

Chromalox®

Installation, Operation

and

RENEWAL PARTS IDENTIFICATION

SERVICE REFERENCE

DIVISION 4

SECTION SK

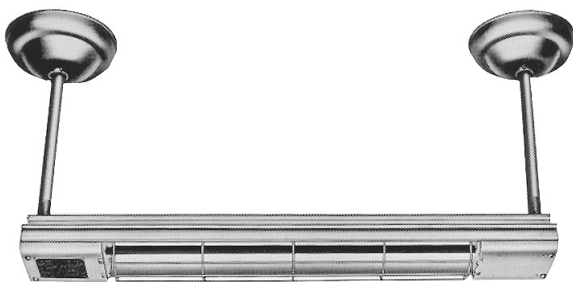
SALES
REFERENCE (Supersedes PG417-2)

PG417-3

161-048460-001

DATE OCTOBER, 2004

Type SKR Infrared Comfort Heater



Specifications – Table A

| Model | Watts | Single Phase Power Circuit Amps | | | | | Dimensions (In.) | |
|----------|-------|---------------------------------|------|------|------|------|--------------------------------|--------------------------------|
| | | 120V | 208V | 240V | 275V | 480V | A | B |
| SKR-2083 | 800 | 6.7 | 3.9 | 3.4 | – | – | 24 ³ / ₈ | 22 ⁷ / ₈ |
| SKR-3113 | 1100 | 9.2 | 5.3 | 4.6 | – | – | 30 ⁵ / ₈ | 29 ¹ / ₈ |
| SKR-4183 | 1800 | – | 8.7 | 7.5 | 6.6 | – | 46 ⁵ / ₈ | 45 ¹ / ₈ |
| SKR-5253 | 2500 | – | 12.0 | 10.5 | 9.1 | 5.3 | 61 ¹ / ₈ | 59 ⁷ / ₈ |
| SKR-6303 | 3000 | – | 14.4 | 12.5 | 10.9 | 6.3 | 73 ³ / ₄ | 72 ¹ / ₄ |
| SKR-7363 | 3600 | – | 17.3 | 15.0 | 13.1 | 7.5 | 85 ¹ / ₄ | 84 ¹ / ₄ |

GENERAL

Chromalox Type SKR radiant heaters are designed for indoor installation only, and are to be ceiling mounted with such spacing between heaters to project heat radiation downwards to maintain comfort level within the radiation field.

Before Installing

1. Open carton and remove heater at the place of installation. Mounting clamps are in parts bag in carton.
2. Check nameplate volt and watt rating against your power supply voltage and heating requirements of your installation. This nameplate is located on one end of the heater.

INSTALLATION

MOUNTING (See Figure 1)

1. Layout heater locations to the desired heat affected work area.
2. Minimum spacing to walls and ceiling are —
A. One foot (12") from top of heater to ceiling.
B. Two feet (24") from side or end of heater to adjacent walls.
3. Minimum safe height above floor level for combustible material is 6 feet (72"). However, if ceiling height permits, more practical height is 8 feet or more to avoid high radiation intensities at head level when one stands directly below heater.

