YES | / | / |
| Screws & Nuts (B) 6 | / | YES | YES |
| Cotter Pins,Washers | / | YES | YES |

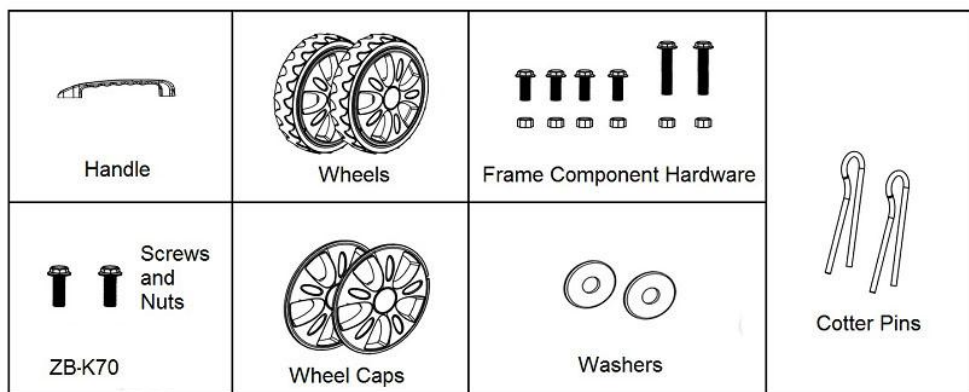


Figure 4. Hardware Components

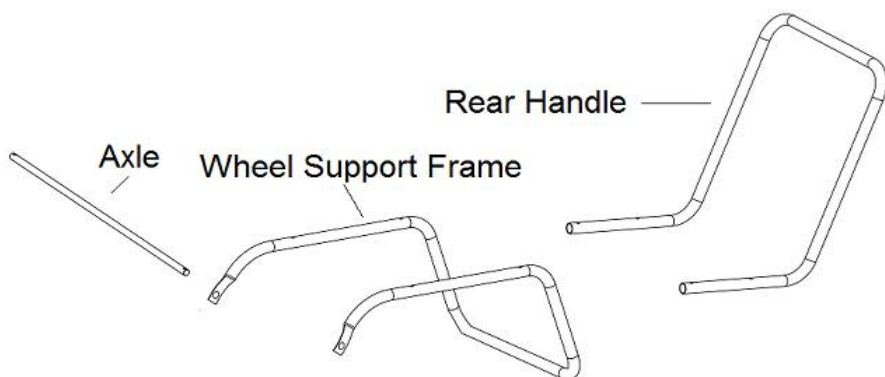


Figure 5. Frame Components, Models ZB-K175/ZB-K215

MODELS ZB-K70 ONLY

-Tools required: Medium Phillips screws driver.

ASSEMBLING HANDLE

- 1.Align the holes in the upper housing with the 2 holes in the handle as shown in Figure 6.
- 2.Insert and tighten screws securely with screw driver.

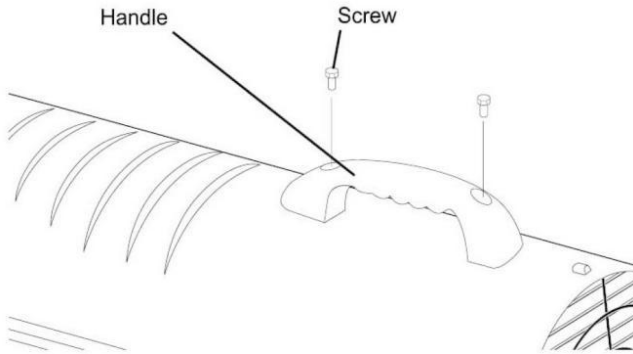


Figure 6. Handle Mounting, Model ZB-K70

MODELS ZB-K175/ZB-K215 ONLY

-Tools required: Medium Phillips screw driver, 5/16" open end or adjustable wrench, needle nose pliers.

