



Purchase Date: ___ / ___ / ___ Order/Customer Reference Number: _____

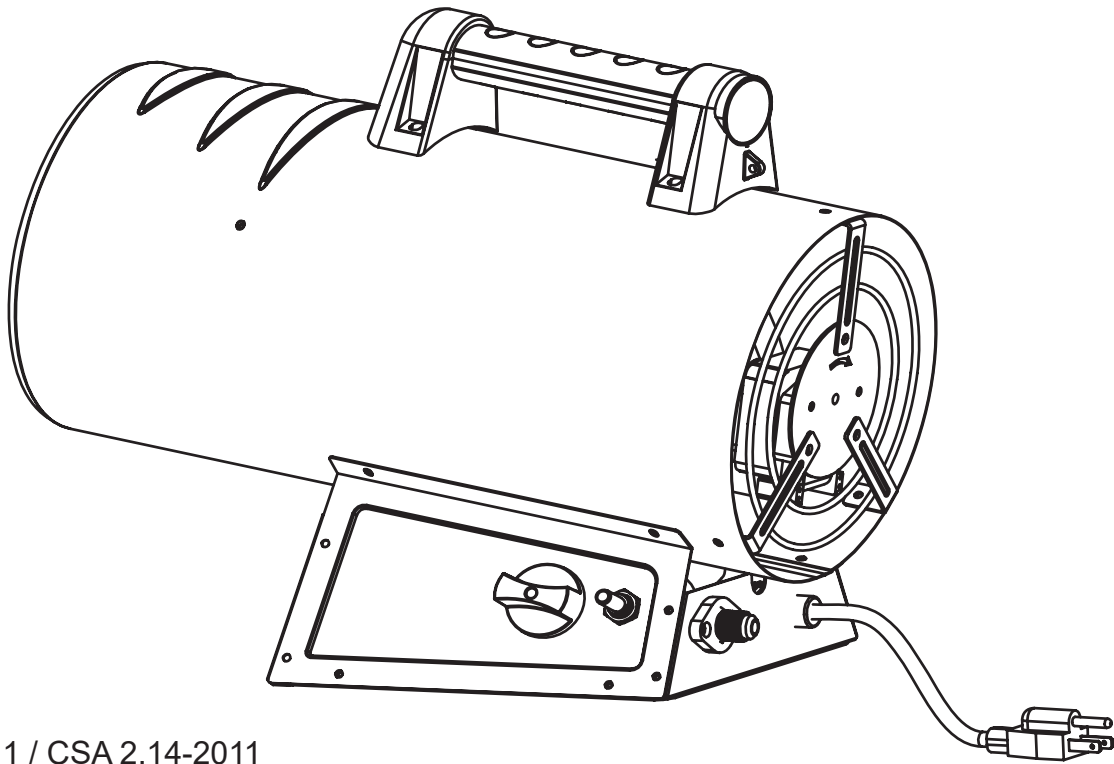
Thank you for choosing Sunnydaze Decor. We stand behind our brand and the quality of the items we sell. Replacement parts or products will be sent at our discretion within the 1-year warranty period. Proof of purchase, with the date of purchase as well as photos of the merchandise defect, must be provided. Photos are used to determine the cause of defects and for future quality control. Register your warranty at <https://tiny.cc/SunnydazeWarranty> If you have any questions, comments or concerns, feel free to contact us by phone at 833-982-1977, by email: customerservice@sunnydazedecor.com, or via our contact us page at <https://tiny.cc/SunnydazeContact>

PROPANE FORCED AIR HEATER

60,000 BTU / 85,000 BTU / 125,000/BTU

BAO-125 BAO-132 BAO-149

READ INSTRUCTIONS CAREFULLY:
Read and follow all instructions. Place instructions in a safe place for future reference. Do not allow anyone who has not read these instructions to assemble, light, adjust or operate the heater.



ANSI Z83.7-2011 / CSA 2.14-2011

⚠ WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Service must be performed by a qualified service agency.

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 page 3.
Forced Air means that a blower or fan pushes the air through the heater. Proper combustion depends upon this air flow; therefore, the heater must not be revised, modified or operated with parts removed or missing. Likewise, safety systems must not be circumvented or modified in order to operate the heater.

IMPORTANT: Read and understand this manual before assembling, starting or servicing heater. Improper use of heater can cause serious injury. Keep this manual for future reference.

 GENERAL HAZARD WARNING:

Failure to comply with the precautions and instructions provided with this heater can result in death, serious bodily injury and property loss or damage from hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning and/or electrical shock.

Only persons who can understand and follow the instructions should use this heater.

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Any modification to the product or failure to follow recommended care will void the product warranty.

 WARNING!

Manufacturer and seller expressly disclaim any and all liability from personal injury, property damage or loss, whether direct or indirect, or incidental, resulting from the incorrect attachment, improper use, inadequate maintenance, or neglect of this product.

SAFETY

⚠️ WARNING: Fire, burn, inhalation and explosion hazard. Keep solid combustibles, such as building materials, paper or cardboard, a safe distance away from the heater as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles or products such as gasoline, solvents, paint thinner, dust particles or unknown chemicals.

⚠️ WARNING: Not for home or recreational vehicle use.