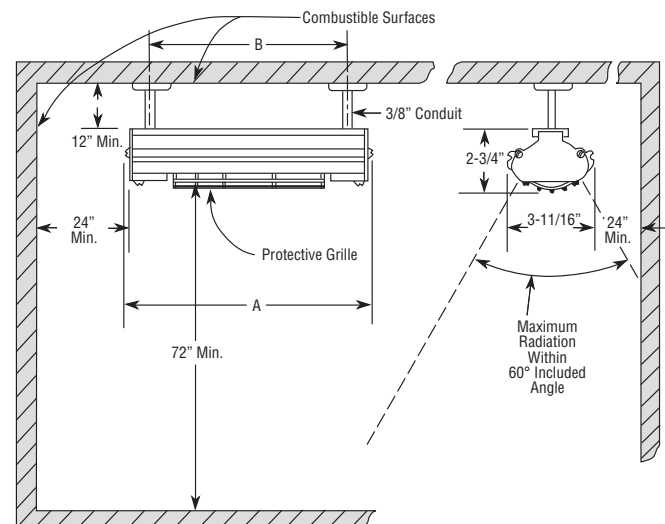
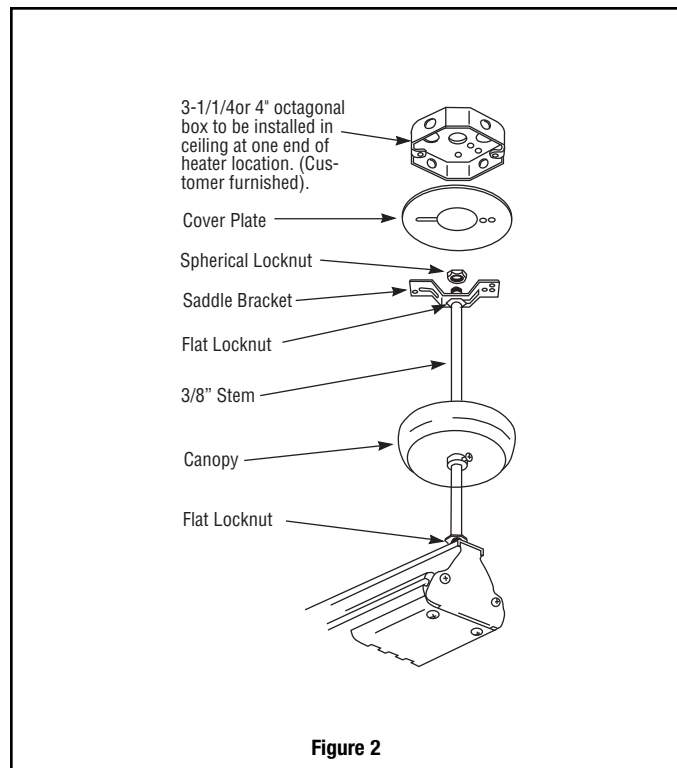


Figure 1

INSTALLATION

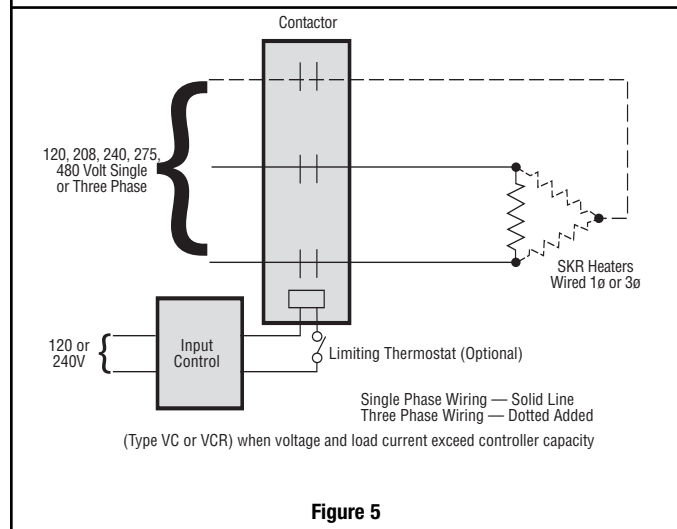
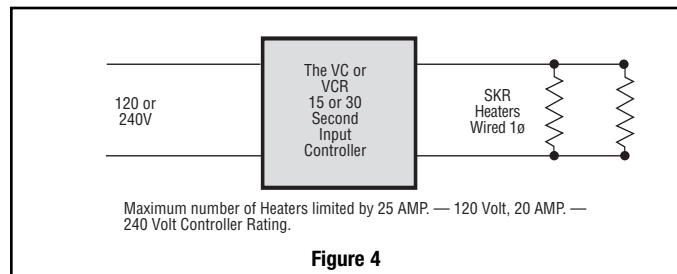
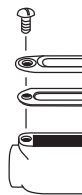
- Refer to Figure 2. Assemble one flat lock nut onto one end of each support tube or conduit and thread them into the tapped openings in top of heater. One of these support tubes contains three insulated wire leads. Handle with care to avoid damage to lead insulation.
WARNING: Do not cut the support tube for in doing so the minimum 12" clearance to ceiling will be violated resulting in excessive ceiling temperatures. Tighten lock nut securely against heater case.
- Slip the canopies loosely over the fixture support tubes.
- Assemble remaining locknuts onto ends of support conduits. Flat nut goes on first; spherical nut last with its convex side facing heater. See Figure 2. There should be full thread engagement at the top spherical nut. Allow about 1/2" spacing between nuts to facilitate hanging to brackets. Set the assembly aside.
- WARNING: Hazard of Electric Shock. Disconnect all power to ceiling wiring box to which one heater support will be fastened.**
- Install special cover plate and saddle bracket, provided with heater, over ceiling wiring box after fishing insulated power leads and ground lead, if provided, through large opening in cover plate. Use mounting screws provided with wiring box.
- Mount remaining saddle bracket to ceiling at the remaining planned point of support. The brackets should be on B dimension centers given in Specifications — Table A.
- Raise heater assembly, and slide both spherical nuts through slot in saddle brackets until spherical nut rests in the slot depressions. Run bottom lock nut up against bracket to lock the assembly into place.