ASSEMBLING FRAME AND WHEELS

1. Slide the axle through holes in the wheel support frame.
2. Slide Wheels onto each axle, ensuring that the valve stem (if pneumatic) is to the outside (see Figure 7.)
3. Slide flat washers (L) onto the axle past the small hole. Insert the cotter pin in the axle hole and bend the pin's legs with needle nose pliers to secure.
4. Place the heater on the assembled frame, ensuring that the air inlet end is by the wheels and that the mounting holes on the tank flange of the heater align with the holes in the frame.

Take the rear handle, align the mounting holes with the corresponding holes in the tank flange/wheel frame, slide a screw through the holes, and loosely attach a nut. Repeat for the other 2 holes, then fully tighten all 6 screws and nuts.

CAUTION

Do not operate heater without support frame fully assembled to tank.

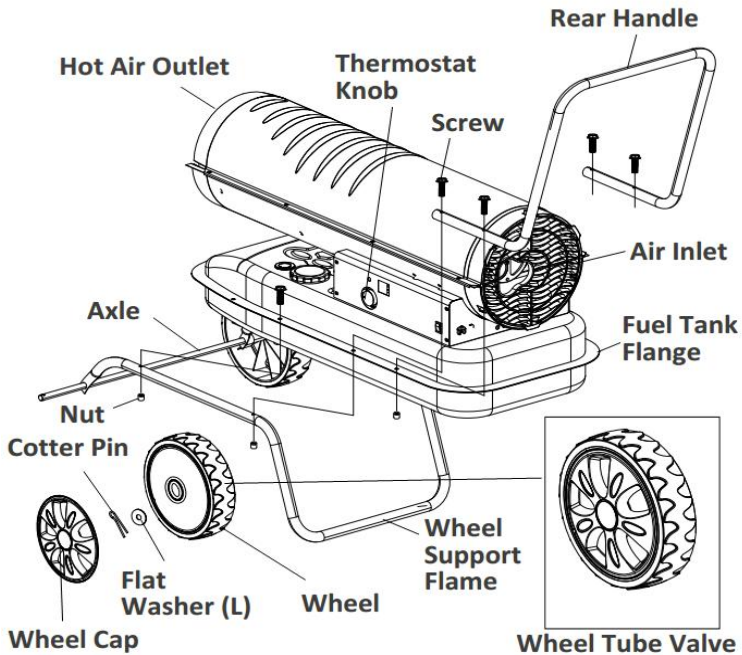


Figure 7. Assembly of Models ZB-K175/ZB-K215

Operation

Kerosene (1-K Diesel)

For optimal performance of this heater, it is strongly suggested that 1-K kerosene be used. 1-K kerosene has been refined to virtually eliminate contaminants, such as sulfur, which can cause a rotten egg odor during the operation of the heater. However, #1 or #2 fuel oil - Diesel may also be used if 1-K kerosene is not available. Be advised that these fuels do not burn as clean as 1-K kerosene, and care should be taken to provide more fresh air ventilation to accommodate any added contaminants that may be added to the heated space. Using diesel fuel can cause excess soot production.

DO NOT use any fuel that is not approved above.

NOTE: Kerosene (1-K Diesel) should only be stored in a blue container that is clearly marked “Kerosene (1-K Diesel)”. Never store Kerosene (1-K Diesel) in a red container. Red is associated with gasoline.

-NEVER store Kerosene (1-K Diesel) in the living space. Kerosene (1-K Diesel) should be stored in a well ventilated area outside the living area.

-NEVER use fuel such as gasoline, benzene, alcohol, white gas, camp stove fuel, paint thinners, or other oil compounds in this heater (THESE ARE VOLATILE FUELS THAT CAN CAUSE A FIRE OREXPLOSION).

-NEVER store Kerosene (1-K Diesel) in direct sunlight or near a source of heat.

-NEVER use Kerosene (1-K Diesel) heat has been stored from one season to the next. It deteriorates over time.

OLD Kerosene (1-K Diesel) WILL NOT BURN PROPERLY IN THIS HEATER.

Use diesel in the heater. 1-K Kerosene is a suitable substitute.

THEORY OF OPERATION

Fuel System: This heater is equipped with an air pump that operates off of the electric motor. The pump forces air through the air line connected to the fuel tank, drawing fuel to the nozzle in the burner head. Air also passes through the nozzle where it mixes with the fuel and is sprayed into the combustion chamber in a fine mist.