The heater is designed for use as a construction heater in accordance with ANSI Z83.7•CGA2.14. (Check with your local fire safety authority if you have questions about heater use.) Other standards govern the use of fuel gases and heating products for specific uses. Your local authority can advise you about these. The primary purpose of construction heaters is to provide temporary heating of buildings under construction, alteration or repair. Properly used, the heater provides safe, economical heating. Products of combustion are vented into the area being heated.

We cannot foresee every use which may be made of this heater. **Check with your local fire safety authority if you have questions about heater use.**

Propane Gas: Propane gas is odorless. An odor-making agent is added to propane gas. The odor helps you detect a propane gas leak. However, the odor added to propane gas can fade. Propane gas may be present even though no odor exists.

⚠️ Carbon Monoxide Poisoning: Early signs of carbon monoxide poisoning resemble the flu with headache, dizziness and/or nausea. If you have these signs, the heater may not be working properly. Get fresh air at once! Check for proper ventilation and have the heater serviced.

IMPORTANT SAFETY INFORMATION

1. Install and use the heater with care. Follow all local ordinances and codes. In the absence of local ordinances and codes, refer to the Standard for Storage and Handling of Liquefied Petroleum Gas, ANSI/NFPA 58 and the Propane Gas Installation Code, CAN/CGA B149.2. This instructs on the safe storage and handling of propane gases.
2. Use only the electrical voltage and frequency specified on the model plate. The electrical connections and grounding of the heater shall follow the National Electric Code, ANSI/NFPA 70 or Canadian Electrical Code, Part 1
3. Electrical grounding instructions - This appliance is equipped with a three-prong (grounding) plug for your protection against shock hazards and should be plugged directly into a properly grounded three-prong receptacle or extension cord.
4. Use only a three-prong, grounded extension cord.
5. Use only the hose and factory preset regulator provided with the heater.
6. Use only propane gas set up for vapor withdrawal.
7. Provide adequate ventilation. Before using the heater, provide at least a three square foot opening of fresh, outside air for each 100,000 BTU (105,500 KJ/Hr) of rating.
8. For indoor use only. Do not use heater outdoors.
9. Do not use the heater in a basement or below ground level. Propane gas is heavier than air. If a leak occurs, propane gas will sink to the lowest possible level.
10. Keep the appliance area clear and free from combustible materials, gasoline, paint thinner and other flammable vapors and liquids.
11. Do not use the heater in areas with high dust content. Dust is combustible.
12. Minimum heater clearances from combustibles: Outlet: 8 ft. (2.4 m), Sides: 2 ft. (0.61 m), Top: 6 ft. (1.83 m), Rear: 2 ft. (0.61 m).
13. The heater must be located at least 7 ft. (2.13 m) in the USA or 10 ft. (3 m) in Canada from any propane gas container. And the heater shall not be directed toward propane gas containers.
14. Not intended for use on finished floors.
15. Never block the air inlet (rear) or the air outlet (front) on the heater.
16. Keep heater away from strong drafts, water spray, rain or dripping water.
17. Do not leave the heater unattended.

SAFETY

Continued

18. Keep children and animals away from the heater.
19. Check the hose before each use of the heater. If highly worn or cut, replace with a hose specified by manufacturer before using heater.
20. Locate the heater on stable and level surface if heater is hot or operating.
21. To prevent injury, wear gloves when handling heater.
22. Never attach duct work to the heater.
23. Do not alter the heater. Keep the heater in its original state.
24. Never move, handle or service a hot, operating or plugged-in heater. Severe burns may result. You must wait 15 minutes after turning the heater off.

UNPACKING

1. Remove all items from the carton.
2. Remove all packing items applied to the heater for shipment. Keep plastic cover caps (attached to inlet connector and hose/regulator assembly) for storage.
3. Check all items for shipping damage. If the heater is damaged, contact customer service via one of the methods mentioned at the top of page 1.

PRODUCT IDENTIFICATION

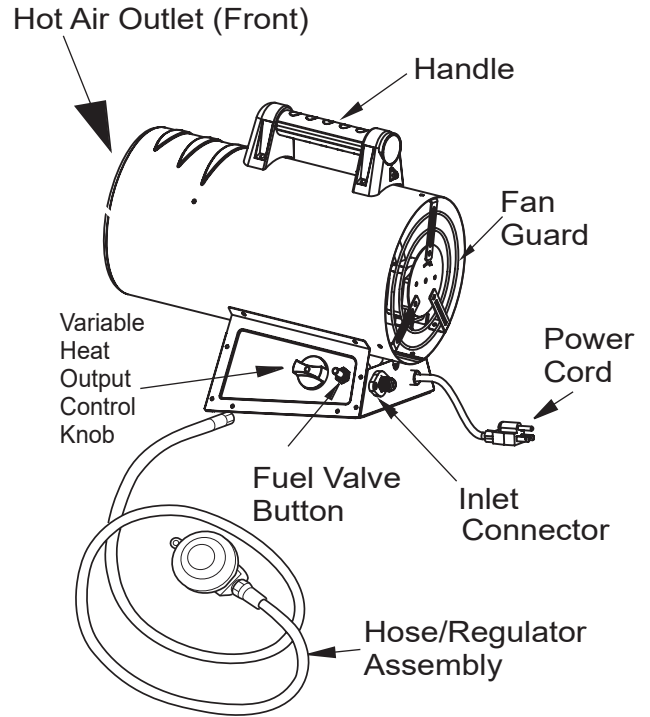


Figure 1 - Variable 60-125,000 BTU/Hr (heater may vary from illustration)

Any modification to the product or failure to follow recommended care will void the product warranty.