WIRING

WARNING: Hazard of Electric Shock. Any installation involving electric heaters must be grounded to earth to eliminate shock hazard.

- All wiring to heater wiring box shall be in accordance with National Electrical Code and/or local wiring code.
- Power conductors should be sized to handle 125% of heater current given in Specifications — Table A.
- Complete electrical wiring between heater leads and power leads using insulated wire nuts. Tuck excess lead around and behind saddle brackets.
- The green colored ground lead should be connected to ground lead from wiring box, or if such lead is not provided, then the ground lead should be grounded to the conduit box to insure ground continuity. **Note:** If heaters are to be suspended more than 12" below ceiling, the heater support tubes should terminate into a Crouse-Hinds Type C Condulet in line wiring box where splice to power leads can be made (See Figure 3). A 3/8" pipe or conduit extension of the desired length from top of Condulet can then terminate at the ceiling wiring box utilizing cover plate, brackets, and lock nuts as with conventional installation.
- To complete installation raise canopies to completely enclose brackets and electrical wiring. Tighten set screw.
- If wiring from heater becomes damaged or requires replacement, it should be replaced with special high temperature wire as furnished with heater. Replacement wires can be ordered from Chromalox. (See RENEWAL PARTS section.)



SKR Radiant Heater Control by Input Controller

OPERATION

DANGER: Fire Hazard. This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids or other combustible atmospheres are present as defined in the National Electrical Code. Failure to comply can result in explosion or fire.

- Although most heaters operate at full capacity, it is possible to reduce heating capacity with an Input Controller (Chromalox Type VC or VCR — check factory) which can be manually set to turn on heaters from 4% to 100% of a 15 or 30 second operating cycle, providing, in effect, infinite control of heater output. Refer to Figures 4 and 5 as may be appropriate to your installation.

MAINTENANCE

WARNING: Hazard of Electric Shock. Disconnect all power before servicing heater.

TO REMOVE HEATING ELEMENT

1. Remove terminal cover screws and terminal cover.
2. Disconnect heating element from electrical leads at both ends.
3. Remove screws from porcelain terminal blocks.
4. Remove element support clips and secondary insulating bushings (where used).
5. Lift out element.

TO INSTALL ELEMENT

Observe instructions for removing element and proceed in reverse fashion. Be sure to replace secondary insulating bushings and support clips (where used).

WARNING: For your own safety —

Before energizing this heater:

1. Be sure all electrical connections are tightly made. Hold terminal with pliers when tightening screw.
2. Be sure that all conductors are properly insulated.
3. Be sure that all element assemblies have been properly replaced, and that secondary insulation bushings and support clips (where used) have not been omitted.

CARE OF REFLECTORS

Reflectors should be cleaned periodically. A mild soap and water solution or fine cleaning powder is best although more drastic means may be required if reflectors are badly soiled by chemical or other deposits. The reflector is aluminum. **DO NOT** use alkali cleaners since alkalis will dull reflector. Mild non-alkaline cleaners, such as used for scouring kitchen sinks, may be used. Reflectors are replaceable and may be purchased from Chromalox.

