

Chromalox®

Installation, Operation and RENEWAL PARTS IDENTIFICATION

SERVICE REFERENCE

| | |
|--------------------------------------|-------------|
| DIVISION 4 | SECTION HCH |
| SALES REFERENCE (Supersedes PF422-4) | PF422-5 |
| 161-027008-001 | |
| DATE JANUARY, 2010 | |

HCH Convection Heater

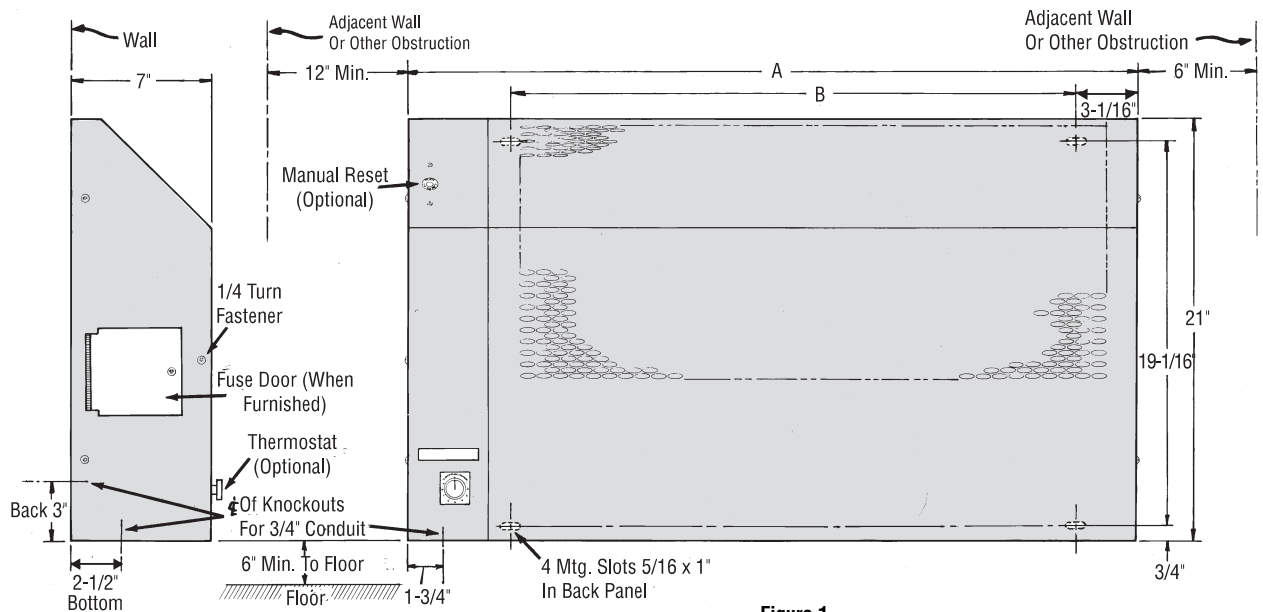
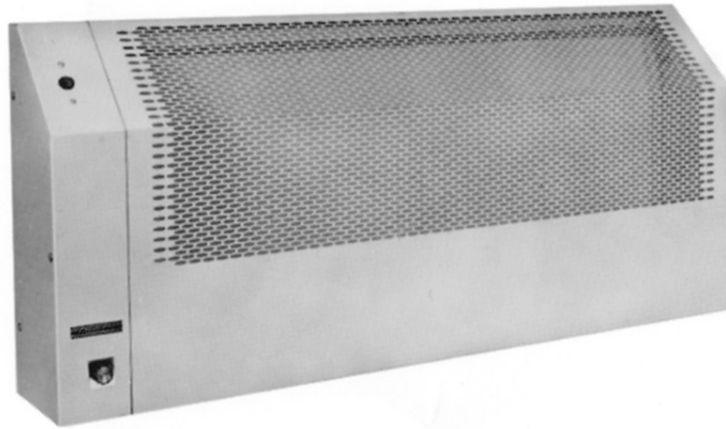


Figure 1

Note: Carefully remove heater from carton and check for shipping damage. Any damage claims should be entered immediately with the carrier.

⚠ WARNING

FIRE/EXPLOSION 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 personal injury or property damage.

⚠ WARNING

The system designer is responsible for the safety of this equipment and should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure could result in personal injury or property damage, back-up controls are essential.

