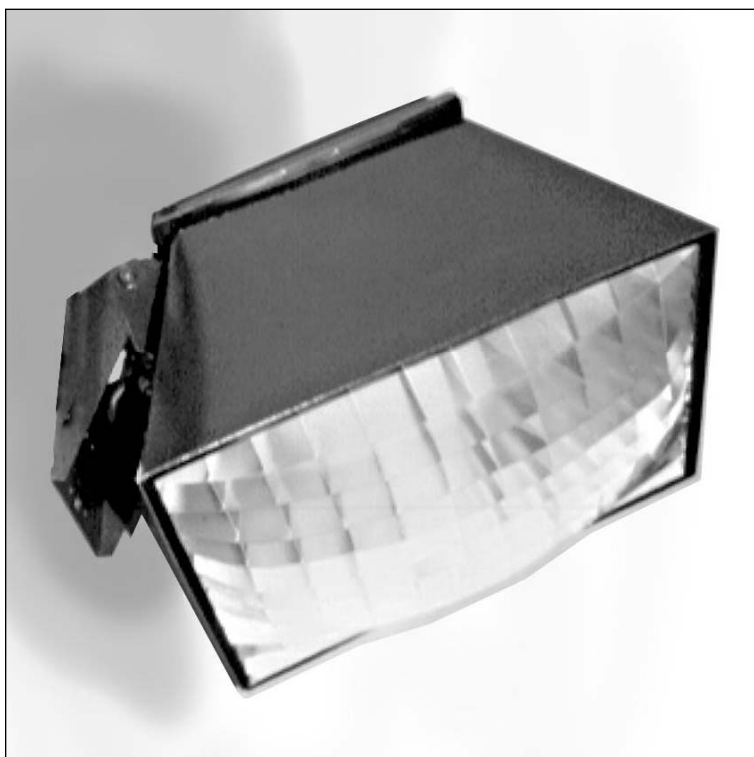




Schaefer HotZone®
HZS Series Electric Spot Heater
High Output Infrared Heater

INSTALLATION & OPERATION INSTRUCTIONS



**** HOTZONE® HEATERS MUST BE INSTALLED
BY A LICENSED ELECTRICIAN. ****



SCHAEFER
Ventilation Equipment

800-779-3267

sales@schaeferfan.com • www.schaeferfan.com

Specifications

Congratulations on purchasing a Schaefer HotZone® Electric Infrared Heater. Unlike forced air heaters, HotZone® heaters warm people and objects, but not the air, with infrared radiation. Your new heater has no moving parts, and should give you many years of maintenance-free comfort.

HotZone® heaters have the patented, lobster eye inspired, compound reflective IRLens™ that focuses and directs the infrared energy into a beam (or a spot). These lenses are lightweight aluminum grids that look like a four-walled honeycomb structure and are capable of magnifying without overheating.

Because HotZone® heaters focus and direct the infrared energy into a beam:

- HotZone® heaters can be installed out of the way of people and equipment.
- The radiant intensity is much less sensitive to distance from the heater (your head doesn't cook while your feet freeze).
- They deliver up to five times as much infrared energy to the spot, compared to a similar powered, unfocused high intensity infrared heater.
- They will raise the surface temperature of a 14 square foot area by 15° with a single 1500 watt heater mounted eight feet above it.
- They will raise the surface temperature of a 25 square foot area by 20° with a single 3000 watt heater mounted ten feet above it.

Plan your installation by identifying the area you want heated and how much temperature increase you need. Imagine the heater as a kind of floodlight and place it so as to cover your target area with enough heat. The temperature increase resulting from the heater "shining" on a target depends on the power of the heater, the distance from the heater to the target and how close the target is to the center of the spot.

The heater unit with fixed mount is ETL certified to UL 2021 (Fixed and Location Dedicated Electric Room Heaters) for installation both indoors and outdoors. The movable mount options are not ETL certified, but include tip switches and other features which make them safe for a variety of applications.

WARNING

The safety of this product can only be guaranteed if these instructions are followed. Please keep them for future reference.

- *Always disconnect the heater from the main electrical supply during installation and/or replacement of the heater element.*
- *Infrared energy heats people and objects when it is absorbed. Flammable objects placed too close to the heater lens could catch fire.*

POWER SUPPLY	HZS15	120V = 12.5A 240V = 6.3A	208V = 7.2A 277V = 5.4A	
<i>All @ 50/60Hz A = current per stage</i>	HZS30	120/240V = 12.5/6.3A 240/480V = 6.3A	208V = 7.2A 277V = 5.4A	208V-Delta = 4.8A
	HZS50	208V = 12.0A 120V = 13.9A 480V = 10.4A	208V-Delta = 8.0A 277V = 9.0A 480V-Wye = 6.0A	208V-Wye = 13.9A 240/480 = 10.4A