Quick-Fire Ignition: A transformer sends high voltage to a two-pronged spark plug. The spark ignites the fuel/air mixture as it is sprayed into the combustion chamber.

Air System: A fan is turned by the heavy duty motor, which forces air around and into the combustion chamber, where it is super-heated and forced out the front of the chamber.

Temperature Limit Control: This heater is equipped with a temperature limit control designed to turn it off should the internal temperature rise to an

unsafe level. If this device activates and turns your heater off, it may require service.

You can start your heater once the temperature falls below the reset temperature.

| MODELS | Internal Shut-Off Temp. Plus/Minus 10 Degrees | Reset Temperature Plus/Minus 10 Degrees |
|---------|--------------------------------------------------|--------------------------------------------|
| ZB-K70 | 176°F/80°C | 176°F/80°C |
| ZB-K175 | 176°F/80°C | 176°F/80°C |
| ZB-K215 | 176°F/80°C | 176°F/80°C |



Figure 8. Temperature control switch

Normally closed diagram

The contact is disconnected when the sensing temperature exceeds the rated temperature. For example, the line is disconnected when the sensing temperature exceeds 80 degrees.

Electrical System Protection: The heaters’ electrical system is protected by a circuit breaker that protects the system components from damage. If the heater fails, check the fuse first, and replace if necessary.

| | | |
|------------|------------------------|-----|
| FUSE TYPE: | ZB-K70/ZB-K175/ZB-K215 | KSD |
|------------|------------------------|-----|

Flame Sensor: The heater uses a photocell to see the flame in the combustion chamber. Should the flame extinguish, the sensor will stop the electrical current, and the heater will shut off.

FUELING THE HEATER

CAUTION NEVER FILL THE FUEL TANK INDOORS. ALWAYS FILL FUEL TANK OUTDOORS.

BE SURE THE HEATER IS ON LEVEL GROUND WHEN FUELING, AND NEVER OVERFILL THE FUEL TANK.

⚠ WARNING NEVER FILL THE FUEL TANK INDOORS. ALWAYS FILL FUEL TANK OUTDOORS.

BE SURE THE HEATER IS ON LEVEL GROUND WHEN FUELING, AND NEVER OVERFILL THE FUEL TANK.

It is always a good idea to fire the heater outdoors for the first time. This will allow any oils used in the manufacturing process to be burned off in a safe environment. This initial burn should last at least 10 minutes.

VENTILATION

Risk of indoor air pollution. Use heater only in well ventilated areas.

Always provide a fresh air opening in the heated space of at least three square feet (2800 sq.cm) for each 29KW/hr of heater output. Provide a larger opening if more heater will require.

-a two-car garage door raised 15.24cm (6 inches)

-a single-car garage door raised 22.86cm (9 inches)

-TWO, 76.2cm (30 inches) windows raised 38.1cm (15 inches)

TO START THE HEATER

1. Fill the tank with Kerosene (1-K Diesel) until fuel gauge point to "F"

2. Be sure fuel cap is secure.

3. Plug power cord into the local correct plug. Grounded extension cord and plug extension cord into three prong 110-120V grounded outlet. The extension cord should be at least six feet (1.8 meters) long.

Extension cord wire size requirements are as follows:

-6 to 10 feet (1.8 to 3 meters), use 18 AWG wire.

-11 to 100 feet (3.4 to 30.4 meters), use 16 AWG wire.

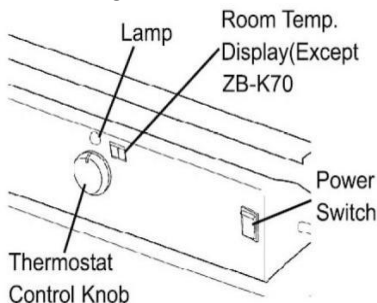
-101 to 200 feet (30.8 to 61 meters), use 14 AWG wire.

4. Turn the thermostat control knob to the desired temperature setting (ZB-K70/ZB-K175/ZB-K215 only). The setting range is from 40°F to 110 °F. Push the power switch to the "ON" position (Figure 9). The power indicator lamp and room temperature display (ZB-K175/ZB-K215 only) will light, and the heater will start.

