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*Electric Radiant Infrared Heaters • Solid-State Temperature Controls • Solid-State Light Dimmers
Power Failure Alarms • SPIKE-SPIKER® Brand Voltage Surge Protectors*

Thank you for purchasing your Kalglo electric radiant infrared heater.

INSTRUCTION MANUAL

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GENERAL-USE APPLICATIONS

IMPORTANT INSTRUCTIONS

FOR INSTALLATION, USE, AND CARE OF KALGLO ELECTRIC RADIANT INFRARED HEATERS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read all instructions before installing or using this heater.
2. Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
3. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. at least 3 feet from the heater.
4. Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
5. Heater is intended for indoor use only.
6. To disconnect heater, turn off any controls and unplug the heater from the receptacle.
7. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
8. To prevent a possible fire, do not block air intakes or exhaust in any manner.
9. A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.
10. Use this heater only as described in these instructions. Any other use not recommended by Kalglo Electronics Co., Inc. may cause fire, electric shock, or injury to persons.
11. Unplug MR/MRM model heaters when not in use to keep electronics from being damaged.

12. **SAVE THESE INSTRUCTIONS**

NOTE: Kalglo electric radiant infrared heaters are built using the finest materials and workmanship and are constructed to meet or exceed applicable safety standards. However, any electric heater is a potential source of ignition or combustion and/or electric shock. If the heater is installed near or over combustible materials or in areas of high moisture or wetness and where a person or animal can come in contact with metal parts of the heater, it is recommended the electrical circuit supplying power to the heater be protected by a dedicated ground fault interrupting (GFI) receptacle as an additional safety precaution.

GENERAL-USE APPLICATIONS

INSTALLATION

1. Installation should be done by qualified personnel only. Wiring procedures and connections shall be in accordance with the national and local codes having jurisdiction. **GROUNDING: 120 volt** heaters have a NEMA 5-15 three bladed grounded molded plug, intended for a grounded receptacle Fig. 1 (A). An adapter is available for connecting three-blade grounding-type plugs to two-slot receptacles Fig. 1 (C). The green grounding lug extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box Fig.1 (B). The adapter should not be used if a three-slot grounded receptacle is available. **240 volt** heaters have a NEMA 6-15 three bladed grounded molded plug. No adapter is available for this blade configuration and none should be used. The type outlet is a 240 volt grounding outlet Fig.1 (D). When properly installed, it provides a ground connection through the cord to the heater to protect the operator from electric shock.

