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

ALWAYS INSTALL HEATER WITH THE JUNCTION BOX ON THE LOW SIDE.
2

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HZE & HZS Series Control Options

A number of control options are available commercially that can enhance the performance and enjoyment of your HotZone heater. Contact your local licensed electrician for more information.

ON/OFF SWITCHES
Control single or multiple heaters using direct connections or relays.

STAGING
Switches that turn on parts of the heater individually or parts of the service to multiple heaters for times of lower heat requirements.

DIMMERS
Continuous control or “dimming” of heater from 100% down to 0%.

THERMOSTATS
Used to automatically turn heater on or off at specific temperatures.

TIMERS
Used to automatically turn heater on or off at specific times.

ETL Label

HotZone
www.schaeterfan.com

ELECTRIC RADIANT HEATER - Jennings & Interior Installation (Electric Chauffer Radiateur - Intérieur d'Installation) Pared fijado por uno de los siguientes: 64.664.666 & 64.641.647

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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 focusing the infrared energy 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 similar powered, unfocused high intensity infrared heaters.
- 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.

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. DO NOT allow the heater to be aimed at a wall or any other combustible material.

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.

**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 maintenance of the heater.**
- **Infrared energy heats people and objects when it is absorbed. Flammable objects placed too close to the heater lens could catch fire.**

**CAUTION**

**HOTZONE HEATERS MUST BE INSTALLED BY A LICENSED ELECTRICIAN, IN ACCORDANCE WITH THE NATIONAL AND LOCAL CODES HAVING JURISDICTION**
* 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 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.

3. If heater has a cord, 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.

4. If heater has a cord and plug, 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.

5. 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.

6. If the unit is installed in proximity of tents or awnings, make sure that recommended installation heights and clearances are respected, and that the heater minimum distances to any flammable materials are maintained.

7. 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.

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

9. 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.

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

** 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.
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.

- If multiple HotZone heaters are to be installed, maintain a minimum 6” air gap between the heaters.

- The bulk of the heat radiates from the lens of the heater and care must be taken to 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.

- If multiple HotZone heaters are to be installed, the minimum distance to combustibles must be doubled where the radiant beams overlap.

- 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.

<table>
<thead>
<tr>
<th>Mounting Angle</th>
<th>HZX15 0°</th>
<th>HZX15 45°</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM MOUNTING HEIGHT</td>
<td>72&quot;</td>
<td>72&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MINIMUM DISTANCE TO COMBUSTIBLES (around heater)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
</tr>
<tr>
<td>Back</td>
</tr>
<tr>
<td>Front</td>
</tr>
<tr>
<td>Side</td>
</tr>
<tr>
<td>Below (in beam)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIAMETER OF COMBUSTIBLE AVOIDANCE ZONE (below heater)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from lens</td>
</tr>
<tr>
<td>12&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
</tr>
<tr>
<td>36&quot;</td>
</tr>
<tr>
<td>48&quot;</td>
</tr>
</tbody>
</table>

CAUTION

** DO NOT LEAVE HEATER OPERATING UNATTENDED **
** DO NOT INSTALL THIS HEATER ABOVE FLAMMABLE MATERIAL **

The elements in HotZone heaters will eventually fail, much like a light bulb will eventually fail. When a heater element fails, extremely hot material may be ejected from the heater and this material can damage or ignite materials under the heater. To avoid these dangers, do not install heaters directly above flammable materials or materials that can be damaged by hot materials, do not leave the heater operating unattended.
There are three standard mounting configurations for HZE Series heaters and one that must be purchased separately.

The angle adjustment assembly on the back of the heater is designed for mounting flexibility, but the correct configuration should be determined BEFORE the heater is attached to the universal fixed mount.

1. Heaters to be mounted on the wall should have the angle adjustment assembly attached below the center of the heater (standard configuration - Figure 1).

2. Heaters to be mounted on the ceiling and aimed sideways should have the angle adjustment assembly attached above the center of the heater (standard configuration, heater mounted “upside down” - Figure 2).

3. Heaters to be mounted on the ceiling and aimed down should have the angle adjustment assembly attached in the center of the heater (assembly needs to be reversed - Figure 3 - heater cannot adjust far enough without reversing).

**REVERSING THE ANGLE ADJUSTMENT ASSEMBLY FOR CEILING MOUNT**

*Save all hardware for re-use!*

1. Remove the two cap screws from the back of the heater, which are holding the louvered element tray in place.

2. Slide the element tray out of the heater. Pull the high temperature element wires through the hole in the angle adjustment assembly to free the element.

3. Remove the two allen screws that attach one end of the curved mounting plate to the heater.

4. Remove the two allen screws that secure the other end of the curved mounting plate, internal ring clamps and angle adjustment assembly to the heater. Detach the ground wire as well.