*** IMPORTANT INSTRUCTIONS ***

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 assembling, installing and using this heater.
2. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. If provided, use handles when moving this heater. Keep combustible materials, such as furniture, pillows, bedding, paper, clothes and curtains at least 48" (1500 watt) / 66" (3000 watt) from the front of the heater and keep them away from the sides and rear. ***Do not install closer than the minimum clearances to any surface.***
3. Extreme caution is necessary when any heater is used by or near children or persons that may not have reasonable judgement around appliances. The heater should not be left unattended while operating.
4. Always unplug heater when not in use.
5. Do not operate any heater with a damaged cord or plug or after the heater malfunctions, has been dropped or damaged in any manner. Return heater to dealer for examination, electrical or mechanical adjustment, or repair.
6. This heater is not intended for use in bathrooms, laundry areas and similar indoor locations. Never locate heater where it may fall into a bathtub or other water container.
7. Do not run cord under carpeting. Do not cover cord with throw rugs, runners or similar coverings. Arrange cord away from traffic area and where it will not be tripped over.
8. To disconnect heater, turn control OFF (if provided), then remove plug from outlet.
9. Connect to properly grounded outlet only. The heater should *always* be connected to a grounded circuit. If a GFCI socket is not available, GFCI adapters can be purchased locally. Heater must be installed according to NEC and all local electrical codes. Be sure the electrical supply is adequate for the heater (voltage/amps/phase) while allowing for line losses. Use supply wires suitable for 90° C.
10. Do not insert or allow foreign objects to enter the heater or block any ventilation openings as this may cause an electric shock or fire, or damage the heater. Do not cover or obstruct the heater while operating.
11. A heater has hot and/or arcing and/or sparking parts inside. Do not use it in areas where gasoline, paint, flammable liquids or highly combustible dusts are used or stored.
12. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
13. Do not use an extension cord with this heater.
14. If the unit is installed in proximity of tents or awnings, please be sure that recommended installation heights and clearances are respected, and that the heater is not in direct contact with the tent or awning material.
15. Allow for user angle and directional adjustment, if possible, as heating requirements change. The optimal mounting angle is between directly down and 45°. Comfort is best obtained with the heater off to one side and angled at 35°. Install heaters so that items in the infrared beam do not overheat.
16. Burned-out elements cannot be repaired and must be replaced. The element can be replaced by the user; please follow the instructions provided. ***Always disconnect the heater from the main electrical supply during installation and/or replacement of the heater element.***
17. To prevent a possible fire and to increase the life of the heater, always install heater with the junction box on the low side. ***Failure to mount the heater with the junction box on the low side may void the warranty.***
18. Use fast-blow fuses only. Do not replace fast-blow fuses with less expensive slow-blow fuses.

*** SAVE THESE INSTRUCTIONS ***

Installation Notes cont'd

For an effective and efficient heating solution, some or all of the following heater controls can be utilized: on/off switches, power controllers (dimmers), timers and thermostats. Contact your local licensed electrician or your Schaefer HotZone® dealer for recommendations and assistance.

CAUTION

**** DO NOT USE THIS HEATER FOR APPLICATIONS FOR WHICH IT IS NOT INTENDED ****

HotZone® heaters are intended for heating people or objects from a distance in excess of the minimum distance to combustibles. Use of the heater for applications such as paint drying or equipment heating from a short distance where infrared energy will reflect back toward the heater will overheat the element, causing early element failure and negating the warranty.

CAUTION

**** DO NOT USE THIS HEATER AS A PORTABLE HEATER ****

HotZone® heaters are designed, listed and approved as fixed and location-dedicated heaters. If the heater is used as a portable heater there is a great risk of fire and/or heater damage if the heater is placed too close to combustibles or if the heater tips over.

The Schaefer HotZone® electric heater can be wall- or ceiling-mounted from an existing or new electrical junction box.

Be sure you are supplying the correct voltage to the heater, allowing for line losses. The heater's voltage requirements are marked on its shipping box and on its ETL certification label. *Too much voltage will burn the heater element out immediately. Too little voltage or inadequate current capacity will cause the heater element to run cool, and can cause the supply circuit to overheat dangerously.*

Always be sure the supply voltage is turned off to the junction box before starting installation.

After the heater is installed and power is turned on, the element should begin glowing within 20 to 30 seconds and glow a uniform red-orange color within two to three minutes. *If it begins glowing more quickly or glows very brightly, turn the heater off immediately and re-check the supply voltage.*

The heater will smell very hot for the first few minutes of operation, then will stop emitting an odor.