RENEWAL PARTS IDENTIFICATION

PARTS COMMON TO ALL HEATERS

| | | | |
|---|---------------------|----------------------|-----|
| ⑩ | Terminal Cover |306-014405-001 | (2) |
| ⑪ | Terminal Cover Clip |056-014401-002 | (4) |
| ⑫ | End Plates |220-014462-004† | |
| | |220-014462-002 | |
| ⑬ | Terminal Screw |248-002793-001 | (2) |
| ⑭ | Saddle Clamp |238-026539-001 | (2) |

MISCELLANEOUS HARDWARE

| | | | |
|---|------------------|---------------------|-----|
| ⑮ | #8 x 1" Lg. |248-075519-095 | (6) |
| ⑯ | #8 x 3/8" Lg. |248-075519-080 | (4) |
| ⑰ | #8-32 x 3/8" Lg. |248-075414-051 | (4) |

MISCELLANEOUS PARTS

| | | | |
|---|------------------|---------------------|-----|
| ⑱ | Terminal Block |303-016367-001 | (2) |
| ⑲ | Speed Nuts |272-048153-005 | (4) |
| ⑳ | Terminal Block |303-014326-001 | (2) |
| ㉑ | Conduit |069-017920-001 | (2) |
| ㉒ | Cover Plate, Box |220-017915-001 | (1) |

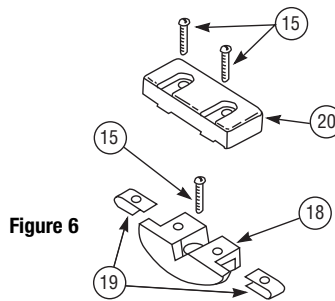


Figure 6

TERMINAL BLOCK SET
168-016585-001 consists of the following:

| | | | |
|---|----------------------|---------------------|-----|
| ⑱ | Terminal Block |303-016367-001 | (2) |
| ⑲ | Speed Nuts |272-048153-005 | (4) |
| ⑳ | Terminal Block |303-014326-001 | (2) |
| ㉑ | Screws — #8 x 1" Lg. |248-075519-095 | (6) |

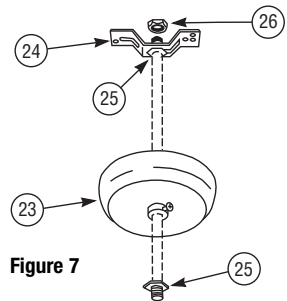


Figure 7

HANGER KIT
168-050202-001 (2) consists of the following:

| | | |
|---|------------------------|----------|
| ㉓ | Canopy, with set screw |(1) |
| ㉔ | Hanger Bracket |(1) |
| ㉕ | Flat Locknut |(2) |
| ㉖ | Hex Nut (Spherical) |(1) |

† Indicates stamped end plate with voltage, wattage, etc.

Note: Part numbers suffixed by a number in () indicates the quantity of the same part number used.