NOTE: The room temperature display (ZB-K175/ZB-K215 only) will indicate the following:

-When the room temperature is less than 0°F, the display will show “LO.” The thermostat may be set too low if the heater does not fire. Turn the control knob to a higher setting until the heater fires; if the heater still does not start, push the power switch to “OFF”, then back to “ON”. If the heater still does not fire, see Troubleshooting Guide on page20-21

NOTE: The electrical components of this heater are protected by a fuse mounted on the PC board. If the heater fails to fire, check the fuse and replace it if necessary. Also, check the power source to ensure the proper voltage is being provided to the heater.



ZB-K70/ZB-K175/ZB-215

Figure 9. Control panel for all models

TO STOP THE HEATER

Simply turn the power switch to “OFF” position and unplug the power cord.

TO RESTART THE HEATER

- 1.Wait 10 seconds after shutting off the heater.
- 2.Turn the power switch to “ON” position.
- 3.Be sure to follow all starting procedure precautions.

ELECTRICAL OUTLET

⚠ WARNING Shock Hazard !

- Never plug an appliance with more than a 5 amp rating into this outlet.
- Always keep the outlet covered when not in use.

LONG TERM STORAGE

Drain Fuel Tank

- 1.For models ZB-K70, drain fuel through the fuel cap opening using an approved siphon. For models ZB-K175/ZB-K215, drain fuel through the Drain Plug at the bottom of the fuel tank.
- 2.To remove the Drain plug (ZB-K175/ZB-K215). Pull the plug grip downward and remove the seal head from the drain hole tank(see Figure 9).

3. Using a small amount of Kerosene (1-K Diesel). Rinse and swirl the Kerosene (1-K Diesel) inside of the fuel tank. Empty the tank fully.

4. To replace, push the drain head fully into the drain hole and secure by pushing the seal cap fully into the head hole (see Figure 10).

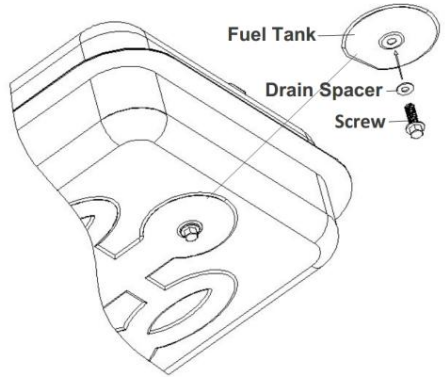


Figure 10. Drain Plug Removal

IMPORTANT: Never store leftover Kerosene (1-K Diesel) over the summer. Using old fuel can damage your heater. Store heater in a dry, well-ventilated area.

Be sure that the storage area is free of dust and corrosive vapors. Repack the heater in the original shipping material. Keep the Users Manual in an easily accessible place.

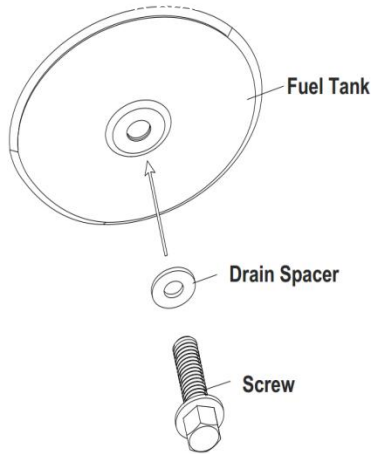


Figure 11. Drain Plug Reinstall

Maintenance

⚠ WARNING Never service heater while it is plugged in or while hot!

Use only original equipment replacement parts. Using alternate or third-party components can cause unsafe operating conditions and will void your warranty.

We suggest following a maintenance schedule as follows:

FUEL/FUELTANK

Flush every 200 hours of operation or as needed. Do not use water to flush the tank. Use fresh Kerosene (1-K Diesel) only.

AIR FILTERS:

The air intake Filter should be replaced or washed with soap and water and dried thoroughly every 500 hours of operation, or less, depending on conditions.

The output and lint Filter should be replaced every 500 hours of operation, or less, depending on conditions.

