

# INSTALLATION AND OPERATING INSTRUCTIONS

## AFA/3320 SERIES

### 1. LOCATION OF HEATER

- Heater is mounted on the wall near ceiling or floor, air flow down. **CAUTION:** Do not obstruct the front grille of the heater with curtains, furniture, etc., since the proper operation of the heater requires a free flow intake and exhaust of air.
- Minimum mounting height is 8" above finished floor.
- For surface mounting use adapter AFAA/3320EX33.
- For semi-recessed mounting, use adapter AFAA-2/3320EX16.

### 2. BEFORE MOUNTING

- Insure that the supply voltage matches voltage rating on the label of the heater.
- Turn off electrical power to heater circuit.

### 3. MOUNTING INSTRUCTIONS

- Disassemble heater by removing 7 screws "C" as shown in Fig 1 and 2.
- Flush mounting, See Fig. 1.  
Place rough-in box "A" between studs at desired height: secure to studs through holes "M". The flanges on the rough-in box must rest on the surface of the finished wall; if the box is installed prior to the application of the finished wall, allowance must be made for the wall thickness.
- Surface mounting, See Fig. 2.  
Secure rough-in box "A" to wall at desired height through holes "X". Place surface adapter "E" over rough-in box. Bring service in through bottom knockout "K" only for surface mounting.
- Semi-recessed mounting: Secure rough-in so that the long flanges extend away from the finished wall equal to the depth of the adapter. Bring service in through top or bottom knockout "K".
- Place assembly "B" into rough-in box "A". Secure with six screws "C".

### 4. WIRING INSTRUCTIONS REF: DIAGRAMS WD1, WD2, WD3, WD4

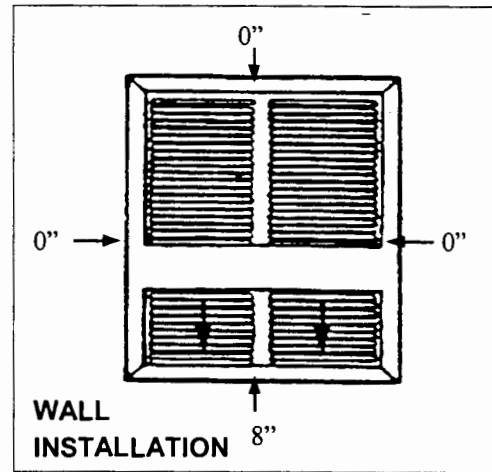
- Bring service leads through knockouts "K" on top or bottom of rough-in box for flush or semi-recessed mounting, bottom knockout "K" only for surface mounting. When wiring from the bottom, install wire through cover "G" by removing screw "H".
- Attach service leads to two black leads on 208-240 volt models and to black and white leads on 120-277 volt models, attach ground lead to green wire with approved connectors. Comply with all national and local codes.
- Attach wiring compartment cover "D" to assembly with screw "C".

### 5. FINAL STEPS

- Clean all construction dirt and debris from inside heater.
- Attach front grille "F" with four screws "L".
- Position frame "P" over spring clips "Y" and snap into place. Secure with screw "Q".

### 6. OPERATING INSTRUCTIONS

- Turn on power at the circuit breaker panel.
- Thermostat adjustment is made by inserting a small blade screw driver through grille opening into slot in stem. Turn thermostat adjustment stem fully clockwise, this will energize the heating element and after a short delay, the fan should energize, causing warm air discharge from bottom of the grille.
- After the desired temperature is reached, turn thermostat stem counter clockwise until a click is heard from the thermostat.



### 7. CLEANING AND MAINTENANCE INSTRUCTIONS

- At the beginning of each heating season, disconnect electrical power at circuit breaker panel. Remove front grille.
- Use the narrow (crevice) suction attachment of a vacuum cleaner to remove dust and lint from heater and heating element.
- Lubricate the motor with SAE No. 10 oil. Two (2) oil spouts are located on front and back of motor.
- Reinstall front grille with previously removed screws. Restore power to the heater.