SPECIFICATIONS

Specifications - Table A

| Model | Voltage (60 Hz — AC) | Watts | Phase | Dimensions (In.) | |
|---------|-------------------------|-------|--------|------------------|--------|
| | | | | A | B |
| HCH-051 | 120, 208, 240 or 277 | 500 | 1 | 24 | 15-7/8 |
| HCH-071 | 120, 208, 240 or 277 | 750 | 1 | | |
| HCH-101 | 120 or 277 | 1000 | 1 | | |
| | 208, 240 or 480 | | 1 or 3 | | |
| HCH-151 | 120 or 277 | 1500 | 1 | | |
| | 208, 240 or 480 | | 1 or 3 | | |
| | 550, 575 or 600 | | 3 | | |
| HCH-201 | 120 or 277 | 2000 | 1 | | |
| | 208, 240 or 480 | | 1 or 3 | | |
| | 550, 575 or 600 | | 3 | | |
| HCH-251 | 120 or 277 | 2500 | 1 | 36 | 27-7/8 |
| | 208, 240 or 480 | | 1 or 3 | | |
| | 550, 575 or 600 | | 3 | | |

| Model | Voltage (60 Hz — AC) | Watts | Phase | Dimensions (In.) | | | |
|---------|-------------------------|-------|--------|------------------|--------|----|--------|
| | | | | A | B | | |
| HCH-301 | 277 | 3000 | 1 | 36 | 27-7/8 | | |
| | 208, 240 or 480 | | 1 or 3 | | | | |
| | 550, 575 or 600 | | 3 | | | | |
| HCH-351 | 277 | 3500 | 1 | | | | |
| | 208, 240 or 480 | | 1 or 3 | | | | |
| | 550, 575 or 600 | | 3 | | | | |
| HCH-401 | 277 | 4000 | 1 | | | 48 | 39-7/8 |
| | 208, 240 or 480 | | 1 or 3 | | | | |
| | 550, 575 or 600 | | 3 | | | | |
| HCH-451 | 277 | 4500 | 1 | | | | |
| | 208, 240 or 480 | | 1 or 3 | | | | |
| | 550, 575 or 600 | | 3 | | | | |
| HCH-501 | 277 | 5000 | 1 | | | | |
| | 208, 240 or 480 | | 1 or 3 | | | | |
| | 550, 575 or 600 | | 3 | | | | |

Note: Heaters with Model Numbers suffixed with the letter "M" (Ex: HCH-351M) are supplied with a Manual Reset.

MOUNTING

⚠ WARNING

ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heater. Failure to do so could result in personal injury or property damage. Heater must be installed or serviced by a qualified person in accordance with the National Electrical Code, NFPA 70.

1. Locate on vertical wall with length of heater positioned horizontally.
2. When selecting a mounting location, the following minimum distances must be observed:
 - A. 6" from bottom of heater to floor to allow for adequate air flow through the heater.
 - B. 6" from wall or other obstruction to right side of heater to allow for access to 1/4 turn fasteners.
 - C. 12" from wall or other obstruction to left side of heater to allow for access to controls and wire entry.

3. Avoid mounting heater in a recess since such mounting interferes with free air circulation, increases heater temperatures, and prevents proper thermostat operation.
4. Remove front cover by giving two fasteners on right end of heater 1/4 turn then sliding cover approximately 1" to right, then lifting.
5. At the correct height for the top of the heater, draw a pencil line on the wall, parallel to the floor.
6. Using dimensions shown in Figure 1, mark the mounting slot location on the wall.
7. Mount heater to the wall by using fasteners (not furnished) to suit the wall construction. Four 5/16 x 1" mounting slots are provided in heater back panel. Note: If wall surface is not flat, resulting in gap between rear case and wall in excess of 1/8" at location of fasteners, use metal washers to fill in gap. Tighten left hand fasteners securely. The right hand fasteners should be pulled up snug to allow for movement during operation to avoid expansion noise.
8. Replace cover and tighten 1/4 turn fasteners.