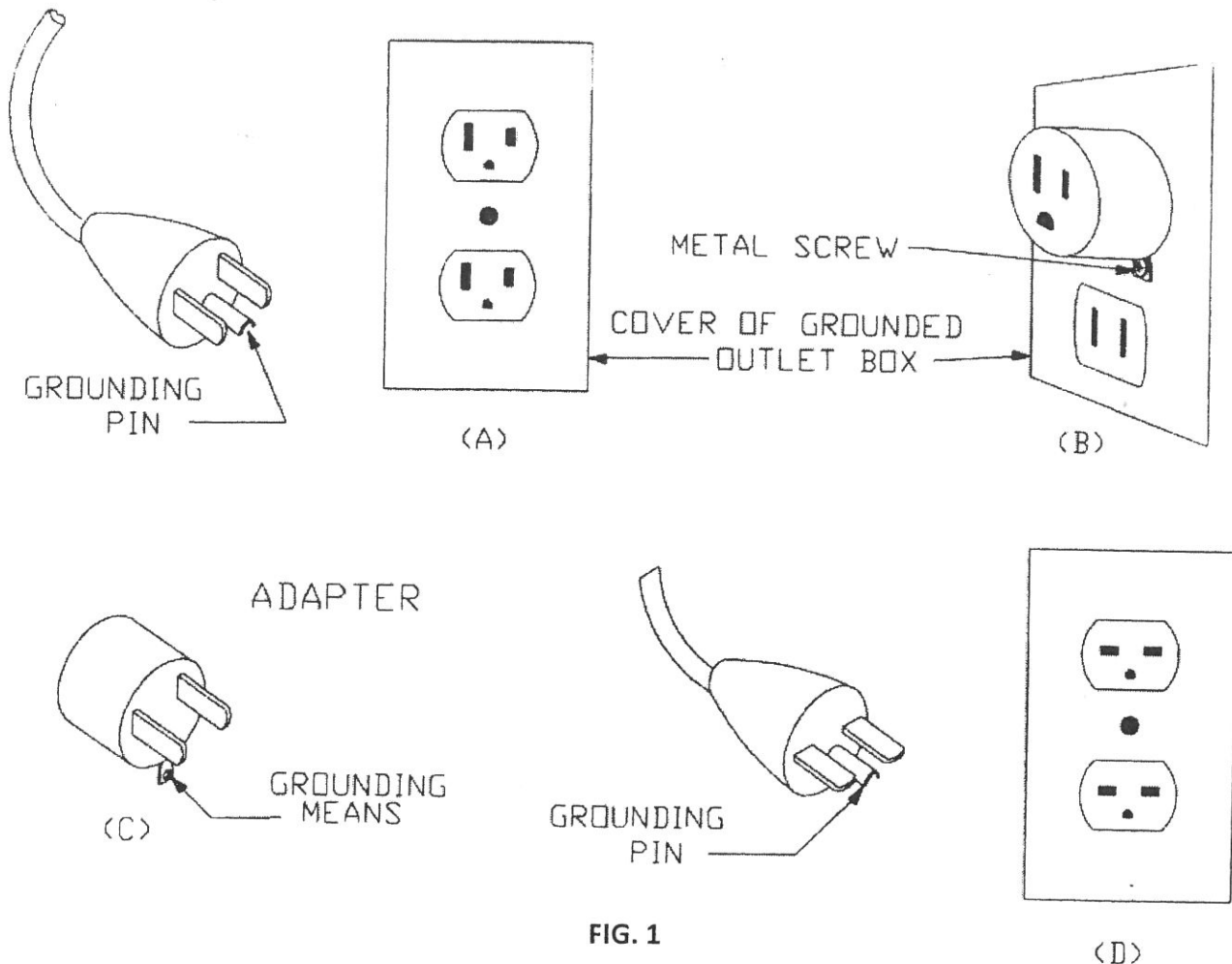


FIG. 1

FIG. 2 is a diagram of HS model heater showing the complete heater and relation of the components

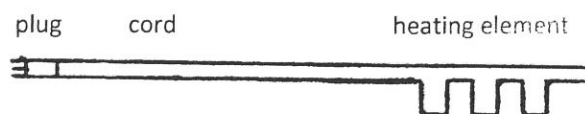


FIG. 2

INSTALLATION (CONTINUED)

FIG. 3 is a diagram of MR/MRM model heater showing the complete heater and relation of the components

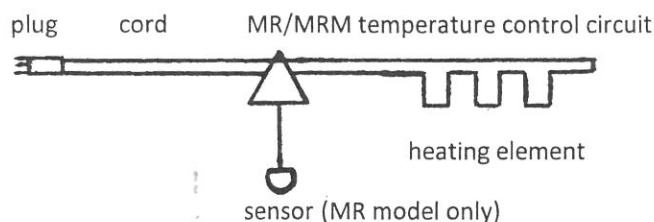
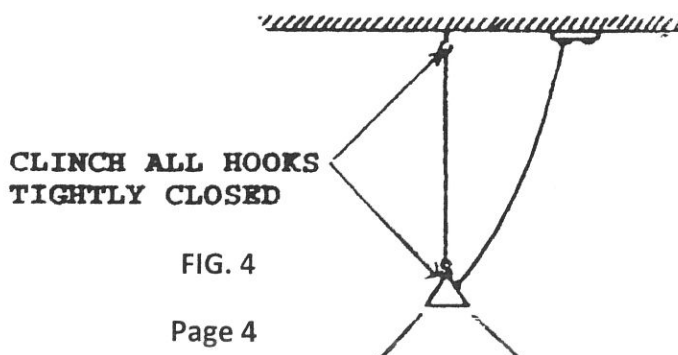