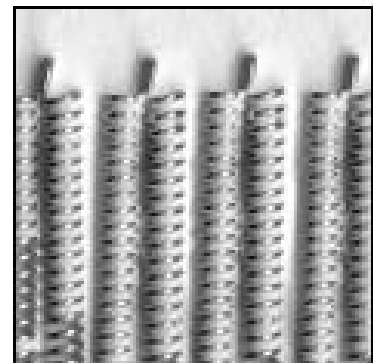
If the position of the heater needs to be adjusted after it is attached to the mount, be very careful. **DO NOT GRAB THE HEATER HEAD AND TWIST!** The heater can be adjusted up and down, but it cannot be adjusted from side to side.

Do not touch or allow any person or object to come in contact with the heater during operation as shell temperature will reach about 190° F.

The HotZone® heating element operates at approximately 1800° F. The element is resistant to thermal and mechanical shock, and is appropriate for use in both wet and dry locations.

The element has an expected life of 2000 hours. When an element burns out, it cannot be repaired and must be replaced. For replacement, have your heater model number available and call your dealer or Schaefer Ventilation to order the correct element.

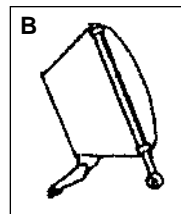
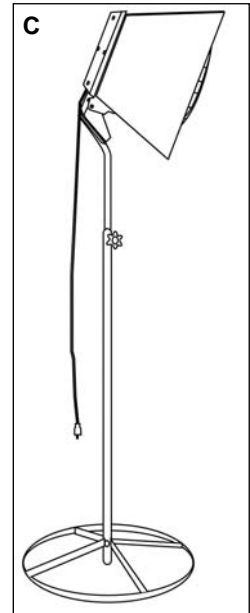
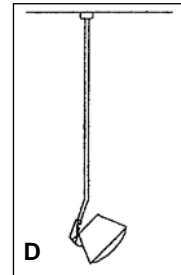
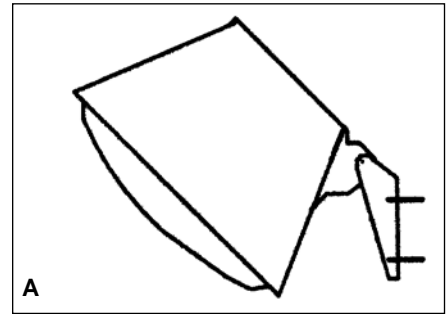
Replacement high-temperature lead wires must be capable of handling 1000° F and have stainless steel terminals.



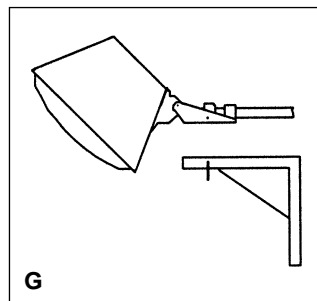
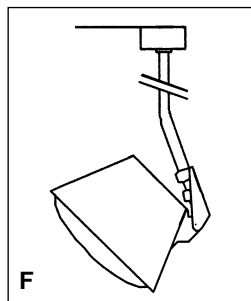
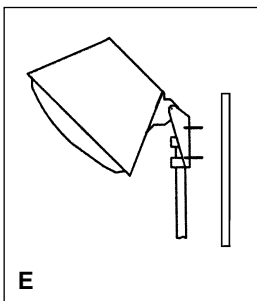
MOUNTING OPTIONS

The standard universal mounting tab can be used in many ways. It may have to be removed and rotated for some installations. It has been designed to fit a wide variety of junction boxes.

- A** Universal Mounting Tab - standard attachment to a junction box in the wall.
- B** Short Stand (a.k.a. Hoop Kit) - moveable stand for floor level heating.
- C** Tall Stand (a.k.a. VH-PED100) - movable stand for head level heating.
- D** Conduit Mount (not available from Schaefer) - fastest way to securely hang a heater from the ceiling and simultaneously provide electric service.
- E** Mount with the stock multi-mount bracket directly to a wall or upright. Use screws, bolts or u-bolts as required.
- F** Hang the heater directly from an electrical junction box with EMT connected with compression fittings. Attach the EMT to the bracket securely. If feeding wire in wet locations, allow room at the end of the pipe for the flex junction. A 20° bend in the last 8-12" of the EMT gives a "pendant" style look to the installation of heaters where the junction box has to be on the bottom side.
- G** For horizontal mounting to a flat surface, a single bolt placed in one of the middle holes allows for left/right adjustment.

**WARNING**

To prevent a possible fire and to increase the life of the heater, always install heater with the junction box on the low side. Failure to mount the heater with the junction box on the low side may void the warranty.