5. Reverse the orientation of the curved mounting plate and angle adjustment assembly.

6. Re-attach the curved mounting plate, ring clamps and angle adjustment assembly to the heater. Re-attach the ground wire.

7. Feed the high temperature element wires through the angle adjustment assembly and slide the element tray back into the heater. Fasten the element tray to the heater.

---

**FIXED WALL MOUNT**

An OPTIONAL fixed wall mount is available from your Schaefer HotZone dealer. This mount consists of a three-position bracket that attaches to a post or wall, and the heater plugs into an outlet located nearby. Additional assembly instructions are provided with the mount.
HZE Series Mounting Instructions

UNIVERSAL FIXED MOUNT

This mount attaches the heater to a junction box in the ceiling or wall. To mount directly to a wall (not to a junction box) optional accessories are required.

Choose a location that meets or exceeds the minimum distance to combustibles on all sides and in front of the heater. Mount the heater at least 72" above the ground. Refer to CLEARANCE TO COMBUSTIBLES.

NOTE: Does NOT include hardware (screws) for attaching the universal mounting plate to the junction box.

Tools required:

- #2 Phillips head screwdriver
- Tools required to attach universal mounting plate to junction box

1. Turn off supply voltage to the junction box at the panel.

2. Thread the supply wires through the hole in the center of the universal mounting plate. Orient the universal mounting plate so the four cover plate mounting holes are on the sides, not the top and bottom. Attach the universal mounting plate to the junction box with appropriate user-supplied screws. For additional support, secure the mounting plate to the ceiling or wall using appropriate screws (not provided) at the corners of the universal mounting plate.

NOTE: If the heater is to hang from the ceiling, refer to the Angle Adjustment instructions to reverse the angle adjustment assembly before continuing.

3. Thread the lead wires from the heater through the appropriate tube (provided - choose the 8" tube for ceiling mount; 4" tube for wall mount) and then through the stub in the cover plate.

4. Secure the tube to the heater stub with a trilobal screw (provided). Secure the tube to the cover plate stub with the remaining trilobal screw.

5. Recruit an assistant to hold the heater. You may need to cut the clips off the ends of the lead wires and strip them to accommodate wire nuts. Use wire nuts to connect the lead wires from the heater to the power supply. Be sure the lead wire with the green label is connected to the green (ground) power supply wire.

6. Lift the heater up to the universal mounting plate and carefully coil the wires and connections into the junction box. Secure the cover plate to it with the four screws (provided). Be sure all screws are secure and sufficient to hold the weight of the heater. If any mounting hardware is loose or insufficient the heater may fall.

7. Turn on the power supply and test operation.
### INSTALLATION

**HZE Series Electrical Connection**

All wiring must be in accordance with the National and Local Electrical Codes. The heater housing must be properly grounded. Install circuit protection for each heater or bank of heaters as required.

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

1. Connect the service to the heater with properly sized conductors and wire nuts rated for 90° C.
2. Use waterproof conduit or flex if installed outdoors or in wet areas as needed.
3. Connect service to the high temp wires according to the appropriate wiring schematic on page 14.
4. Supply heater control equipment as required to turn heaters on and off, to allow each heater to be staged for low/high voltage operation, to be dimmed, or to be controlled by sensors or timers.
5. 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.**

### HZE Series Angle Adjustment

The angle adjustment assembly has approximately 40 degrees of motion, which allows the heater to be aimed at the desired target. The angle of the heater can be adjusted up and down only. Be sure to loosen the allen screws before moving the heater, and then tighten them just enough to hold the unit in place. **Overtightening can bend the frame and damage the unit.**

### HZS Series Mounting Options

**HZS SERIES MOUNTING OPTIONS**

HZS Series heaters come complete with an adjustable universal mounting tab that can be used in many ways. It may have to be removed and rotated for some installations. It has been designed to fit a variety of electrical junction boxes.

- **A** Universal mounting tab - standard attachment to post or wall with remote electrical connection.
- **B** 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. The junction box must be on the bottom side.
- **C** For horizontal mounting to a flat surface, a single bolt placed in one of the middle holes allows for left/right adjustment.

Refer to **CLEARANCE TO COMBUSTIBLES** for more information.

**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.
HZS Series Electrical Connection

All wiring must be in accordance with the National and Local Electrical Codes. The heater housing must be properly grounded. Install circuit protection for each heater or bank of heaters as required.