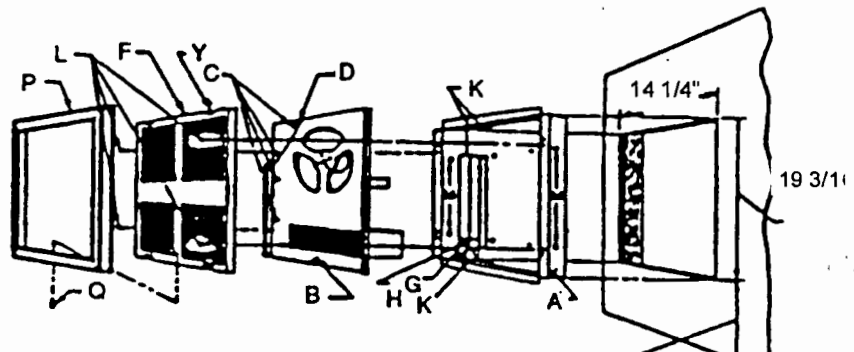


FIG.1 Flush Mounted

8" MINIMUM TO FINISHED FLOOR

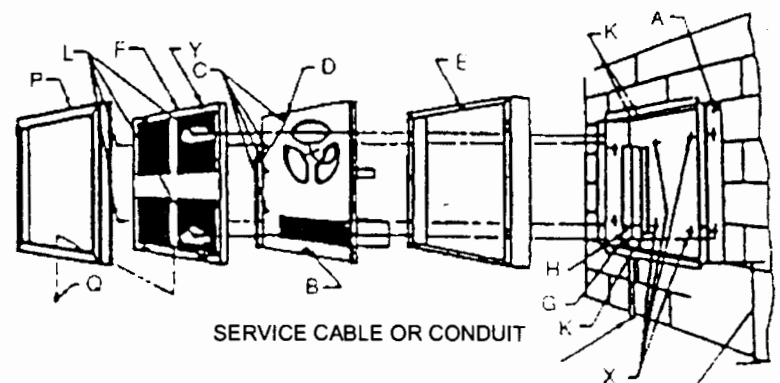


FIG.2 Surface Mounted

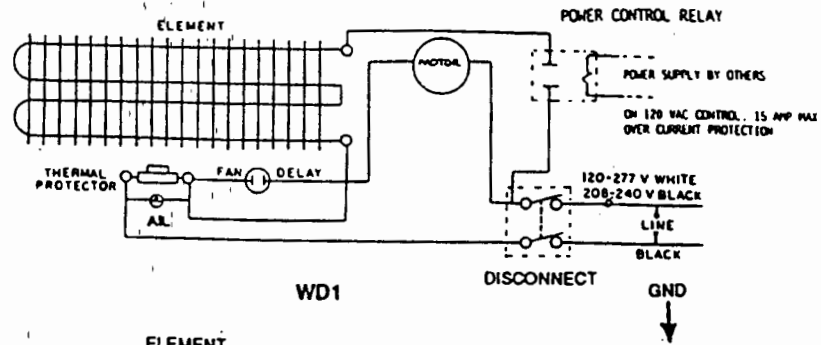
8" MINIMUM TO FINISHED FLOOR

#### NOTE:

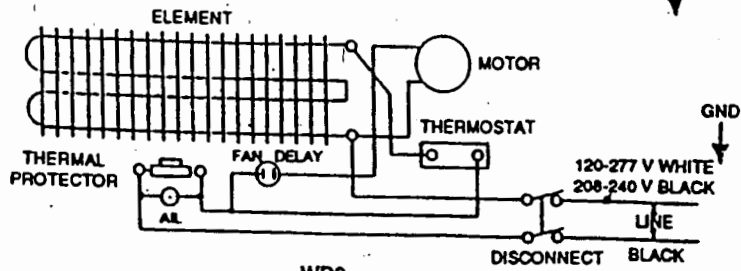
This heater employs a visual alarm (light) to warn that parts of the heater are getting excessively hot. If the alarm illuminates, immediately disconnect power from heater and inspect for any objects on or adjacent to the heater that may cause high temperatures.