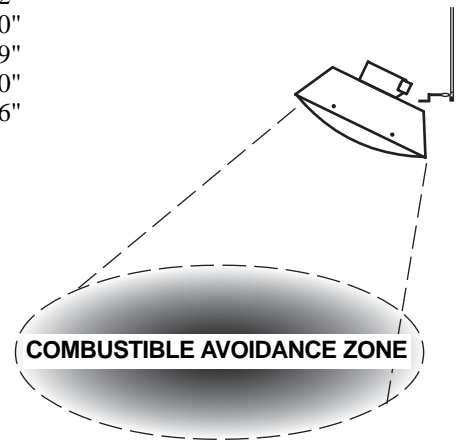


Mounting the Heater cont'd

NOTES

- Mount the heater at or above the **MINIMUM MOUNTING HEIGHT**.
- Make sure the **MINIMUM DISTANCE TO COMBUSTIBLES** is maintained around and below the heater.
- The bulk of the heat radiates from the lens of the heater and care must be taken keep combustibles out of the **COMBUSTIBLE AVOIDANCE ZONE** of the beam.
- At minimum distance to combustibles heaters will not raise the temperature of a highly absorptive surface more than 90° F.
- The minimum distances around the heater are not as critical as the combustible avoidance zone below the heater. **DO NOT** allow the heater to be aimed at a wall or any other combustible material.

Mounting Angle	HZS15		HZS30		HZS50	
	0°	45°	0°	45°	0°	45°
MINIMUM MOUNTING HEIGHT	72"	72"	72"	72"	96"	96"
MINIMUM DISTANCE TO COMBUSTIBLES (around heater)						
Above	6"	6"	9"	9"	12"	12"
Back	9"	9"	18"	18"	30"	30"
Front	9"	30"	18"	41"	30"	59"
Side	9"	9"	18"	18"	30"	30"
Below (in beam)	48"	48"	66"	66"	96"	96"
DIAMETER OF COMBUSTIBLE AVOIDANCE ZONE (below heater)						
Distance from lens						
12"	26"		32"		38"	
24"	36"		42"		48"	
36"	46"		52"		58"	
48"	56"		62"		68"	
60"			72"		78"	
72"			82"		88"	
84"					98"	
96"					108"	



Electrical Connection

All wiring must be in accordance with the National and Local Electrical Codes. The heater housing must be properly grounded. Refer to the label on the heater for model identification.

1. Install circuit protection for each heater or bank of heaters as required by the NEC and local codes.
2. Connect the service to the heater with properly sized conductors and wire nuts rated for 90° C. Use waterproof conduit or flex if installed outdoors or in wet areas.
3. Attach grounding wire to the green screw in the bottom of the junction box.
4. Connect service to the high temp wires according to the appropriate wiring schematic.
5. Junction box has 17.3 cubic inches (112 cubic centimeters) of wiring space and a 1/2 inch threaded hole.
6. Supply heater control equipment as required to turn heaters on and off. Consider additional controls to allow each heater to be staged for low/high voltage operation, to be dimmed, or to be controlled by sensors or timers.

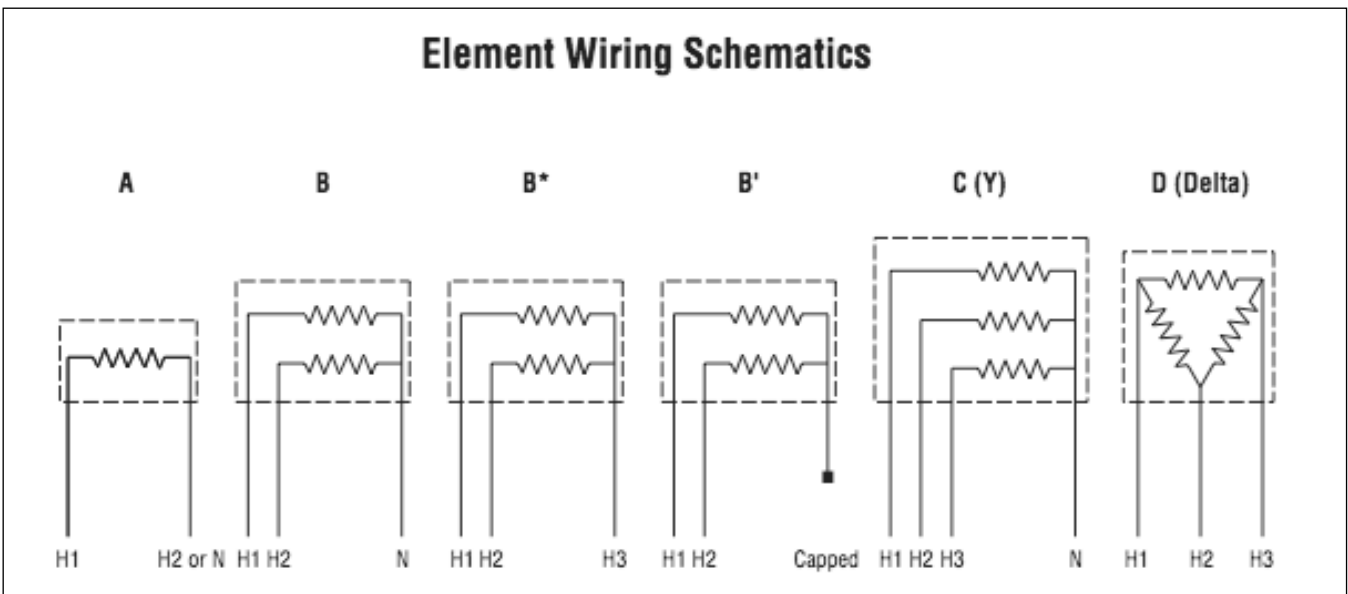
CAUTION
Use supply wires and connectors suitable for 90° C (194° F) in the junction box.