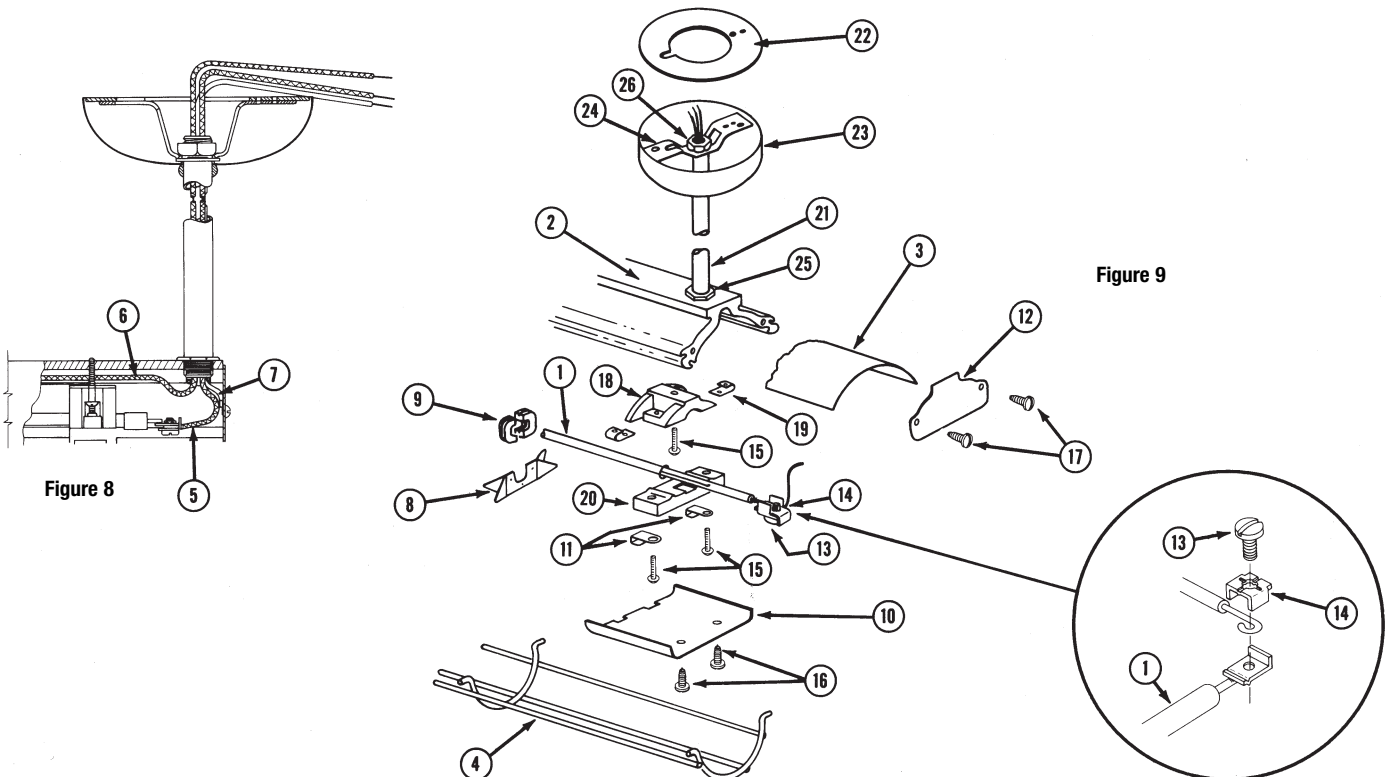


Figure 9

RENEWAL PARTS IDENTIFICATION

| Model | Volts | kW | ① Heating Element | ② Aluminum Housing | ③ Reflector | ④ Grille | ⑤ Short Lead | ⑥ Long Lead | ⑦ Green Ground Wire | ⑧ Element Support Clip | ⑨ Insulation Bushing |
|----------------------------------|-------|-----|-------------------------|--------------------------|----------------|--------------------|-----------------|----------------|---------------------------|------------------------------|----------------------------|
| SKR-2083 2083 2083 | 120 | .8 | RTU-2083A | 152-017859-001 | 234-013411-011 | 134-017852-001 | 175-048142-041 | 175-048142-042 | 175-048142-224 | _____ | _____ |
| | 208 | .8 | RTU-2083AV | 152-017859-001 | 234-013411-011 | 134-017852-001 | 175-048142-041 | 175-048142-042 | 175-048142-224 | _____ | _____ |
| | 240 | .8 | RTU-2083A | 152-017859-001 | 234-013411-011 | 134-017852-001 | 175-048142-041 | 175-048142-042 | 175-048142-224 | _____ | _____ |
| SKR-3113 3113 3113 | 120 | 1.1 | RTU-3113A | 152-017859-002 | 234-013411-012 | 134-017852-002 | 175-048142-041 | 175-048142-043 | 175-048142-224 | _____ | _____ |
| | 208 | 1.1 | RTU-3113AV | 152-017859-002 | 234-013411-012 | 134-017852-002 | 175-048142-041 | 175-048142-043 | 175-048142-224 | _____ | _____ |
| | 240 | 1.1 | RTU-3113A | 152-017859-002 | 234-013411-012 | 134-017852-002 | 175-048142-041 | 175-048142-043 | 175-048142-224 | _____ | _____ |
| SKR-4183 4183 4183 | 208 | 1.8 | RTU-4183AV | 152-017859-003 | 234-013411-014 | 134-017852-003 | 175-048142-041 | 175-048142-044 | 175-048142-224 | 059-013424-001 (1) | 032-013454-001 (2) |
| | 240 | 1.8 | RTU-4183A | 152-017859-003 | 234-013411-014 | 134-017852-003 | 175-048142-041 | 175-048142-044 | 175-048142-224 | 059-013424-001 (1) | 032-013454-001 (2) |
| | 275 | 1.8 | RTU-4183AV | 152-017859-003 | 234-013411-014 | 134-017852-003 | 175-048142-041 | 175-048142-044 | 175-048142-224 | 059-013424-001 (1) | 032-013454-001 (2) |
| SKR-5253 5253 5253 5253 | 208 | 2.5 | RTU-5253AV | 152-017859-004 | 234-013411-016 | 134-017852-004 | 175-048142-041 | 175-048142-045 | 175-048142-224 | 059-013424-001 (2) | 032-013454-001 (4) |