THEORY OF OPERATION

The Fuel System: The hose/regulator assembly attaches to the propane gas supply. The propane gas moves through the automatic control valve and out the nozzle.

The Ignition System: The spark transformer and spark plug light the main burner.

The Safety Control System: This system causes the heater to shut down if the flame goes out.

NOTE: Some parts are located differently on some heater models.

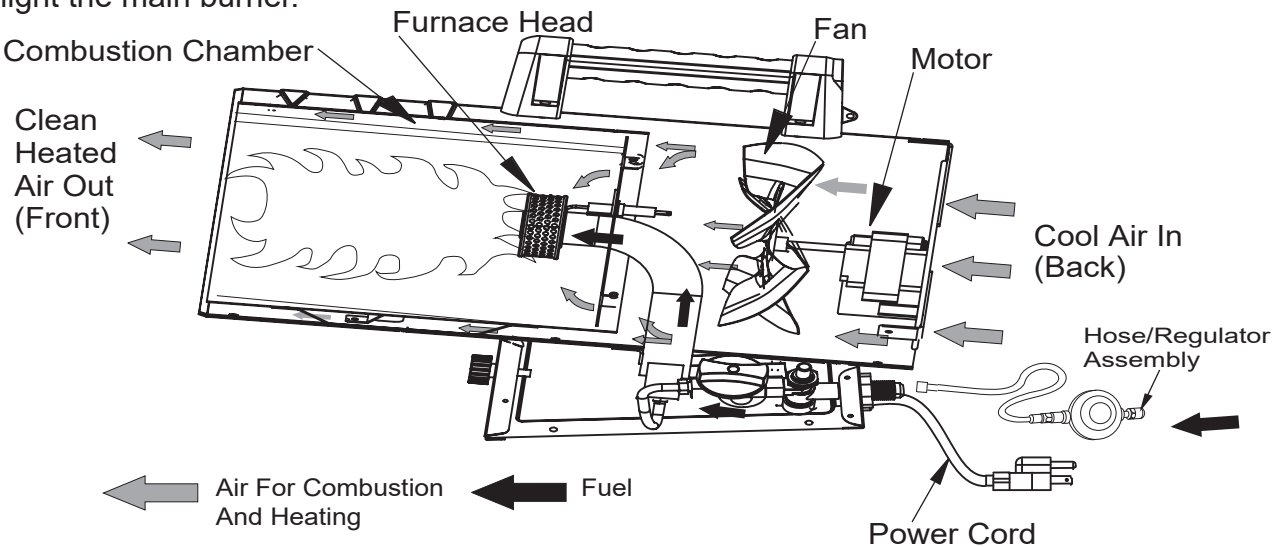


Figure 2 - Cross Section Operational View (heater may vary from illustration)

PROPANE SUPPLY

Propane gas and propane tank(s) are to be furnished by the user.

Use this heater only with a propane vapor withdrawal supply system. The installer must conform with local codes or, in absence of local codes, with the Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and Propane Gas Installation Code, CAN/CGA B149.1.

The amount of propane gas ready for use from propane tanks varies. Two factors decide this amount:

1. The amount of propane gas in the tank(s)
2. The temperature of the tank(s)

The chart below shows the number of 100 lb (45 kg) tanks needed to run this heater.

Average Temp At Tank Location	No. of Tanks 100 lb (45 kg) Models		
	60	85	125
Above 20°F (-7°C)	1	1	2
20°F (-7°C) to 0°F (-18°C)	1	2	3
Below 0°F (-18°C)	2	2	use larger tank

Smaller tanks can be used for limited run times but it is recommended to use larger tanks for optimum performance.

INSTALLATION

⚠ WARNING: Review and understand the warnings in the **Safety** section, page 3. They are needed to operate the heater safely. Follow all local codes when using this heater.

⚠ WARNING: Test all gas piping and connections for leaks after installation or servicing. Never use an open flame to check for a leak. Apply a mixture of liquid soap and water to all joints. Bubbles forming show a leak. Correct all leaks at once.

1. Provide an appropriate propane supply system (see *Propane Supply*).
2. Connect fuel gas connector fitting on the hose/regulator assembly to the propane tank(s). Turn counterclockwise into the threads on tank valve. Tighten firmly using a wrench.
3. Connect the hose to inlet connector (see Figure 4). Tighten firmly using a wrench. **IMPORTANT:** Use extra hose or piping if needed. Install extra hose or piping between hose/regulator assembly and propane tank. The regulator supplied with heater must be used.