Heater Elements

Element	Heater	Power (W)	No. of Stages	No. of Wires	Schem.	Voltage (V)	Alt. Schem.	Voltage (V)	
7501	HZRE15120C	HZS15120	1500	1	2	A	120		
7503	HZRE15208C	HZS15208	1500	1	2	A	208		
7504	HZRE15240C	HZS15240	1500	1	2	A	240		
7505	HZRE15277C	HZS15277	1500	1	2	A	277		
75301	HZRE30120/240C	HZS30120/240	3000	2	3	B	120	B'	240
75302	HZRE30208C	HZS30208	3000	2	3	B*	208		
75304	HZRE30208DC	HZS30208D	3000	3	3	D	208		
75305	HZRE30240/480C	HZS30240/480	3000	2	3	B*	240	B'	480
75309	HZRE30480C	HZS30480	3000	2	3	B'	480	B*	240
75501	HZRE50120C	HZS50120	5000	3	4	C	120	C	208
75502	HZRE50208SC	HZS50208	5000	2	3	B*	208		
75503	HZRE50208YC	HZS50208Y	5000	3	4	C	208	C	120
75504	HZRE50208DC	HZS50208D	5000	3	3	D	208		
75505	HZRE50240/480C	HZS50240/480	5000	2	3	B*	240	B'	480
75507	HZRE50277C	HZS50277	5000	2	3	B	277		
75510	HZRE50480Y	HZS50480Y	5000	3	4	C	480	C	277

Notes:

- All heaters have a ground wire attached to the heater shell (not the element).
- Alternate connections for dual service elements are under "Alternate Schematic".
- Schematics with an asterisk (i.e., B*) connect to a common hot wire, not "N" (neutral).
- Schematics with an apostrophe (i.e., B') require the "N" (neutral) to be capped.
- Heater elements and wiring schematics that allow high/low staging are shaded.



Maintenance & Troubleshooting

MAINTENANCE

- The heater body can be washed with gentle detergent and a soft wash cloth. **Do not use a pressure washer.** With an air hose regulated to 30 psi, blow off any dust and dirt from in front of the heater that has accumulated on the reflective surfaces of the heater and reflective lens. A vacuum cleaner can be used as well. Accumulated dirt will degrade performance.
- Blow off or vacuum any accumulated dirt on the vent holes of the heater and make sure they are not bent such that the vent area is reduced.
- When not installed or in use, store the heater in a dry, dust-free place and be sure the lens-assembly is protected from any possible damage.
- The heater lens is manufactured from thin aluminum and is easily bent and damaged. Heater performance deteriorates when the lens is bent or damaged. In most cases the lens can be bent back into shape by hand or with pliers. If the lens cannot be repaired, it can be replaced.
- If the heater is turned on when wet it may steam and sizzle a bit but this will subside as it dries.

TO CHANGE THE COLOR OF THE HEATER

- The outer housing of the heater can be spray painted with high-temp metal paint. **DO NOT** paint the bare aluminum lens or inside surfaces. (The bare aluminum reflects 100% of the infrared heat; paint absorbs infrared and will cause the unit to overheat. ***This will void the warranty.***)

TROUBLESHOOTING

At full power and after two to three minutes of warm-up time, the heater element should glow a warm orange color, similar to the color of coals in a hot fire.

If the element does not warm up at all:

- Is the service power on at the circuit breaker?
- Is there a switch or dimmer in the circuit? Is the switch on?
- Is the heater connected to the appropriate power source (plug or junction box)?
- Are the fuses intact? Turn off the power at the circuit breaker to check the fuses.
- Is the element in working condition? Burned out elements normally have visible burn marks on the face of the element. If there is no evidence of damage, and you still suspect the element, turn off the power at the circuit breaker, disconnect the service power and check element resistance. It should be between 10 and 50 ohms, depending on the element.
- Are the high temperature leads connected to the element? Turn off the power at the circuit breaker. Remove the element from the heater housing and check the connections at the back of the element.