NOTE: Use of Kerosene (1-K Diesel) may require additional maintenance.

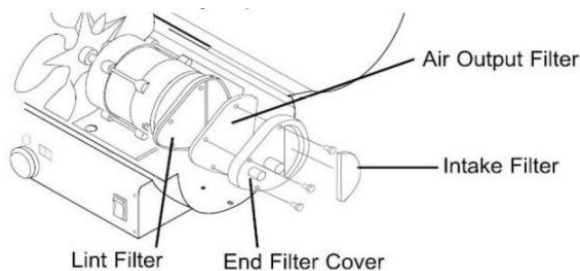


Figure 12. Filter Replacement

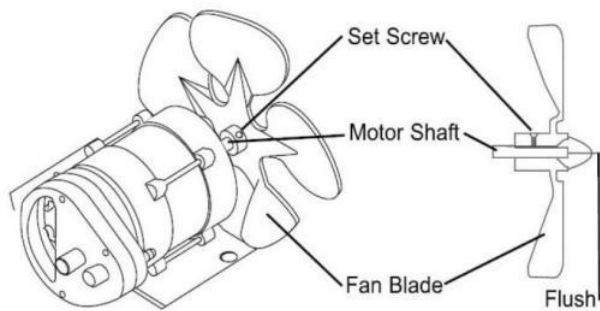


Figure 13. Fan Replacement

FAN BLADES:

Blades should be cleaned at least once per heating season, depending on the condition. Remove all accumulated dust and dirt with a damp cloth, not bending any of the fan blades. Be sure the fan blades are dry before re-starting the heater. For Fan removal, see Figure 13.

NOZZLES:

Nozzles should be cleaned or replaced at least once per heating season. Contaminated fuel could make this necessary immediately. To clean dirt from the nozzle, blow compressed air through the nozzle front. It may be necessary to soak the nozzle in clean Kerosene (1-K Diesel) to help loosen any particles.

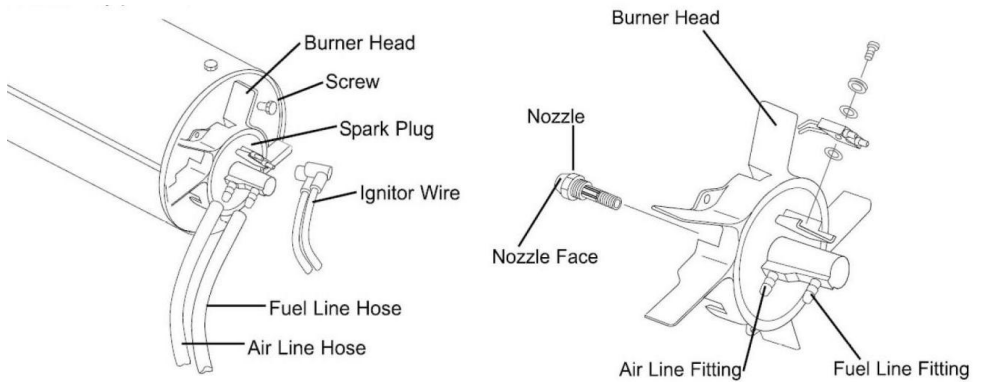


Figure 14. Nozzle Replacement

NOTE: The use of Kerosene (1-K Diesel) may require additional maintenance. Using this heater without proper maintenance or with contaminated or old fuel may lead to improper combustion and possible soot production.

BE SURE FUEL USED IS APPROVED (see OPERATION on Page 10).

SPARK PLUG:

Clean and re-gap every 600 hours of operation, or replace as needed. After removing the spark plug, clean the terminals with a wire brush. Re-gap the terminals to 0.35cm

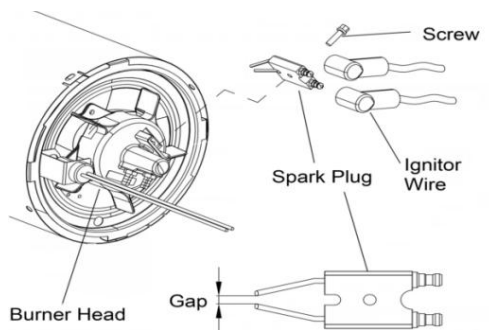


Figure 15. Spark plug Replacement

PHOTOCELL:

The Photocell should be cleaned at least once per heating season or more, depending on the condition.