FIG. 3

2. Check heater operation - plug heater into rated supply voltage using a receptacle mounted within 6 feet of the heater. If a receptacle is not within 6 feet of the heater, it is recommended one be installed by a qualified electrician. Allow heating element to get red hot for 5-10 minutes. If unit is to be used with a GFI receptacle, plug heater into a non-GFI protected circuit to burn in the heater element prior to installation on a GFI protected circuit. After installing, if heater trips the GFI receptacle, plug heater into properly grounded non-GFI protected circuit and allow heater to burn in for several hours. Metal sheath heating elements, when not in use for extended periods, can absorb moisture. This is normal. This moisture may need to be burned off prior to use with a GFI receptacle to prevent false tripping. Since the normal element leakage currents are additive with multiple heaters, do not use more than two heaters per GFI protector circuit. In some cases it may be necessary to use only one heater per GFI receptacle. Do not connect any other equipment such as water heaters to the GFI receptacle used with the Kalglo heaters as the normal leakage from that equipment could add to the leakage from the Kalglo heater and false trip the GFI. If a single heater still trips the GFI receptacle when used all by itself, even after burn in, contact the factory for assistance. If heater does not get hot at all, have a qualified electrician check the receptacle for loose wiring and/or proper voltage. **NOTE: Element may smoke slightly when new heater is first energized. This is normal. A residue film is being burned off.**

CAUTION: High temperature, risk of fire, keep electrical cords, drapery furnishings, and other combustibles at least 3 feet (0.9m) from the front of the heater and away from the side and rear. To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater. Do not use as a residential or household heater. Do not install less than 6 feet (or 1.8 meters) from the floor. Do not install closer than 2 inches to a vertical surface, 6 inches to a ceiling or 36 inches over combustible material. Disconnect unit from electrical supply before attempting to service it. Service by qualified personnel only.

3. Using the wood screw hooks and "S" hooks provided, hang the heater as illustrated in Fig. 4.
4. The sensor on an MR model should hang below the heater and just above the subject to be heated.



OPERATION

WARNING: Heater must be installed properly before it is used and serviced only by qualified personnel. Do not tamper with any parts of the heater such as MR/MRM controllers, power cords or MR model sensors. Kalglo heaters do not require regular maintenance; however, if cleaning is desired, make sure the power has been turned off at the circuit breaker panel and that the heating element of the heater is cool, turn the heater off and use a damp cloth to wipe down heater surfaces and top of MR sensor. All other servicing should be performed by qualified service personnel. If heater is to be removed, store it in a clean, dry location with the cord secured so the heater and the cord will not sustain any damage.

HS models: Turn heater on or off at a wall switch or circuit breaker. Heater is either on full or off.

MRM models:

1. Turn the controller knob clockwise. The neon light will start to get brighter until the knob is fully clockwise, at which point the neon light will be on full, as well as the MRM model heater output.
2. Wherever the control knob is set, the output will remain constant, regardless of surrounding temperature. See Fig. 5 for the percent of output as per knob setting.