If the element barely glows:

- Is the heater on a dimmer? Is the dimmer turned full on and operating correctly?
- Is the heater connected to the correct line voltage (under load condition) for its element type? 120V models must be plugged into an outlet that provides 120V. If the outlet provides less than 120V the element will not operate correctly.
- Is the element wired correctly, and are all connections intact? Note: three phase devices where one leg is disconnected will operate with reduced output.

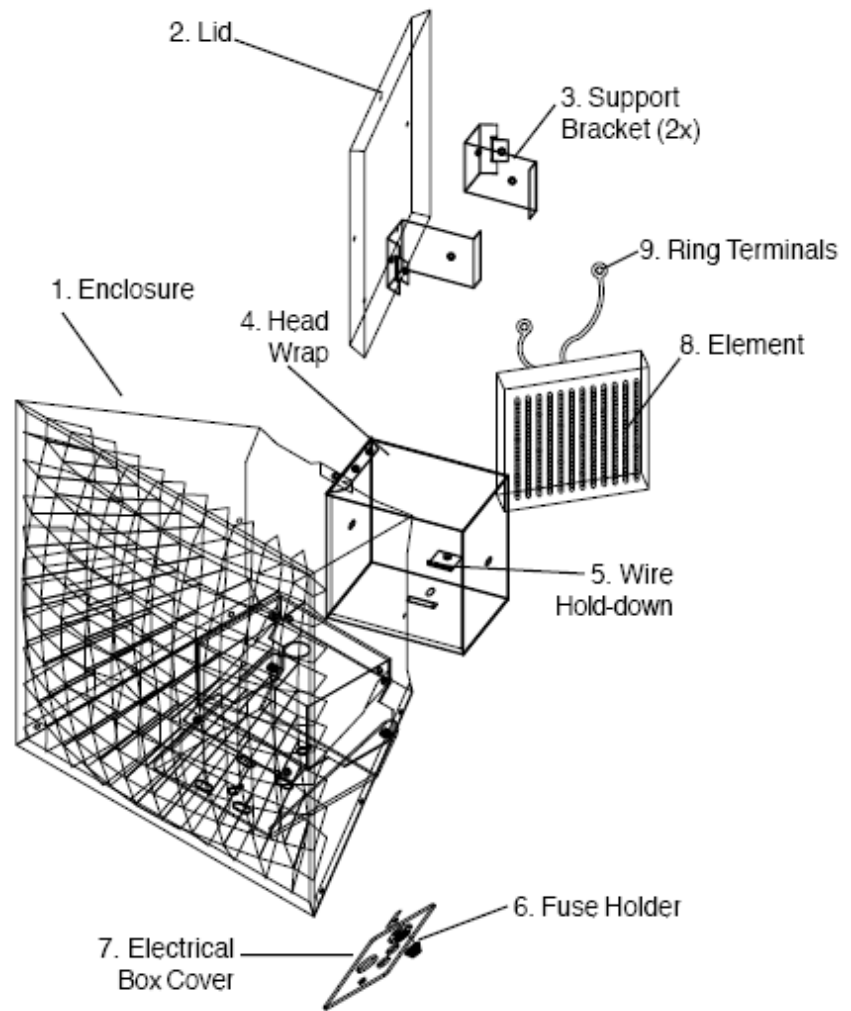
If the element glows a bright orange-white and heats up very quickly:

- ***The heater is receiving too much power and will burn out very quickly if it is not turned off.***
- Is the heater wired correctly for its element type?
- Is the element damaged? A short circuit between adjacent coils will cause some coils to go dark and some coils to overheat. Damaged elements cannot be repaired and must be replaced.

Element Replacement

Elements have an expected life of over 2,000 hours. When an element burns out, it cannot be repaired and must be replaced with a new element. To change the element on your heater:

1. Turn off the supply power at the panel.
2. Disconnect and dismantle the heater.
3. Remove the lid.
4. Remove the nut and bolt from the ring terminals on the back of the element.
5. Remove the screws that fasten support brackets to enclosure (if necessary).
6. Pull the head wrap, element and support brackets out of the enclosure just enough to expose the screws on the side of the head wrap.
7. Remove the support brackets from the head wrap and remove the top two screws on the head wrap allowing the old element to be pushed out and replaced by the new element.
8. Push the new element tight to the face of the head wrap and replace the top two screws.
9. Set the head wrap with the support brackets into the enclosure and pull the excess wire back through the electrical box and secure with clamp. Position the support brackets on each side of enclosure and replace and tighten the two screws.
10. Re-install the nut and bolt into ring terminals.
11. Place lid onto enclosure and tighten screws.
12. Push 1/4" plug into fuse holder and reconnect wire with a wire nut.
13. Place on the electrical box cover and tighten screws.
14. Re-connect and re-mount the unit.
15. Test unit.