**DO NOT OPERATE HEATER WITH THE ALARM (LIGHT) ILLUMINATED.**

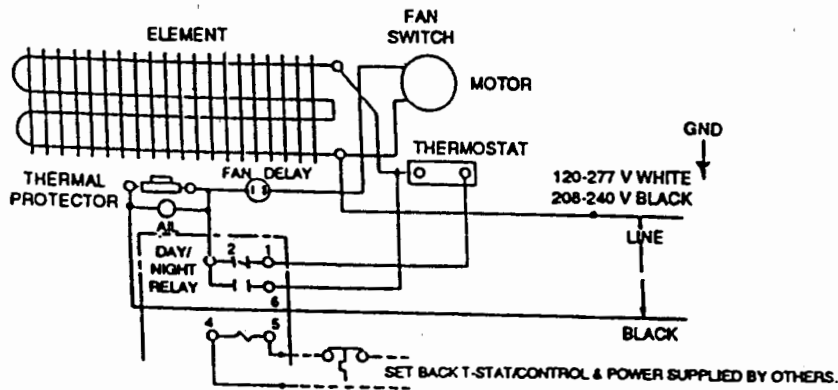




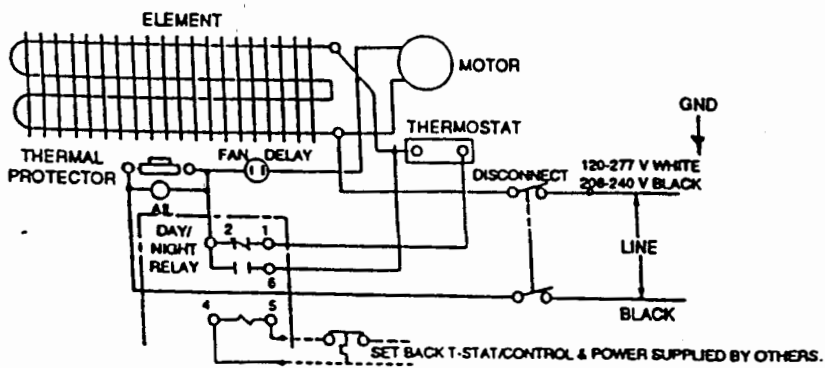
WD1



WD2



WD3



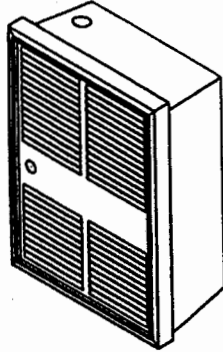
WD4

- WD-1 AFA/3320 WITH DISCONNECT AND POWER CONTROL RELAY
- WD-2 AFA/3320 WITH DISCONNECT
- WD-3 AFA/3320 WITH DAY/NIGHT RELAY
- WD-4 AFA/3320 WITH DAY/NIGHT RELAY AND DISCONNECT

AIL = ALARM INDICATOR LIGHT

# INSTALLATION AND OPERATION INSTRUCTIONS

303, 304, 305, CRH, CRQ, CFA SERIES



**CAUTION:** To prevent electric shock disconnect power to heater at main service before wiring or service.

**CAUTION:** Do not obstruct the front of the heater with curtains, furniture, doors, etc. Do not place heaters under towel racks. Proper operation of the heater requires a free flow intake and exhaust of air.

## GENERAL

These heaters are designed for 2 X 4 recessed or surface mount installation. The heaters may be wall mounted in a vertical or horizontal position and ceiling mounted. The minimum clearance from wall box to adjacent wall or floor is 6 inches. These heaters must not be installed without wallbox model no. 30WB.

### INSTALLATION OF WALL BOX 30 WB FOR NEW CONSTRUCTION

1. Position wall box a minimum of 6 inches from adjacent wall and floor. Secure to wall stud with nails or screws. Wall box must be installed with front edge flush with finished wall surface. See figure 1.
2. Remove knockout in wall box for power source, and install cable clamp.
3. Insert supply cable through clamp allowing 6-8" for field wiring.