WIRING

⚠ WARNING

ELECTRIC SHOCK HAZARD. Any installation involving electric heaters must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

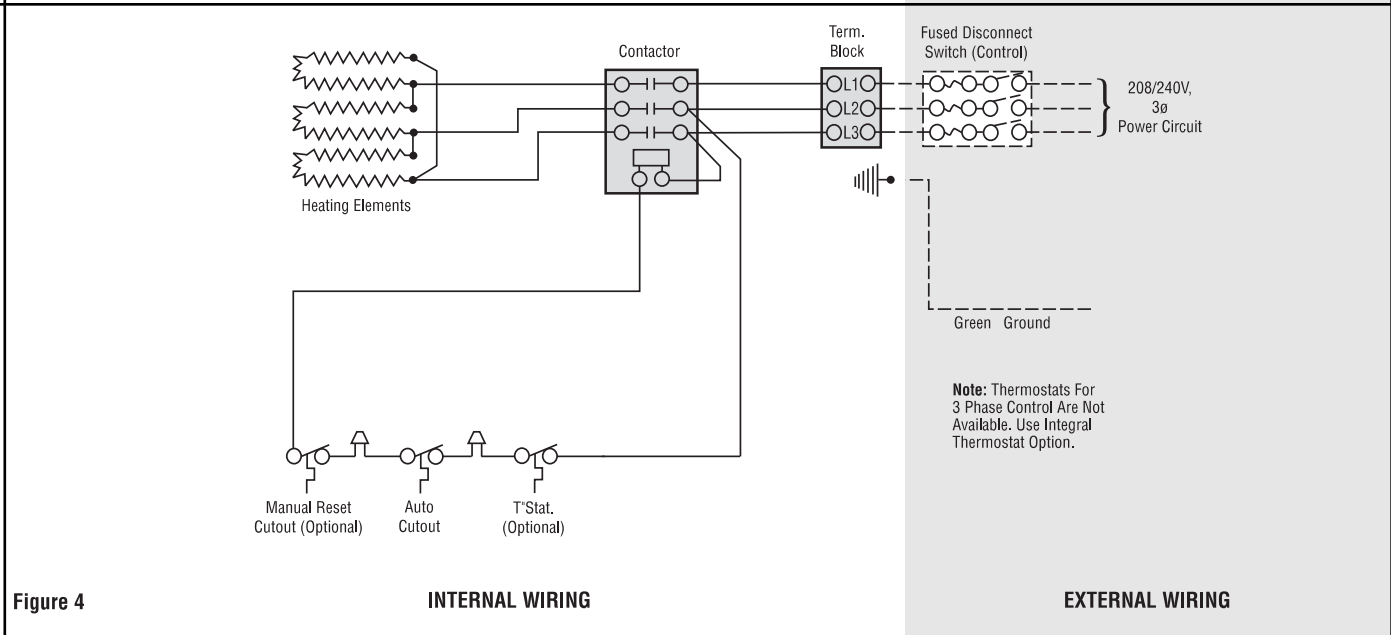
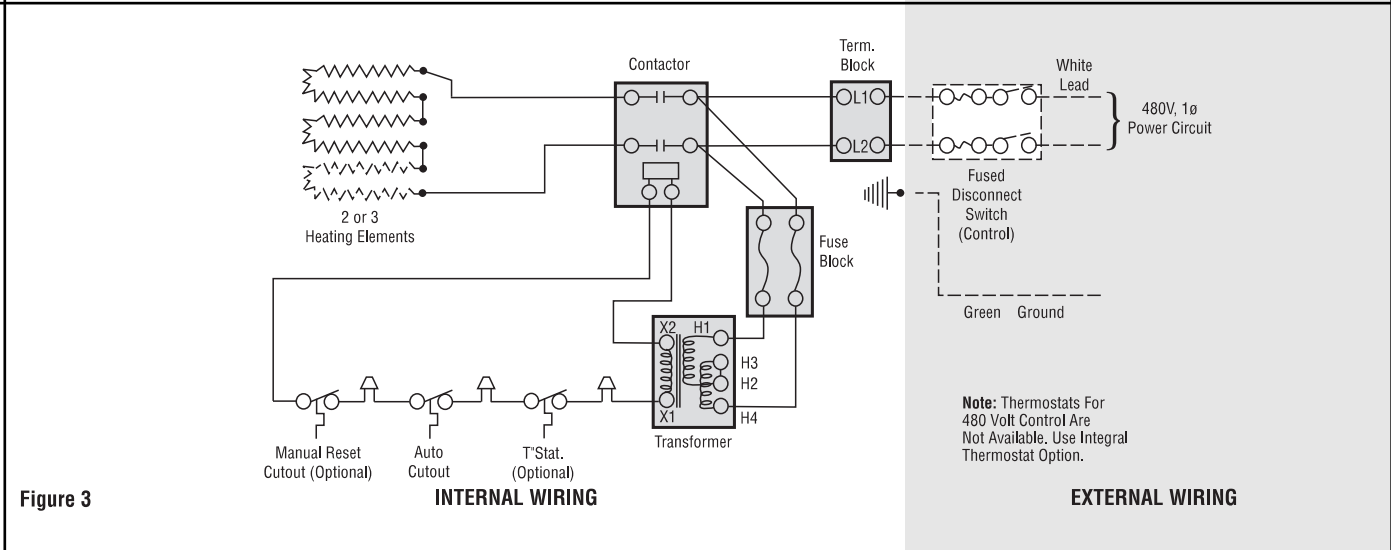