Note: If the voltage has been changed you must update the ETL label on the heater. Take a ballpoint pen, cross out the old voltage and put an "x" in the new voltage to update the label.

Voltage Conversion

You can change the operating voltage of your heater by replacing the element or by switching to the alternate wiring scheme for a dual-use element. Perform the applicable procedure to convert your heater to a different voltage.

NEW ELEMENTS WITH SAME NUMBER OF WIRES

1. For elements that have the same 2, 3, or 4-wire connection to the element, follow "Element Replacement" directions.
2. Test the unit.
3. Take a ballpoint pen, cross out the old voltage and put an "x" in the new voltage to update the ETL label. If the voltage has not changed the label does not need to be updated.

NEW ELEMENTS WITH DIFFERENT NUMBERS OF WIRES

For elements with different numbers of wire connectors to the element, remove the electrical box cover with the fuses.


1. Refer to "Element Replacement" to remove the element from the heater.
2. Unscrew the wire nut and unplug the fuse(s).
3. Remove or add and connect high temperature wires as needed and reseal the passage way with silicone.
4. Obtain and install a different fuse plate as needed.
5. Test the unit.
6. Take a ballpoint pen, cross out the old voltage and put an "x" in the new voltage to update the ETL label. If the voltage has not changed the label does not need to be updated.

DUAL-USE ELEMENTS

1. Refer to the "Heater Elements" chart to determine if you have a dual-use element and how to reconnect it at a different voltage.
2. Reconnect the service to the heater leads, following the appropriate schematic.
3. Test the unit.
4. Take a ballpoint pen, cross out the old voltage and put an "x" in the new voltage to update the ETL label. If the voltage has not changed the label does not need to be updated.


CAUTION

New or replacement element lead wires must be of the very high temperature variety, capable of handling 1000°F, and with stainless steel terminals. These are available from Schaefer or your Schaefer HotZone® dealer.



HotZone
www.schaeferfan.com
Schaefer Ventilation Equipment, LLC
Sioux Rapids, MN USA - 1.800.779.3297

ELECTRIC RADIANT HEATER - Interior & Exterior Installation
Électrique Chaleur Radieuse - Intérieure & Extérieure Installation
Patented by one or more of the following: #4,896,656 & #4,841,947



LISTED
CONFORMS TO
UL-2021 and
CAN/CSA-C22.2 No. 46

SERIAL #

Amperity & Schematics			
Refer to instructions for schematics.			
15	30	50	
12.5 A	25 B'	41.7 C	
12.5 B"			
7.2 A	14.4 B"	24.0 C	
	8.3 C	13.9 C	
	8.3 D	13.9 D	
6.3 A	12.5 B"	20.8 B"	
	10.8 B"	12.0 D	
5.4 A	10.8 A	18.1 B"	
	10.8 B"		
	8.7 A	14.5 A	
	6.3 B'	10.4 B'	
		6.0 C	

Warning! - L'avertissement!
High temperature. Risk of fire if used with or near combustible materials. Not suitable for residential or household use. Maintain the minimum distance to combustibles and maintain minimum mounting height. Service only while the heater is disconnected from the supply circuit. Use only copper or aluminum wire. *Employez seul cuivre ou le fil de l'aluminium.*

Caution! - Attention!
Use supply wires suitable for 90°C. Install so that the electric junction box is on the low side. *Employez de fils d'alimentation adéquate pour 90°C. Installez de sorte que la boîte de jonction électrique soit du bas côté.*

HZE heaters are for mounting on a standard outlet box. *Ce radiateur est prévu pour montage sur une boîte de sortie standard.*

Approved - Approuvez:
For use in farm facilities housing livestock. (US and Canada). *Pour l'usage dans les facilités de la ferme avec le bétail.*

INSTALLATION MOUNTING REQUIREMENTS
Minimum Distance to Combustibles
Espaces Permis Des Combustibles

KW Lens	15		30		50	
	Spot	Aisle	Spot	Aisle	Spot	Aisle
Angle L'angle	0°/45°	0°/45°	0°/45°	0°/45°	0°/45°	0°/45°
Side Côté	9°/9°	15°/15°	18°/18°	30°/30°	30°/30°	48°/48°
Front Front	9°/30°	6°/32°	18°/41°	9°/45°	30°/59°	15°/66°
Back Arrière	9°/9°	6°/6°	18°/18°	9°/9°	30°/30°	15°/15°
Top Sommet	6°/6°	6°/6°	9°/9°	9°/9°	12°/12°	12°/12°
Below Dessous ‡	48°	48°	66°	66°	96°	96°