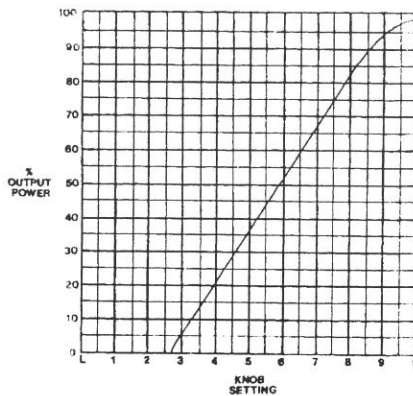


FIG. 5

MR models:

1. Hang the sensor underneath the MR model heater within the radiant heat pattern. Do not position it closer than 18 inches from the heating element. Experiment and position sensor for best performance. Sensor should be close to the subject, not the heater. When used with animals, keep sensor at least 4 inches away from animals and off the floor. Do not allow animals to touch or crowd the sensor as their body heat could falsely satisfy the sensor cutting off the heat prematurely. Observe animals for indication of their comfort and adjust heater height, sensor position, or knob setting until they look comfortable.
2. Turn the control knob clockwise. When the controller first turns on, the output light will come on steady until the desired sensor temperature is reached, at which point the controller will start to modulate (saving electricity). This will be observed by the blinking of the output light. If the sensor should become fully satisfied, the light will go out.
3. Turn the MR model heater on full for about 15 minutes. Then adjust to the desired comfort level. The sensor will automatically keep the output at the desired temperature. On the low to high scale, "L" is equivalent to 40 degrees F. (4.4 deg. C) and "H" is equivalent to 100 degrees F. (37.6 deg. C). Each graduation is equivalent to 6 degrees F. (3.3 deg. C). All temperatures are measured near the sensor. Placing a small thermometer near the sensor will aide proper set-up. Experiment with heater position, sensor position, and knob setting for best performance. Contact Kalglo with any questions or applications assistance.

GENERAL-USE APPLICATIONS

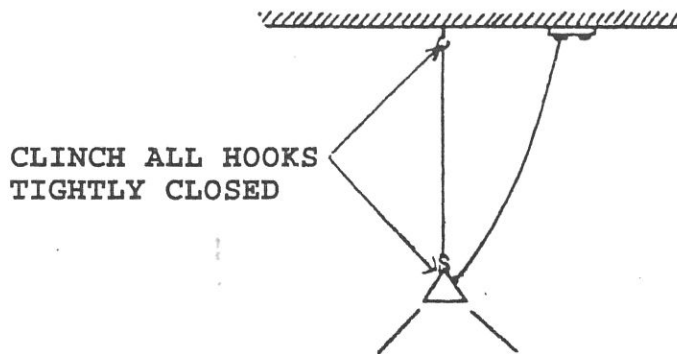
MAINTENANCE INSTRUCTIONS

FOR KALGLO ELECTRIC RADIANT INFRARED HEATERS

1. Kalglo heaters do not require regular maintenance; however, if cleaning is desired, make sure the power has been turned off at the circuit breaker panel and that the heating element of the heater is cool, turn the heater off and use a damp cloth to wipe down heater surfaces and top of MR sensor.
2. All other servicing should be performed by qualified service personnel.

Agricultural Heating Applications

TYPICAL INSTALLATION INSTRUCTIONS AS A BROODER HEATER



WARNING

1. Source of possible ignition. High temperature. Risk of fire. Keep combustible material away from front of heater. Do not use as a residential or household heater. Do not use in explosive environments.
2. Do not install closer than 2 inches to a vertical surface, 6 inches to a ceiling, or 24 inches over combustible material.
3. Warning risk of fire. Do not tilt heater if it is installed less than 6 feet from the floor. Hot surfaces. Avoid contact.
4. Disconnect unit from supply before attempting to service it. Service by qualified personnel only.
5. Install on grounded circuits only. Do not remove ground pin on the heater plug. Do not use adapters with the heater.

IMPORTANT NOTICE

Kalglo electric radiant infrared heaters are built using the finest materials and workmanship and are constructed to meet or exceed applicable safety standards. However, any electric heater is a potential source of ignition or combustion and/or electric shock. If the heater is installed near or over combustible materials or in areas of high moisture or wetness and where a person or animal can come in contact with metal parts of the heater, it is recommended the electrical circuit supplying power to the heater be protected by a dedicated ground fault interrupting (GFI) receptacle as an additional safety precaution.