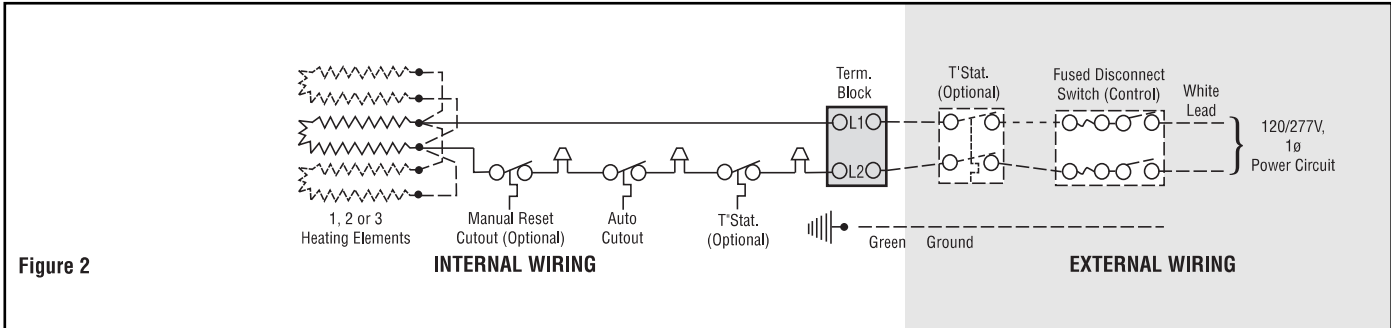
Note: Electrical wiring is to be in accordance with the National Electrical Code and local codes by a qualified person using at least 75°C (167°F) type RH, THW or equivalent insulated conductors.