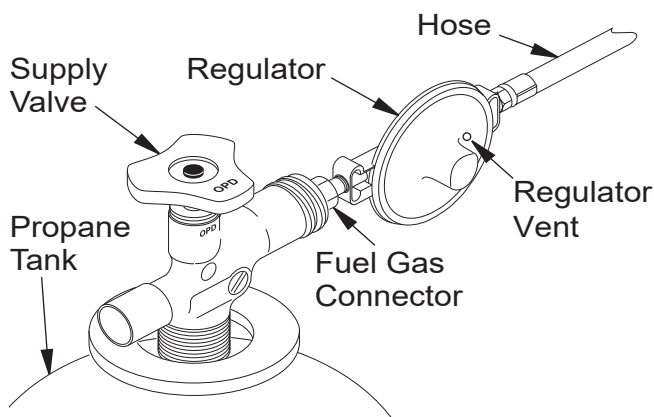


Figure 3 - Regulator With Vent

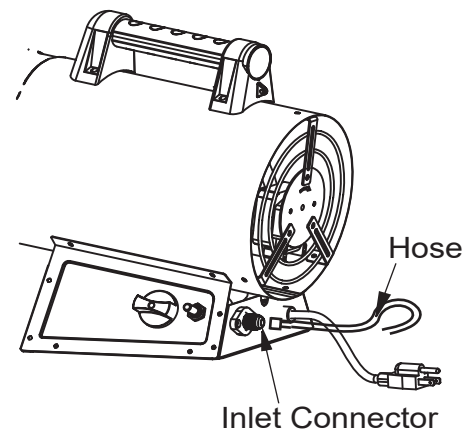


Figure 4 - Hose and Inlet Connector (heater may vary from illustration)

VENTILATION

⚠️ WARNING: Follow the minimum fresh, outside air ventilation requirements. If proper fresh, outside air ventilation is not provided, carbon monoxide poisoning can occur. Provide proper fresh, outside air ventilation before running heater.

Provide a fresh air opening of at least three square feet for each 100,000 Btu/Hr (105,500 KJ/Hr) rating. Provide additional fresh air if more heaters are being used.

OPERATION

⚠️ WARNING: Review and understand the warnings in the Safety section, page 3. They are needed to operate the heater safely. Follow all local codes when using this heater.

TO START HEATER

1. Read and carefully follow all installation, ventilation and safety information.
2. Place heater on a stable and level surface. Make sure the front or rear of heater are not exposed to strong drafts.
3. Plug the power cord of heater into a three-prong, grounded extension cord. Extension cord must be at least 6 ft. (1.83 m) long, UL/CSA listed and of a proper size.

Extension Cord Wire Size Requirements

Up to 100 ft (30.5 m) long, use 16 AWG rated cord.
101 to 200 ft (30.78 to 61 m) long, use 14 AWG rated cord.

4. Plug extension cord into a 120 volt/60 hertz, 3-prong, grounded outlet. The motor will start. The fan will turn, forcing air out the front of the heater.
5. Open propane supply valve on propane tank(s) slowly. **NOTE:** If not opened slowly, the excess-flow check valve on propane tank will stop gas flow. You may hear a click from the excess-flow check valve closing. If this happens, reset the excess-flow check valve by closing the propane supply valve and opening it again slowly.

⚠️ WARNING: Be sure the motor and fan are running before pushing in automatic control valve button. Flames could flash outside the heater if the motor and fan are not running.

6. Press and hold in fuel valve button. Heater should ignite within a few seconds. **NOTE:** If the heater fails to ignite, the hose may have air in it. If so, keep the fuel valve button pressed and wait 20 seconds. Release the automatic control valve button and wait 20 seconds for unburned fuel to exit heater. Repeat this step if necessary.
7. After heater ignites, wait 30 seconds; this activates the automatic control system. Release the control knob.

TO STOP HEATER

1. Tightly close the propane supply valve on the propane tank(s).
2. Wait a few seconds. The heater will burn gas remaining in the supply hose.
3. Unplug the heater power supply cord.

⚠️ WARNING: If the heater is unplugged or a power outage occurs while the heater is running, the thermal limit device will stop fuel flow. A few seconds occur before the thermal limit device activates. During this short time, flames may appear outside the heater. This is normal.

MAINTENANCE

WARNINGS

- Never service heater while it is plugged in, connected to propane supply, operating or hot. Severe burns and electrical shock can occur.
- Keep heater clear and free from combustible materials, gasoline and other flammable vapors and liquids.
- Do not block the flow of combustion or ventilation air.

1. Keep the heater clean. Clean heater annually or as needed to remove dust and debris. If the heater is dirty or dusty, clean heater with a damp cloth, use household cleaners on difficult spots.
2. Inspect heater before each use. Check connections for leaks. Apply mixture of liquid soap and water to connections. Bubbles forming show a leak. Correct all leaks at once.
3. Inspect the hose/regulator assembly before each use. If the hose is highly worn or cut, replace with hose specified by manufacturer.
4. Have the heater inspected yearly by a qualified service agency.

STORAGE

CAUTION: Disconnect the heater from propane supply tank(s).

1. Store propane tank(s) in safe manner. When the heater is stored indoors, the connection between the propane supply cylinder and the heater must be disconnected.
2. Store propane cylinder(s) in accordance with local laws and regulations. In the absence of local codes, follow the Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and Propane Storage and Handling Code, CSA B149.2.
3. Place plastic cover caps over brass fittings on inlet connector and hose/regulator assembly.
4. Store in a cool, dry location. Do not store in locations that are exposed to water or high moisture.
5. Covering the heater while in storage will help prevent dust and debris build-up. Ensure the heater is fully cool before covering.

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WARNING!