Use a cotton swap dipped in water or alcohol to clean the lens of the Photocell. Note the proper photocell position, as noted in Figure 16 and Figure 17.

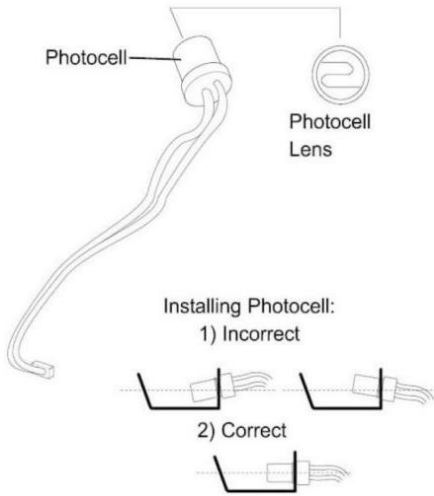


Figure 16. Photocell Positioning

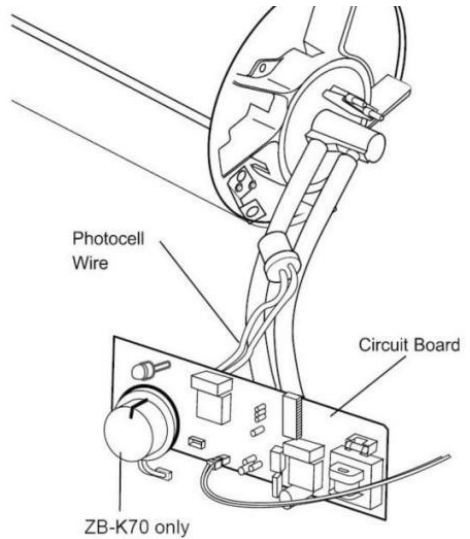


Figure 17. Photocell position for ZB-K70

FUEL FILTER:

The fuel filter should be cleaned at least twice per heating season by rinsing it in clean Kerosene (1-K Diesel). Contaminated fuel could make this necessary immediately (See Figure 18).

NOTE: Please draw out the rubber plug directly to remove the fuel filter for all models. The use of diesel may require additional maintenance. Improper maintenance can lead to poor combustion and soot production.

PUMP PRESSURE ADJUSTMENT:

While heater is operating, turn relief valve clockwise to increase. Counterclockwise to decrease (see Figure 19). Use flat blade screw driver to turn valve. Correct pump pressure is as follows:

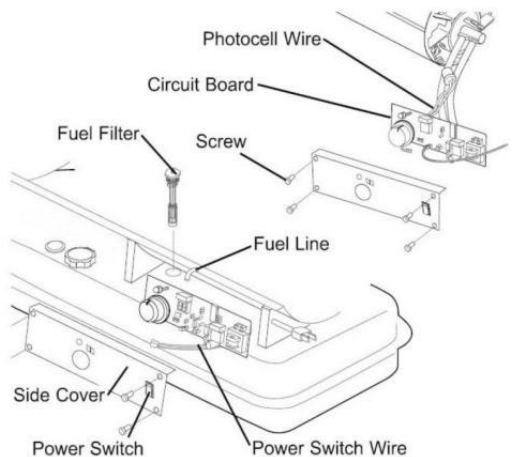


Figure 18. Fuel filter replacement

| Model# | Pump Pressure(Kpa/Psi) |
|---------|------------------------|
| ZB-K70 | 31.0/4.5 |
| ZB-K175 | 48.0/7.0 |
| ZB-K215 | 52.0/7.5 |

Tolerance $\pm 10\%$

1. If the flame is dim, turn up the pressure.
2. If the flame comes out of the incendiary cylinder, reduce the pressure.

For best measurement of pressure, test with full tank of fuel. Optimum pressure occurs when the nose cone is cherry red and there are no extending flames from the heater.