1. Electrical wiring can be brought into heater through 3/4" knockout located either in back panel or bottom of left hand end of heater (wiring compartment).
2. Grounding conductor with green insulation, should be secured into grounding lug located in wiring compartment.
3. Using Wiring Diagram Table B select applicable wiring diagram (Figure 2-9) for proper method of connecting heater.
4. Two or more Type HCH heaters may be controlled by a common fused disconnect switch providing total branch circuit current does not exceed 48 amperes according to National Electrical Code.

Wiring Diagrams — Table B

| Model | Wiring Diagram Figure No. | | | | | | | | | | | | | | | | |
|---------|---------------------------|------|----|------|----|------|------|----|-----|-----------------|-----------------|------|-----|------|-----|-----|-----|
| | 120V 1Ø | 208V | | 240V | | 277V | 480V | | | 550V | | 575V | | 600V | | | |
| | | 1Ø | 1Ø | 3ØΔ | 1Ø | 3ØΔ | 1Ø | 1Ø | 3ØΔ | 3ØY (3 Wire) | 3ØY (4 Wire) | 3ØΔ | 3ØY | 3ØΔ | 3ØY | 3ØΔ | 3ØY |
| HCH-051 | 2 | 8 | | 8 | | 2 | | | | | | | | | | | |
| HCH-071 | 2 | 8 | | 8 | | 2 | | | | | | | | | | | |
| HCH-101 | 2 | 8 | 4 | 8 | 4 | 2 | 3 | | 9 | 6 | | | | | | | |
| HCH-151 | 2 | 8 | 4 | 8 | 4 | 2 | 3 | | 9 | 6 | 9 | | 9 | | | | 9 |
| HCH-201 | 2 | 8 | 4 | 8 | 4 | 2 | 3 | | 9 | 6 | 9 | | 9 | | | | 9 |
| HCH-251 | 2 | 8 | 4 | 8 | 4 | 2 | 7 | 5 | | 6 | 9 | | 9 | | | | 9 |
| HCH-301 | | 8 | 4 | 9 | 4 | 2 | 7 | 5 | | 6 | 9 | | 9 | | | | 9 |
| HCH-351 | | 8 | 4 | 8 | 4 | 2 | 7 | 5 | | 6 | 5 | | 5 | | | 5 | |
| HCH-401 | | 8 | 4 | 8 | 4 | 2 | 7 | 5 | | 6 | 5 | | 5 | | | 5 | |
| HCH-451 | | 8 | 4 | 8 | 4 | 2 | 7 | 5 | | 6 | 5 | | 5 | | | 5 | |
| HCH-501 | | 8 | 4 | 8 | 4 | 2 | 7 | 5 | | 6 | 5 | | 5 | | | 5 | |

WIRING (cont'd.)