INSTALLATION

1. Installation should be done by qualified personnel only.
2. Check heater for shipping damage. **Remove plastic tie(s) from the element supports.**
3. Check heater operation: Plug heater into rated supply voltage using a receptacle mounted within 6 ft. of the heater. If a receptacle is not within 6 ft. of the heater, it is recommended one be installed by a qualified electrician. An extension cord is not recommended for permanent use. Allow heating element to get red hot for 5-10 minutes. If unit is plugged into a GFI receptacle and the heater trips the GFI receptacle, plug the heater into a non-GFI protected circuit for about 30 minutes. Metal sheath heating elements, when not in use, can absorb moisture. This is normal. Plugging the heater into a non-GFI receptacle will allow the moisture to burn off. If the heater still trips the GFI when plugged back into it, contact the factory for assistance. **Note: Heating element may smoke slightly when heater is first energized. This is normal.** A residual oxide is just being burned off.
4. Hang the heater as illustrated above using the chain and hooks provided. **CLINCH ALL HOOKS TIGHTLY CLOSED!**

OPERATION AS A BROODER TYPE HEATER

HS models: Turn heater on or off at a wall switch or circuit breaker. Heater is either on full or off.

MRM models:

1. Turn the controller knob clockwise. The neon light will start to get brighter until the knob is fully clockwise, at which point the neon light will be on full, as well as the MRM model heater output.
2. Wherever the control knob is set, the output will remain constant, regardless of surrounding temperature. See Fig. 6 on Page 8 for the percent of output as per knob setting.
3. MRM models work on a phase control principle similar to light dimmers. Adjust heat to suit your requirements.

Agricultural Heating Applications

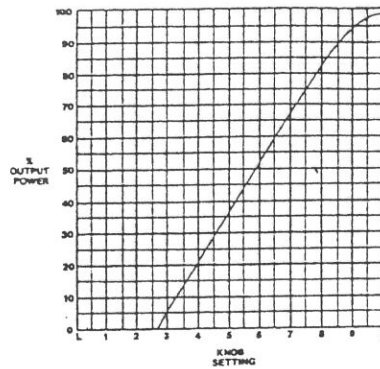


FIG. 6

MR models:

1. Hang the sensor underneath the MR model heater within the radiant heat pattern. Do not position it closer than 18 inches from the heating element. Experiment and position sensor for best performance. Sensor should be close to the subject, not the heater. When used with animals, keep sensor at least 4 inches away from animals and off the floor. Do not allow animals to touch or crowd the sensor as their body heat could falsely satisfy the sensor cutting off the heat prematurely. Observe animals for indication of their comfort and adjust heater height, sensor position, or knob setting until they look comfortable.
2. Turn the control knob clockwise. When the controller first turns on, the output light will come on steady until the desired sensor temperature is reached, at which point the controller will start to modulate (saving electricity). This will be observed by the blinking of the output light. If the sensor should become fully satisfied, the light will go out.
3. Turn the MR model heater on full for about 15 minutes. Then adjust to the desired comfort level. The sensor will automatically keep the output at the desired temperature. On the low to high scale, "L" is equivalent to 40 degrees F. (4.4 deg. C) and "H" is equivalent to 100 degrees F. (37.6 deg. C). Each graduation is equivalent to 6 degrees F. (3.3 deg. C). All temperatures are measured near the sensor. Placing a small thermometer near the sensor will aide proper set-up. Experiment with heater position, sensor position, and knob setting for best performance. Contact Kalglo with any questions or applications assistance.
 - a. Keep top of sensor clean. A buildup of dirt will act as a layer of insulation to the heat sensor, thereby retarding the response time to changes in temperature.
 - b. When heating animals, use a sensor guard or keep the sensor out or reach to prevent animals from contacting or chewing on the sensor or attached wiring.
 - c. Unplug MR model heater when not in use.
4. MR models are modulated by a zero switching principle. The AC sine wave will be interrupted at zero crossing points.