**NOTE:** Field wiring must enter wall box where the corner wiring compartment is located.



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**corporation**

*America's Comfort Conditioning Company*

## INSTALLATION OF WALL BOX 30WB

### FOR EXISTING CONSTRUCTION

1. Carefully cut a hole measuring  $9\frac{1}{4}$ " wide by  $12\frac{1}{4}$ " long in wall. Wall box 30WB must be attached to a wall stud on one edge. Minimum clearances of 6" must be maintained to adjacent surfaces. Attach wall box and secure power cable as in new construction.

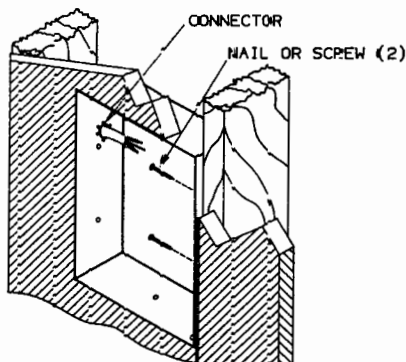


FIG. 1

### FIELD CONVERSION FOR LOWER WATTAGE

To convert heater to a lower wattage rating. Remove red jumper from heating element (see figure 2). The wattage will be reduced to half of the nameplate wattage. See specification chart for available wattage.

### INSTALLATION OF HEATER ASSEMBLY

1. Place heater into wall box and secure with the two no. 8 x  $\frac{3}{4}$ " screws provided.
2. Connect power supply to heater pigtailed with wirenuts or crimp terminals.
3. After field connections are made, push wires into wiring compartment and secure wiring compartment cover to heater using no. 8 X  $\frac{1}{2}$ " screw provided.

### INSTALLATION OF GRILLE AND KNOB

1. Place the two no. 8 oval head screws into grille mounting holes.
2. Align grille with heater and secure. Be careful not to over tighten as this may cause fan blade to strike grille.
3. To install knob, remove hole plug in grille and align flat of thermostat shaft with flat on knob. Push knob onto shaft until knob almost touches grille.
4. For tamper-resistant installation, set thermostat with knob, remove knob and replace hole plug. Retain knob for future use.



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**Johnson City Corporation**  
America's Comfort Conditioning Company

## OPERATION

1. Turn on the power supply to heater.
2. Rotate thermostat knob fully clockwise. This heater is equipped with a fan delay, so the fan will be delayed 45 –60 seconds after the element is energized.
3. Allow the room to reach desired temperature, then rotate thermostat knob counter clockwise until thermostat clicks. Fan will continue to run for 45 – 60 seconds to purge warm air from heater enclosure. The heater will continue to cycle on and off in the selected temperature range.
4. For remote thermostat operation, remove wire nut on wires marked T1 and T2. Connect single pole remote thermostat to T1 and T2. Thermostat wiring must be the same size as power supply wiring. See specification chart for minimum wire size.

**NOTE:** The wall thermostat cycles the heating element only. Direct runs of supply service leads L1 and L2 supplies continuous power to the fan motor, and the heater should be considered live at all times. Move the disconnect switch to the off position or disconnect power at main distribution box before any maintenance work. Turning the thermostat to low position will not disconnect the heater.

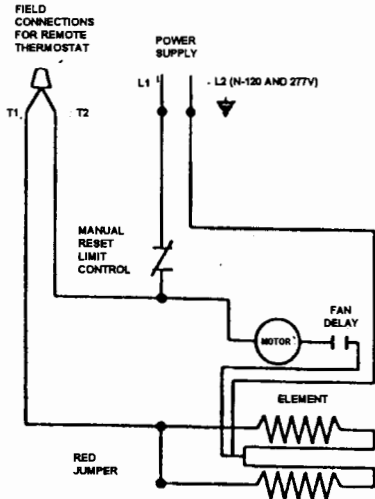
**NOTE:** This heater is equipped with a manual reset limit control. The front grille must be removed to reset limit. Disconnect power before reset button is pushed.