WIRING (cont'd.)

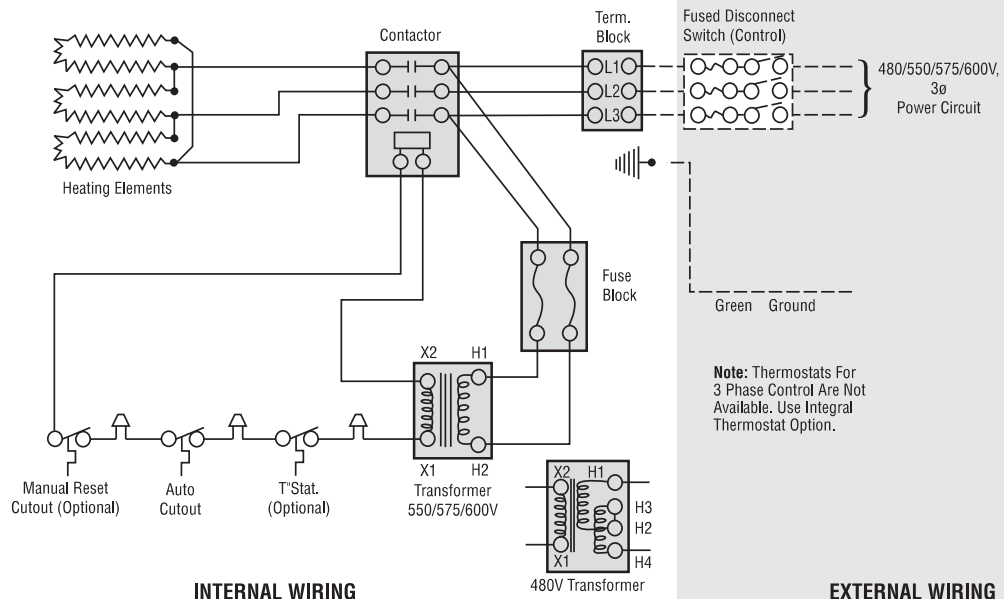


Figure 5

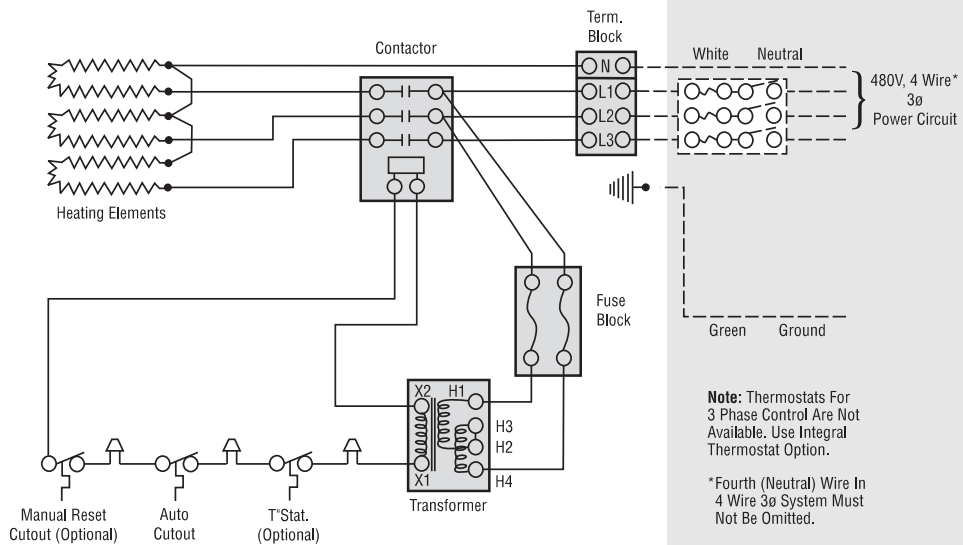


Figure 6