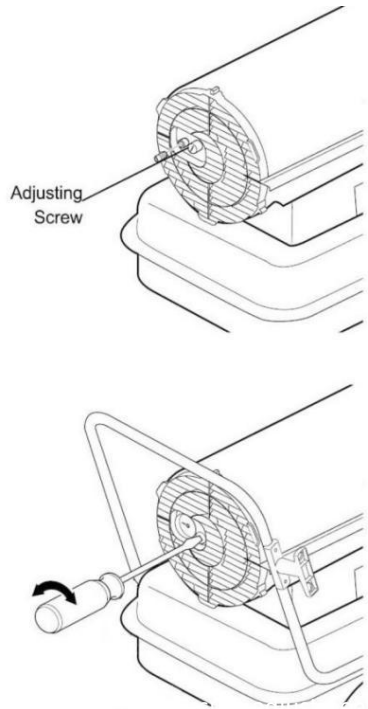


Figure 19. Pump pressure adjustment

Wiring Diagrams

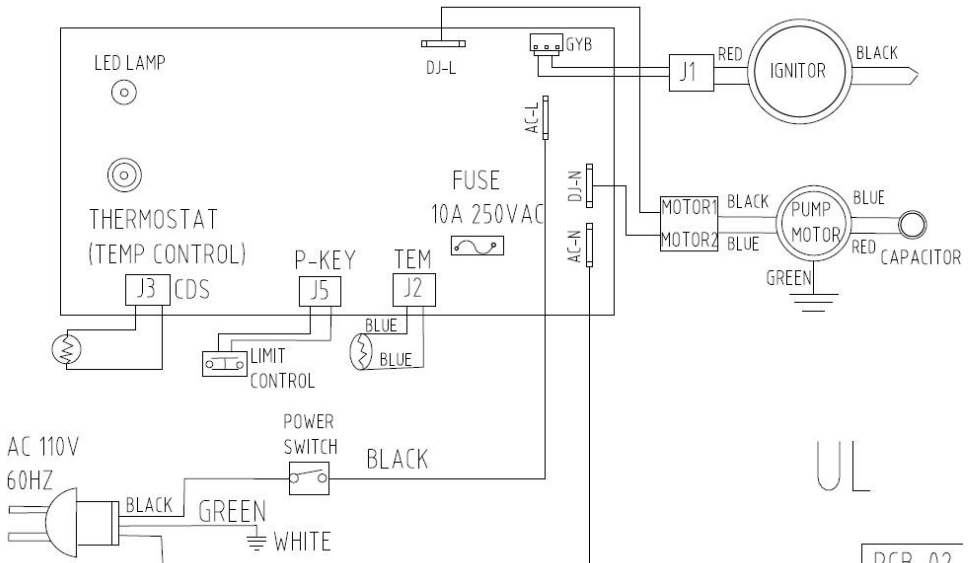


Figure 20. Model ZB-K70

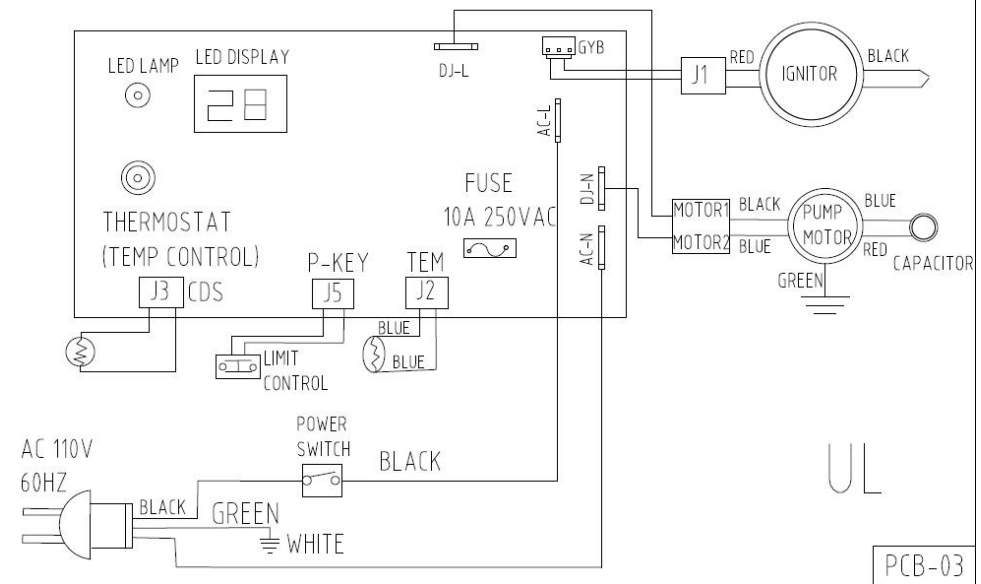


Figure 21. Models ZB-K175/ZB-K215

Troubleshooting Guide:

| Problem | Possible Cause | Solution |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heater fires, but main PCB shuts heater off after a short period of time lame is flickering, and LED display show "E1" (1flash) | <ol style="list-style-type: none"> 1.Incorrect pump pressure. 2.Dirty input output or lint filter 3.Dirty fuel filter. 4.Nozzle is dirty. 5.Photocell lens is dirty. 6.Photocell not installed properly. 7.Photocell defective. 8.Improper electrical connection between main PCB and photocell. | <ol style="list-style-type: none"> 1.Adjust pump Pressure (page 20) 2.Clean/replace air filter (page 15-16) 3.Clean/replace Fuel Filter (page 16-17) 4.Clean/replace Nozzle (page16-17)) 5.Clean/replace Photocell (page 18) 6.Adjust Photocell position (page 18) 7.Replace Photocell (page 18) 8.Check wiring connections (See wiring Diagrams, page 19-20) |
| Heater will not operate, or motor runs for short time, Lamp flickers and LED display shows "E1"(1flash) | <ol style="list-style-type: none"> 1.No Diesel in fuel tank. 2.Incorrect pump pressure. 3.Corroded spark plug or incorrect plug gap. 4.Dirty fuel filter. 5.Dirty nozzle. 6.Moisture in fuel/fuel tank. 7.Improper electrical connection between transformer and circuit board.Ignitor wire not connected to spark plug.Detective Ignitor. | <ol style="list-style-type: none"> 1.Fill tank with fresh Diesel 2.Adjust pump pressure (page 20) 3.Clean/replace spark plug (page 17) 4.Clean/replace fuel filter (page 18) 5.Clean/replace nozzle (page 16-17) 6.Rinse out fuel tank with clean fresh Diesel (page 14-15) 7.Inspect all electrical connection (see wiring diagrams page 19-20) 8.Re-attach Ignitor wire to spark plug (page17)Replace Ignitor |