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

1. Connect the service to the heater with properly sized wires, connectors and wire nuts rated for 90°C (194°F).
2. Use waterproof conduit or flex if installed outdoors or in wet areas as needed.
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 on page 14.
5. Junction box has 17.3 cubic inches (112 cubic centimeters) of wiring space and a 1/2” NPT threaded hole.
6. Supply heater control equipment as required to turn heaters on and off, to allow each heater to be staged for low/high voltage operation, to be dimmed, or to be controlled by sensors or timers.
7. 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.**

HZS Series Angle Adjustment

The angle of the heater can be adjusted up and down. There are two adjustment screws, one on either side of the mounting bracket. Be sure to loosen them before moving the heater, and then tighten them evenly to hold it at the desired angle.

HZE & HZS Series Replacement Elements

<table>
<thead>
<tr>
<th>Element</th>
<th>Heater</th>
<th>Power (W)</th>
<th>No. of Stages</th>
<th>No. of Wires</th>
<th>Schem.</th>
<th>Voltage (V)</th>
<th>Amp Draw</th>
</tr>
</thead>
<tbody>
<tr>
<td>7501</td>
<td>HZRE15120C</td>
<td>HZX15120</td>
<td>1500</td>
<td>1</td>
<td>2</td>
<td>A</td>
<td>120</td>
</tr>
<tr>
<td>7503</td>
<td>HZRE15208C</td>
<td>HZX15208</td>
<td>1500</td>
<td>1</td>
<td>2</td>
<td>A*</td>
<td>208</td>
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<tr>
<td>7504</td>
<td>HZRE15240C</td>
<td>HZX15240</td>
<td>1500</td>
<td>1</td>
<td>2</td>
<td>A*</td>
<td>240</td>
</tr>
<tr>
<td>7505</td>
<td>HZRE15277C</td>
<td>HZX15277</td>
<td>1500</td>
<td>1</td>
<td>2</td>
<td>A</td>
<td>277</td>
</tr>
</tbody>
</table>

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 (A*, B*) connect to a common hot wire (H), not a neutral wire (N).
- Schematics with an apostrophe (B') require the neutral wire (N) to be capped.
- Heater elements and wiring schematics that allow high/low staging are shaded.

1. Voltage between hot and neutral is 120V.
2. Voltage between hot and neutral is 277V.
OPERATION

* 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. Keep combustible materials, such as furniture, pillows, bedding, paper, clothes and curtains at least 48" (1500 watt) / 66" (3000 watt) / 96" (5000 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. If heater has a cord and plug, always unplug when not in use.

5. Do not operate any heater with a damaged cord or plug (if applicable) or after the heater malfunctions, or 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. If heater has a cord, 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 (if applicable).

9. If heater has a cord and plug, 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. If heater has a cord and plug, avoid the use of an extension cord because the extension cord may overheat and cause a risk of fire. However, if an extension cord must be used, please contact your local licensed electrician for a safe recommendation based on heater voltage, wattage and cord length. Heaters rated 120 volts will require appropriate gauge three-wire cord with grounding type plug and cord connector.

14. If the unit is installed in proximity of tents or awnings, make 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 not be replaced by the user. Return heater to dealer or factory for element replacement.

17. 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.

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

19. The HotZone heating element operates at approximately 1800°F. The element is resistant to thermal and mechanical shock, and is appropriate for use in dry locations only if permanently mounted on a junction box.

20. The element has an expected life of 2000 hours. When an element burns out, it cannot be repaired and must be replaced. For replacement, return your heater model to your Schaefer HotZone dealer for replacement.

21. 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.
**MAINTENANCE**

**MAINTENANCE TO BE PERFORMED EVERY 6 MONTHS**

*WARNING! Disconnect heater before performing any 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, using a nozzle or brush less than 3/4" diameter. 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.

- Allow heater to dry thoroughly before use.

**OPERATION**

For HZE & HZS Series Clearance to Combustibles see page 5

For HZE Series Angle Adjustment see page 8

For HZS Series Angle Adjustment see page 9

**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)?
- 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.
Schaefer Limited Warranty Policy

Schaefer Ventilation Equipment, LLC (SVE) provides the following limited warranty from the date of invoice to the initial purchaser of our products or to its customer with a dated proof of purchase:

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 or component returned-upon approval, to SVE, F.O.B Sauk Rapids, Minnesota. This warranty does not cover: failure, damage or malfunction as a result of: Improper installation or installation not in accordance with installation instructions. Operating conditions that vary from SVE's operating instructions. Misuse, abuse, negligence, alteration, or accident. Transporting the product. Improper operation or lack of appropriate or regular maintenance of the product. Loss of time, inconvenience, loss of use of the product or other consequential or incidental damages. Parts that need replacement due to normal wear and tear. Superficial or cosmetic rust or corrosion. Any product whose name plate has been removed.

A full warranty statement may be printed or downloaded from www.schaeferventilation.com

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.