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SERVICE PROCEDURES

⚠ WARNING: Never service heater while it is plugged in, connected to propane supply, operating or hot. Severe burns and electrical shock can occur.

⚠ ELECTRICAL SYSTEM

The entire electrical system for this heater is contained within the motor. If any part of the electrical system is damaged, you must replace the motor.

MOTOR

1. With the heater on its side, remove access panel.
2. Access the ground screw through the underside of the heater base. Remove ground screw. Disconnect the green motor wire and the green power cord wire from the underside of the shell (see Figure 5).
3. Remove two black wires from motor to terminal board.
4. Carefully push the motor wires through the hole in the bottom of the shell.
5. Use a nut-driver to remove the three screws holding the motor mount to the shell (see Figure 5).
6. Carefully pull motor and fan out of shell. **IMPORTANT:** Be careful not to damage fan. Do not set motor and fan down with the weight resting on fan. This could damage fan pitch.
7. Use a hex wrench to loosen the set screw, which holds the fan to motor shaft (see Figure 6). Remove fan, taking care not to damage the fan blade pitch.
8. Use a nut-driver to remove the two nuts that attach the motor to the motor mount.
9. Discard the old motor.
10. Attach the new motor to the motor mount with two nuts. Tighten nuts firmly.
11. Place the fan onto the new motor shaft, making sure the set screw contacts the flat surface on the motor shaft. Tighten set screw firmly (40-50 inch-pounds [46.08-57.60 kilogram- centimeters]).
12. Carefully route the motor wires through the hole in the shell. Place the motor, motor mount and fan guard into rear of heater shell (see Figure 5).
13. Insert three screws through the heater shell and into the fan guard (see Figure 5). Firmly tighten the screws.

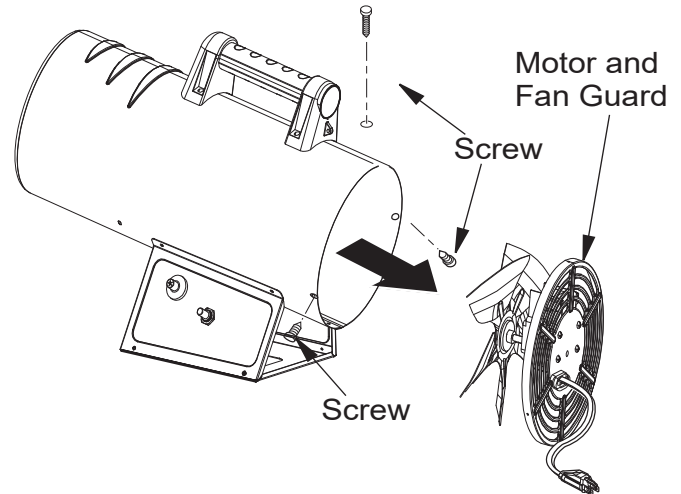


Figure 5 - Removing Motor and Fan Guard from Heater (heater may vary from illustration)

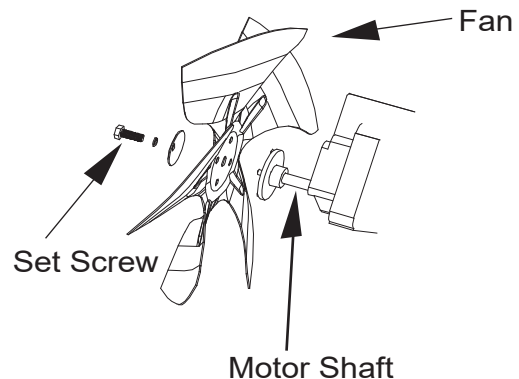


Figure 6 - Fan, Motor Shaft and Set Screw Location

SERVICE PROCEDURES

Continued

FAN

1. Remove the motor, the motor mount and fan (see *Motor*, steps 1 through 8, page 8).
2. Clean the fan using a soft cloth moistened with kerosene or solvent.
3. Dry the fan thoroughly.
4. Replace the fan onto the new motor shaft. Make sure the set screw contacts the flat surface on the motor shaft (see Figure 6, page 8). Tighten set screw firmly (40-50 inch-pounds [46.08-57.60 kilogram-centimeters]).
5. Place the motor and the fan guard into the rear of the heater shell. Make sure the power cord is properly located (see Figure 7).
6. Insert three screws through the heater shell and into fan guard (see Figure 7). Tighten screws firmly.