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| <p>Fan does not opera when heater is plugged in and power switch is in the "ON" position. The lamp is flickering or on and LED display shows "E1" or "E2"(1 flash or 2 flashes)</p> | <p>Thermostat is set too low (Does not apply to ZB-K45) Broken electrical connection between main PCB and motor</p> | <p>Rotate thermostat to a higher setting Inspect all electrical connection (see wiring diagrams page19-20)</p> |
| <p>Lamp is flickering, and LED display shows "E3" (3flashes)</p> | <p>1.Thermostat switch has failed</p> | <p>1.Replace thermostat switch, wiring diagrams (page19-20)</p> |
| <p>Poor combustion and / or excess soot production</p> | <p>1.Dirty input output or lint filter 2.Dirty fuel filter Poor quality of fuel Pump pressure is too high or too low</p> | <p>1.Clean/replace air filter (page15-16) 2.Clean/replace fuel filter (page 16-17) 3.Be sure fuel is not contaminated or old 4.Use proper pressure (page19)</p> |
| <p>Heater does not turn on and the lamp Is not lit</p> | <p>Temperature limit sensor has overheated No electrical power 3.Fuse blown 4.Improper electrical connection between Temperature Limit Sensor and Circuit Board</p> | <p>1.Push power switch to "OFF" and allow heater to cool for 10 minutes. Push switch back to "ON" 2.Check power cord and extension cord to insure of proper connection, test power supply Check/replace fuse Inspect all electrical connection (see wiring diagrams page19-20)</p> |

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