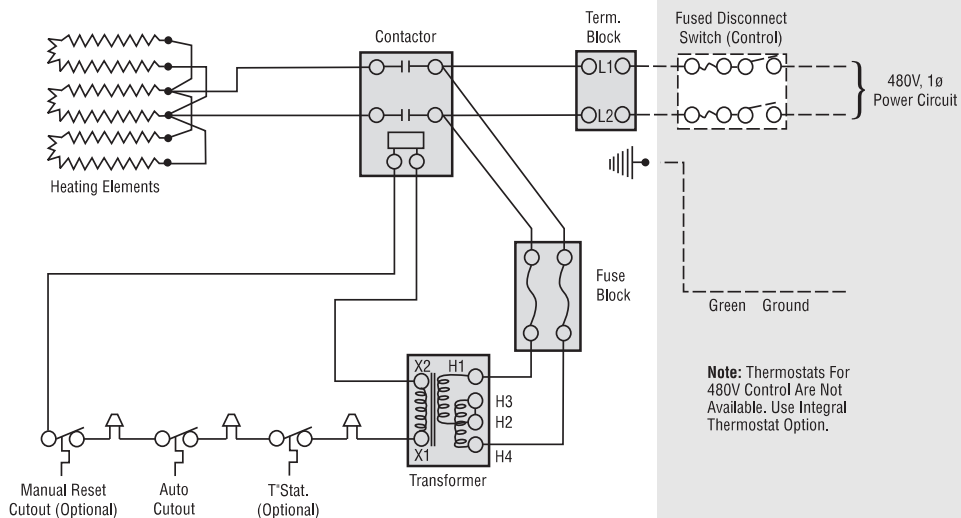
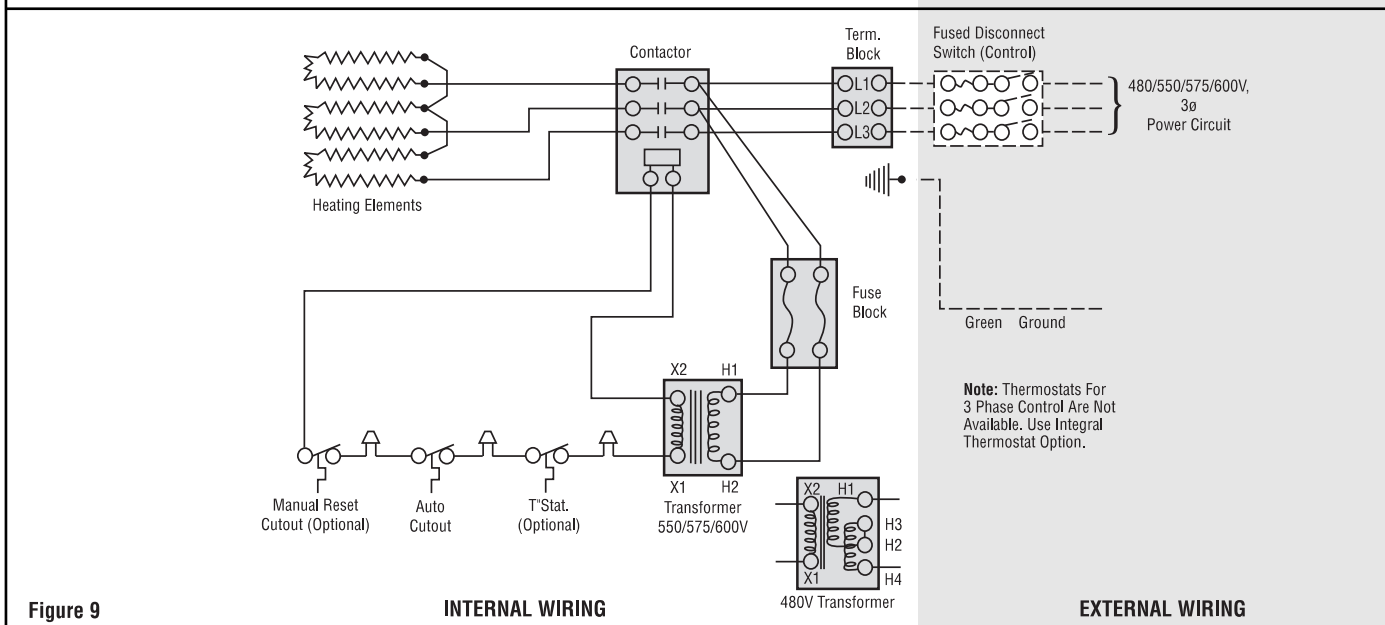
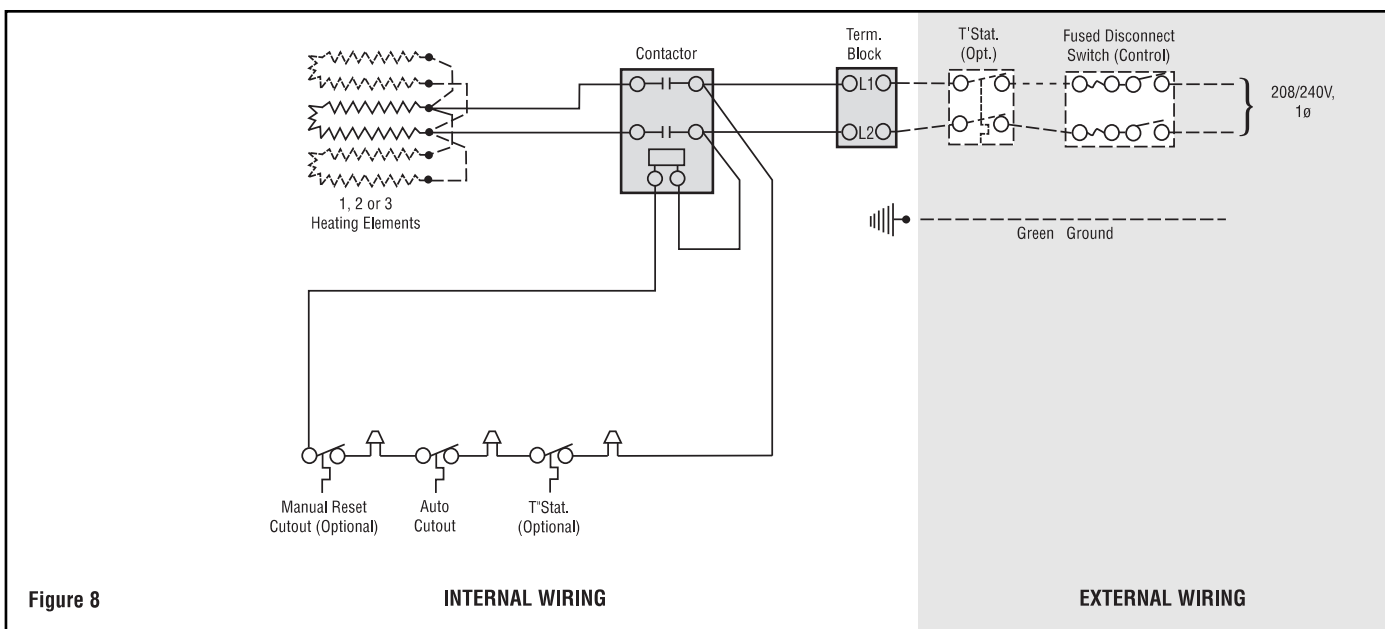