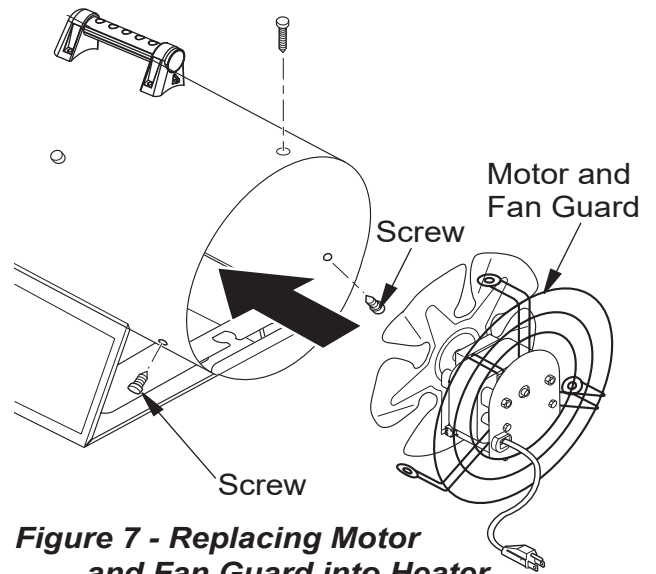


Figure 7 - Replacing Motor and Fan Guard into Heater

IGNITER

1. Remove the motor and fan the guard from heater (see *Motor*, page 8, steps 1 through 6).
2. Remove the black igniter wire from Piezo igniter. Access the igniter wire through the underside of the heater base (see Figure 8). Push the wire up through the notch in the filler panel.
3. Use a nut-driver or standard screwdriver to remove the igniter mounting screw from the rear head (see Figure 8).
4. Install the new igniter by attaching it to the rear head with the igniter mounting screw.
5. Run the igniter wire from new igniter through notch in the filler panel. Attach the igniter wire to the Piezo igniter.
6. Set gap between igniter electrode and target plate to 0.17" (43.18 cm) (see Figure 9).
7. Place the motor and fan guard into the rear of the heater shell (see *Motor*, page 8, steps 11, 12, 13).

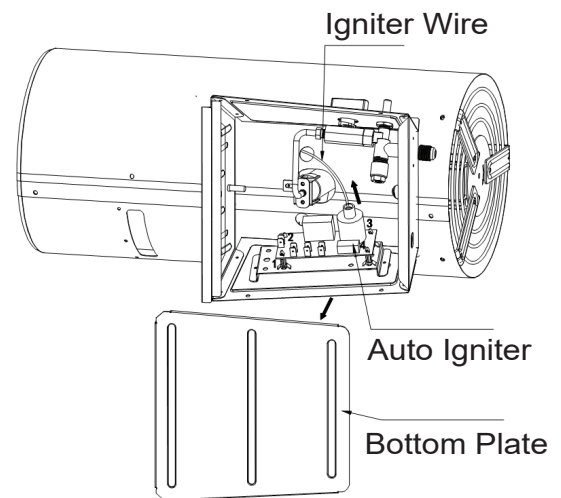


Figure 8 - Removing Igniter Wire from Igniter

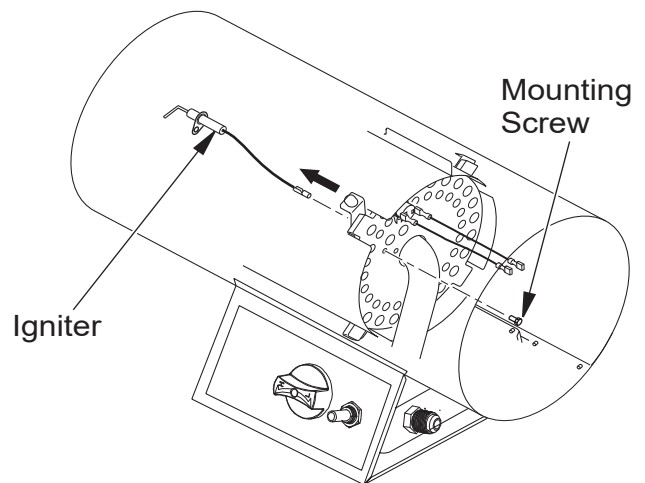


Figure 9 - Removing Igniter Mounting Screw and Igniter

⚠ CAUTION: Damage caused while servicing the heater is not covered by the limited warranty.

TROUBLESHOOTING

⚠ WARNING: Never service heater while it is plugged in, connected to propane supply, operating or hot. Severe burns and electrical shock can occur.

OBSERVED FAULT	POSSIBLE CAUSE	SOLUTION
Fan does not turn when the heater is plugged in	No electrical power to heater	Check voltage to electrical outlet. If voltage is good, check heater power cord for breaks
	Fan blades bent	Replace fan. See <i>Fan</i> , page 9
Heater will not ignite	User did not follow installation or operation instructions properly	Repeat installation and operation instructions. See <i>Installation</i> and <i>Operation</i> , pages 5 and 6
	No spark at igniter. To test for spark, follow step 7 under <i>Igniter</i> , page 9. If you see spark at igniter, have heater serviced by qualified service person. If no spark seen: A) Loose or disconnected igniter wire B) Wrong spark gap	A) Check igniter wire. Tighten or reattach loose igniter wire. See Figure 9, page 9 for igniter wire location B) Set gap between igniter electrode and target plate to 0.17" (0.43 cm)
Heater shuts down while running	Propane supply may be inadequate	A) Refill tank B) Provide additional and/or larger tanks. See <i>Propane Supply</i> , page 5
	High surrounding air temperature causing thermal limit device to shut down heater	This can happen when running heater in temperatures above 85°F (29.44° C). Run heater in cooler temperatures
	Restricted air flow	Check heater inlet and outlet, remove any obstructions

⚠ WARNING:
Do not use the heater in areas with high dust content. Dust is combustible.

⚠ WARNING!