Minimum Mounting Height
Le minimum Monter l'Hauteur

Below ‡	72"	72"	72"	72"	96"	96"
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A=2wr Series, B'=3wr Series, B''=3wr Parallel, C=4wr Wye, D=3wr Delta

Options, Accessories and Controls

STANDARD FEATURES

- 5X Lens Patented feature that magnifies the radiant heat into its target area by a factor of five. The lens consists of an aluminum grid of reflectors placed in front of the heater that will cover a circular (spot) pattern.
- Element The element operates at 1800° F, with the highest conversion efficiency of electricity into heat, outperforming metal sheath, quartz tube and quartz lamps. It withstands thermal shock and vibration and has an expected life of over 2000 hours.
- Waterproof Design is listed for outdoor installation and can be mounted in damp and wet locations.
- Universal Mount Tab Universal mount bracket is adjustable in many ways allowing for direct mounting to a stand, pole, wall, jib, awning, framework and ceiling hung conduit pipe while preserving waterproof integrity.
- Serviceable Designed for easy service, speeding element replacement.
- Heavy Duty All non-ferrous construction. Suitable for use in farm facilities in US and Canada.

OPTIONS

- Color Powder coat finishes of almost any color with a variety of glosses (20% to 90%), textures (mild, wrinkle, sand and hammertone) and veined (silver, gold, copper, black).

ACCESSORIES

- In-Ceiling Mounts Fixtures that allow direct mounting in any ceiling cavity that is vented, such as eaves and drop ceilings. Three different in-ceiling mounts exist for recessed, flush and drop mounting. Each can be coated to suit installation.
- Floor Stand A mobile accessory for circular heaters that adds framework for easy relocation. Includes a crossed wire lens guard. (Note: this combination is not ETL listed.)
- Stands Lightweight stands for 1500W heaters at elevations of up to 6'.

CONTROLS

- On/Off Simple on/off methods that use direct connections or relays. Switches can control single or multiple heaters.
- Staging Switches that turn on parts of the heater individually or parts of the service to multiple heaters for times of lower heat requirements.
- Infinite Control Continuous "dimming" of heater from 100% down to 0%.
- Thermostat Used to provide freeze protection in addition to other controls for automatic staging limits.

**Schaefer Ventilation Equipment, LLC
Schaefer Limited Warranty Policy**

Schaefer Ventilation Equipment, LLC (SVE) provides the following limited warranty from the date of purchase to the original purchaser of our products:

- I. Two-year coverage (unless otherwise indicated below) applies to all products, components and assemblies provided by SVE that prove to be defective in material or workmanship. Any such defective product will be repaired or replaced at SVE's option, with the defective product returned upon approval to SVE, F.O.B Schaefer Ventilation Equipment, LLC, Sauk Rapids, Minnesota.

- II. This warranty does not cover:
 - a. Failure, damage or malfunction as a result of:
 - i. Improper installation or installation not in accordance with installation instructions.
 - ii. Operating conditions that vary from SVE's operating instructions.
 - iii. Misuse, abuse, negligence, alteration, or accident.
 - iv. Transporting the product.
 - v. Improper operation or lack of appropriate or regular maintenance of the product.
 - b. Loss of time, inconvenience, loss of use of the product or other consequential or incidental damages.
 - c. Parts that need replacement due to normal wear and tear.
 - d. Superficial or cosmetic rust or corrosion.
 - e. Any product whose name plate has been removed.

Products with warranty periods that differ from the standard 2-year warranty are as follows:

- | | |
|--|----------|
| • Poly Housings | 25 years |
| • Fiberglass Housings | 15 years |
| • Low-intensity Tube Heater Exchange Tubes | 5 years |
| • K-Series, 2-Stage, Compact and Stainless Steel Tube Heaters | 1 year |
| • Quartz and Zubri Heaters | 1 year |
| • Shutter Motors and Aluminum Riveted Fan Blades | 1 year |
| • HotZone™ Electric Elements | 120 days |
| • Quartz Bulbs | 90 days |
| • Evaporative Cooling Pads | 90 days |
| • Economy Line Fans | 90 days |
| • Any product or part noted as an exception to the standard 2-year warranty in the product's operating manual. | |

SVE reserves the right to add or delete products from this exception list at any time.

THERE ARE NO WARRANTIES OF MERCHANTABILITY OR FITNESS OF USE.

SVE reserves the right to change product design and specification without prior notice or liability.

The above constitutes the sole warranty offered by Schaefer Ventilation Equipment, LLC.

Effective Date: February 1, 2009

All information, illustrations and specifications in these instructions are based on the latest product information available at the time of printing. Product specifications subject to change.



SCHAEFER
Ventilation Equipment

"Quality and Innovation since 1951"

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