Figure 7

WIRING (cont'd.)



OPERATION

⚠ WARNING

FIRE HAZARD: Keep combustible materials a minimum of four inches away from front, top or side covers. Failure to follow these instructions could result in personal injury and property damage.

1. Temperature sensitive fabrics may discolor. Allow space greater than 4" if necessary.
2. To allow for proper air circulation, keep space underneath heater free from obstructions, objects or debris.
3. Adjust thermostat (optional) until desired temperature is reached.
4. Turn off power to heater at the end of the heating season.

MAINTENANCE

⚠ WARNING

ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heater. Failure to do so could result in personal injury or property damage. Heater must be installed or serviced by a qualified person in accordance with the National Electrical Code, NFPA 70.

1. Following long periods of idleness, heater should be vacuumed before start-up, to remove accumulated combustible particles which will incinerate causing smoking and consequent wall discoloration.
2. If heater is located in areas of heavy traffic, furnish suitable heater guard (wall mounted pipe rail in front of case, for example) to prevent damage to heater.

RENEWAL PARTS

HCH HEATER REPLACEMENT ELEMENTS — Part Number Prefix 118-026956

| Model | HCH 051 | HCH 071 | HCH 101 | HCH 151 | HCH 201 | HCH 251 | HCH 301 | HCH 351 | HCH 401 | HCH 451 | HCH 501 |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Watts | 500W | 750W | 1000W | 1500W | 2000W | 2500W | 3000W | 3500W | 4000W | 4500W | 5000W |
| Volts | | | | | | | | | | | |
| 120V | 001 | 005 | 001 (2) | 005 (2) | 015 (3) | 021 (3) | — | — | — | — | — |
| 208V | 002 | 006 | 002 (2) | 006 (2) | 016 (3) | 022 (3) | 029 (3) | 036 (3) | 043 (3) | 050 (3) | 057 (3) |
| 208V 3Ø Δ | — | — | 009 (3) | 002 (3) | 016 (3) | 022 (3) | 029 (3) | 036 (3) | 043 (3) | 050 (3) | 057 (3) |
| 240V | 003 | 007 | 003 (2) | 007 (2) | 002 (3) | 023 (3) | 030 (3) | 037 (3) | 044 (3) | 051 (3) | 058 (3) |
| 240V 3Ø Δ | — | — | 010 (3) | 003 (3) | 002 (3) | 023 (3) | 030 (3) | 037 (3) | 044 (3) | 051 (3) | 058 (3) |
| 277V | 004 | 008 | 004 (2) | 008 (2) | 003 (3) | 024 (3) | 031 (3) | 038 (3) | 045 (3) | 052 (3) | 059 (3) |
| 480V | — | — | 003 (2) | 007 (2) | 017 (3) | 025 (3) | 032 (3) | 039 (3) | 046 (3) | 053 (3) | 060 (3) |
| 480V 3Ø Δ | — | — | — | — | — | 025 (3) | 032 (3) | 039 (3) | 046 (3) | 053 (3) | 060 (3) |
| 480V 3Ø Y | — | — | 011 (3) | 004 (3) | 003 (3) | — | — | — | — | — | — |
| 480V 3Ø 4 Wire | — | — | 011 (3) | 004 (3) | 003 (3) | 024 (3) | 031 (3) | 038 (3) | 045 (3) | 052 (3) | 059 (3) |
| 550V 3Ø Y | — | — | — | 012 (3) | 018 (3) | 026 (3) | 033 (3) | 040 (3) | 047 (3) | — | — |
| 550V 3Ø Δ | — | — | — | — | — | — | — | — | — | 054 (3) | 061 (3) |
| 575V 3Ø Y | — | — | — | 013 (3) | 019 (3) | 027 (3) | 034 (3) | 041 (3) | 048 (3) | — | — |
| 575V 3Ø Δ | — | — | — | — | — | — | — | — | — | 055 (3) | 062 (3) |
| 600V 3Ø Y | — | — | — | 014 (3) | 020 (3) | 028 (3) | 035 (3) | 042 (3) | 049 (3) | — | — |
| 600V 3Ø Δ | — | — | — | — | — | — | — | — | — | 056 (3) | 063 (3) |

When ordering element replacement parts use part number prefix No. 118-026956 then the element number, e.g. To replace an element in a 120V HCH 151 order 118-026956-005. The (2) or (3) following the element number designates the number of heating elements contained in the heater.

AUTOMATIC CUT-OFF REPLACEMENT

| For HCH Heaters | Part Number |
|---|----------------|
| HCH 051 and HCH 051M thru HCH 201 and HCH 201M | 300-024413-001 |
| HCH 251 and HCH 251M thru HCH 351 and HCH 351M | 300-024413-002 |
| HCH 401 and HCH 401M thru HCH 501 and HCH 501M | 300-024413-009 |

REPLACEMENT TRANSFORMER

| For HCH Heaters rated | Part Number |
|-----------------------|----------------|
| 480V | 315-052169-001 |
| 550V, 575V and 600V | 315-052169-014 |

REPLACEMENT FUSES FOR ALL TRANSFORMERS — TWO REQUIRED

| For HCH Heaters rated | Part Number |
|---------------------------|----------------|
| 480V, 550V, 575V and 600V | 128-047763-011 |

REPLACEMENT CONTACTOR

| For HCH Heaters rated | Part Number |
|----------------------------|----------------|
| 480V Single phase | 072-303180-011 |
| 480V thru 600V 3 phase | 072-303180-007 |
| 208V and 240V Single phase | 072-303180-016 |
| 208V and 240V 3 phase | 072-303180-013 |

THERMOSTAT REPLACEMENT

| For HCH Heaters | Part Number |
|-----------------|----------------|
| All ratings | 300-049197-001 |
| Thermostat Knob | 169-051209-001 |

MANUAL TEMPERATURE CONTROL REPLACEMENT

| HCH (M) Heater | Part Number |
|------------------------|----------------|
| HCH 051M thru HCH 201M | 300-117647-003 |
| HCH 251M thru HCH 351M | 300-117647-002 |
| HCH 401M thru HCH 501M | 300-117647-008 |

Limited Warranty:

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

Chromalox®

PRECISION HEAT AND CONTROL

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