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SPECIFICATIONS

ALL MODELS

- Electrical Input:
115V, 60 Hz, 1Ø, 2a Direct Spark Ignition
- Primary Flame Control:
Thermocouple operated gas valve
- Minimum Ambient Temp. Rating:
0°F (-17.8° C)

60,000 BTU/HR MODEL

- 40,000-60,000 BTU/hr (11.7-17.5 kW)
- Fuel Consumption:
1.8 - 2.7 pounds/hr (0.84 - 1.26 kg/hr)
- Fuel Orifice Port No.: 18
- Fuel Orifice Port Size: 0.0196" (0.50 mm)
- Average Air Temp. Rise: 200° F (111° C)
- Fuel: Propane/LP Gas
- Gas Supply Pressure to Regulator:
Max - Bottle Pressure, Min - 10 psig (68.9 kPa)
- Gas Supply Pressure Regulator Out:
10psig (68.9 kPa)

85,000 BTU/HR MODEL

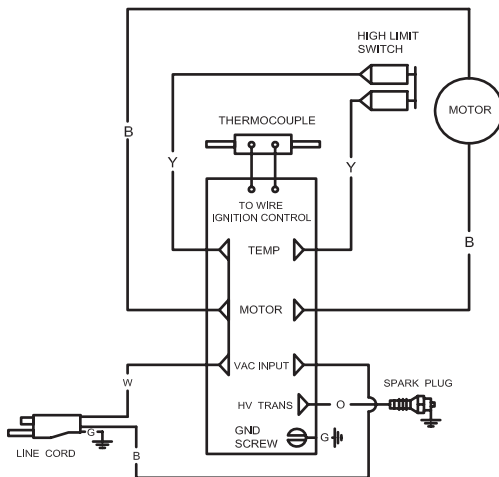
- 50,000-85,000 BTU/hr (14.6-25.0 kW)
- Fuel Consumption:
2.3 - 3.9 pounds/hr (1.05 - 1.78 kg/hr)
- Fuel Orifice Port No.: 18
- Fuel Orifice Port Size: 0.024" (0.60 mm)
- Average Air Temp. Rise: 200° F (111° C)
- Fuel: Propane/LP Gas
- Gas Supply Pressure to Regulator:
Max - Bottle Pressure, Min - 10 psig (68.9 kPa)
- Gas Supply Pressure Regulator Out:
10psig (68.9 kPa)

125,000 BTU/HR MODEL

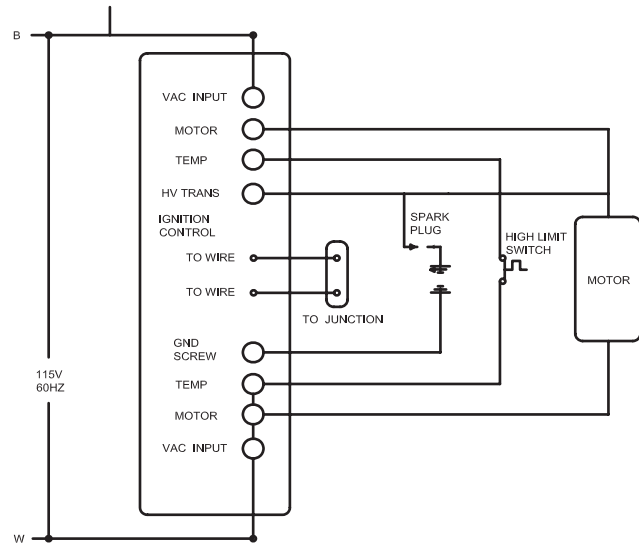
- 75,000-125,000 BTU/hr (21.9-36.6 kW)
- Fuel Consumption:
3.5 - 5.8 pounds/hr (1.57 - 2.62 kg/hr)
- Fuel Orifice Port No.: 18
- Fuel Orifice Port Size: 0.030" (0.75 mm)
- Average Air Temp. Rise: 400° F (232° C)
- Fuel: Propane/LP Gas
- Gas Supply Pressure to Regulator:
Max - Bottle Pressure, Min - 20 psig (137.8 kPa)
- Gas Supply Pressure Regulator Out:
10psig (137.8 kPa)