| | 240 | 2.5 | RTU-5253A | 152-017859-004 | 234-013411-016 | 134-017852-004 | 175-048142-041 | 175-048142-045 | 175-048142-224 | 059-013424-001 (2) | 032-013454-001 (4) |
| | 275 | 2.5 | RTU-5253AV | 152-017859-004 | 234-013411-016 | 134-017852-004 | 175-048142-041 | 175-048142-045 | 175-048142-224 | 059-013424-001 (2) | 032-013454-001 (4) |
| | 480 | 2.5 | RTU-5253M | 152-017859-004 | 234-013411-016 | 134-017852-004 | 175-048143-022 | 175-048143-024 | 175-048142-224 | 059-013424-001 (2) | 032-013454-001 (4) |
| SKR-6303 6303 6303 6303 | 208 | 3.0 | RTU-6303AV | 152-017859-005 | 234-013411-018 | 134-017852-005 | 175-048142-041 | 175-048142-046 | 175-048142-224 | 059-013424-001 (3) | 032-013454-001 (6) |
| | 240 | 3.0 | RTU-6303A | 152-017859-005 | 234-013411-018 | 134-017852-005 | 175-048142-041 | 175-048142-046 | 175-048142-224 | 059-013424-001 (3) | 032-013454-001 (6) |
| | 275 | 3.0 | RTU-6303AV | 152-017859-005 | 234-013411-018 | 134-017852-005 | 175-048142-041 | 175-048142-046 | 175-048142-224 | 059-013424-001 (3) | 032-013454-001 (6) |
| | 480 | 3.0 | RTU-6303M | 152-017859-005 | 234-013411-018 | 134-017852-005 | 175-048143-022 | 175-048143-025 | 175-048142-224 | 059-013424-001 (3) | 032-013454-001 (6) |
| SKR-7363 7363 7363 7363 | 208 | 3.6 | RTU-7363AV | 152-017859-006 | 234-013411-038 | 134-017852-003 (2) | 175-048142-041 | 175-048142-047 | 175-048142-224 | 059-013424-001 (4) | 032-013454-001 (8) |
| | 240 | 3.6 | RTU-7363A | 152-017859-006 | 234-013411-038 | 134-017852-003 (2) | 175-048142-041 | 175-048142-047 | 175-048142-224 | 059-013424-001 (4) | 032-013454-001 (8) |
| | 275 | 3.6 | RTU-7363AV | 152-017859-006 | 234-013411-038 | 134-017852-003 (2) | 175-048142-041 | 175-048142-047 | 175-048142-224 | 059-013424-001 (4) | 032-013454-001 (8) |
| | 480 | 3.6 | RTU-7363M | 152-017859-006 | 234-013411-038 | 134-017852-003 (2) | 175-048143-022 | 175-048143-026 | 175-048142-224 | 059-013424-001 (4) | 032-013454-001 (8) |

Note: Part numbers suffixed by a number in () indicates the quantity of the same part number used.

Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at
<http://www.chromalox.com/customer-service/policies/termsforsale.aspx>.

Chromalox®

PRECISION HEAT AND CONTROL

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