WIRING DIAGRAM

CONNECTION DIAGRAM

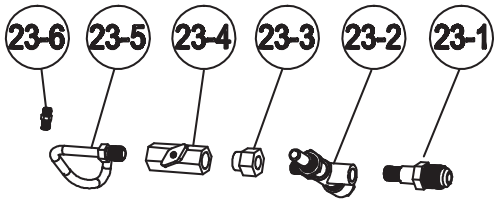
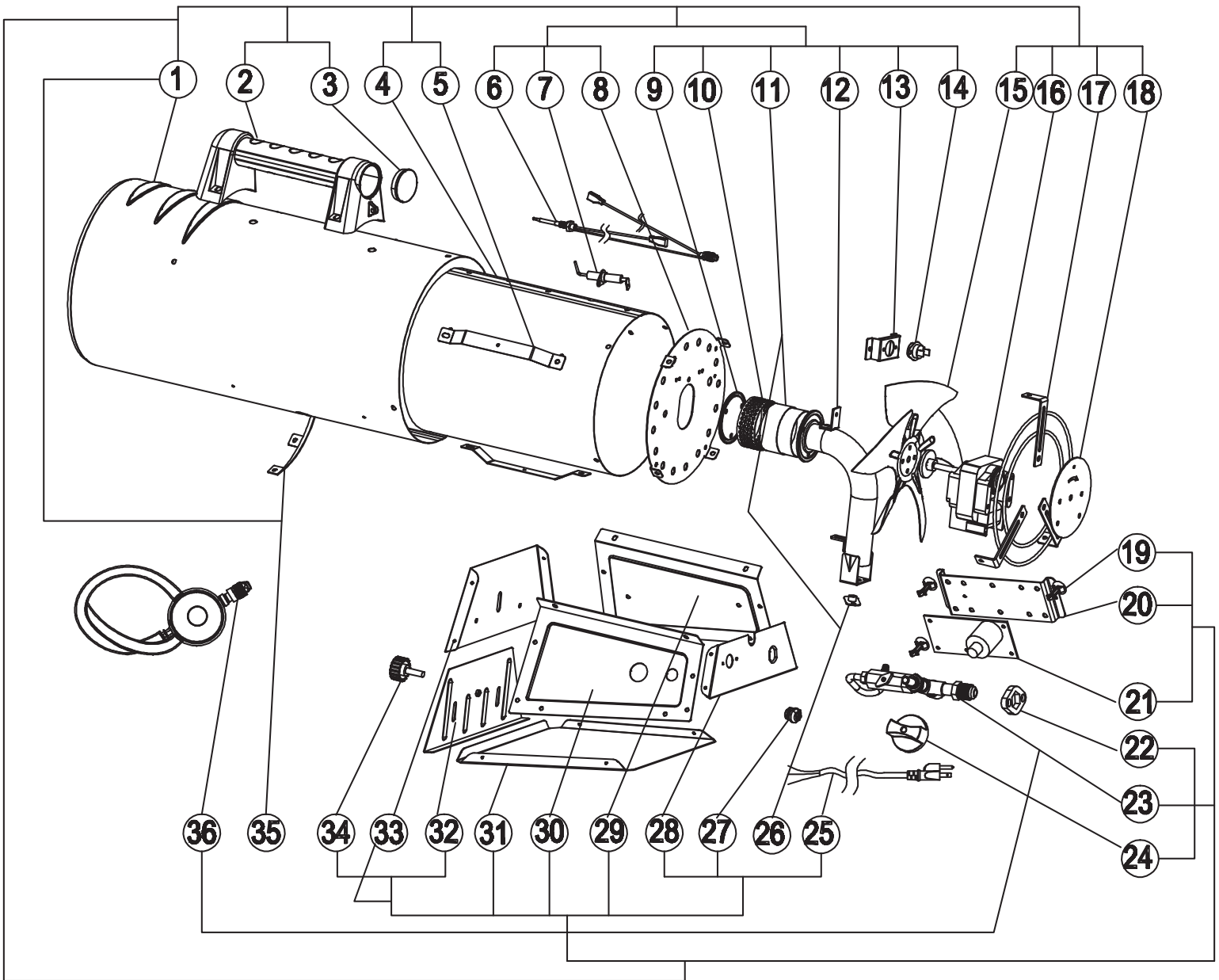


SCHEMATIC DIAGRAM



If any original wiring as supplied with the heater must be replaced, it must be replaced with type AWG 105°C wire or it's equivalent expet as indicated ('Type SF2-200. "SCI-250°C)

HEATER DIAGRAM



⚠ CAUTION:

Heater may vary from illustration.

The diagram shows a breakdown of the entire unit. Some parts may not be serviceable or replaced. Use only original replacement parts. This heater must use design-specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injuries. This will also protect your warranty coverage for parts replaced under warranty.

PARTS LIST

CAUTION:

This list contains all parts shown on the heater diagram on page 12. The diagram shows a breakdown of the entire unit. Some parts may not be serviceable or replaced. Heater may vary from illustration. Use only original replacement parts. This heater must use design-specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injuries. This will also protect your warranty coverage for parts replaced under warranty.

No.	DESCRIPTION	QTY.
1	Outer Casing	1
2	Handle	1
3	Handle Cover	1
4	Inner Shell	1
5	Insulation Shell Support	4
6	Thermocouple	1
7	Ignition Needle	1
8	Burner Disc	1
9	Before Burning Baffle	1
10	Burner Outside Network	1
11	Burner Inner Network	2
12	Air Inlet Pipe Assembly	1
13	Safety Thermostat Bracket	1
14	Reset Thermostat	1

No.	DESCRIPTION	QTY.
15	Fan	1
16	Motor	1
17	Air Inlet Grill	1
18	Fixing Plate	1
19	PCB Isolation Column	3
20	PCB Bracket	1
21	Power PCB	1
22	Fixing Plate for Air Pipe Nut	2
23	Control Valve Assembly	1
23.1	Air Pipe Connector	1
23.2	Gas Escape Valve	1
23.3	Ball Valve Connection Fixing Nut	1
23.4	Ball Valve	1
23.5	Gas Pipe	1

No.	DESCRIPTION	QTY.
23.6	Gas Nozzle	1
24	Knob	1
25	Cord Power Supply	1
26	Nozzle Stents	1
27	Cable Fastener	1
28	Back Plate	1
29	Left Plate	1
30	Right Plate	1
31	Lower Plate	1
32	Height Controller	1
33	Front Plate	1
34	Pinching Screw	1
35	Bottom Stop Plate	1
36	Hose/Regulator Assembly	1

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