## SPECIFICATIONS

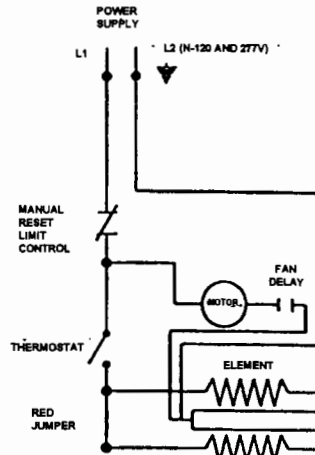
MODEL NO.	VOLTS	WATTAGE *	BTU/HR	AMPERAGE	MIN. ** WIRE SIZE 60 Deg C
E3035 CRH115	120	1500/750	5120/2560	12.5/6.25	12 AWG.
E3045 CRQ115	120	1500/750	5120/2560	12.5/6.25	12 AWG.
E3055 CFA115	120	1500/750	5120/2560	12.5/6.25	12 AWG.
E3038 CRH118	120	1800/900	6143/3072	15/7.5	12 AWG.
E3048 CRQ118	120	1800/900	6143/3072	15/7.5	12 AWG.
E3058 CFA118	120	1800/900	6143/3072	15/7.5	12 AWG.
F3032 CRH820	208	2000/1000	6826/3413	9.6/4.8	14 AWG.
F3042 CRQ820	208	2000/1000	6826/3413	9.6/4.8	14 AWG.
F3052 CFA820	208	2000/1000	6826/3413	9.6/4.8	14 AWG.
H3032 CRH220	240/208	2000/1000 1500/750	6826/5120 3413/2560	8.33/4.16 7.22/3.6	14 AWG.
H3042 CRQ220	240/208	2000/1000 1500/750	6826/5120 3413/2560	8.33/4.16 7.22/3.6	14 AWG.
H3052 CFA220	240/208	2000/1000 1500/750	6826/5120 3413/2560	8.33/4.16 7.22/3.6	14 AWG.
G3032 CRH720	277	2000/1000	6826/3413	7.22/3.61	14 AWG.
G3042 CRQ720	277	2000/1000	6826/3413	7.22/3.61	14 AWG.
G3052 CFA720	277	2000/1000	6826/3413	7.22/3.61	14 AWG.

\* Factory wired for higher wattage, field convertible to lower wattage.

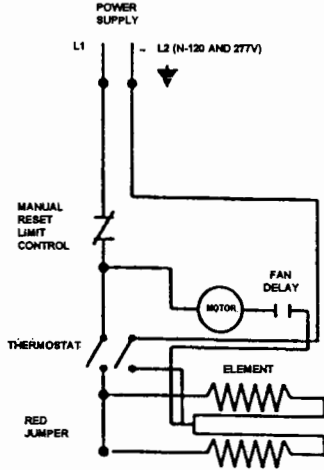
\*\* Use copper wire only. All wiring must conform to N.E.C. and Local Electrical Codes



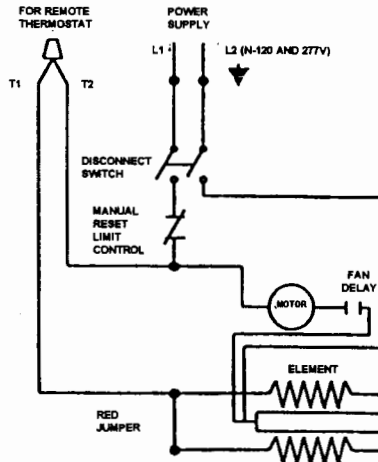
WD 1 NO OPTION



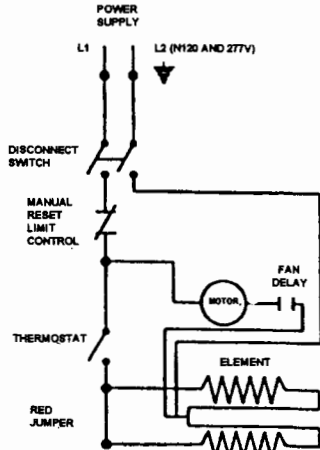
WD 2 OPTION T



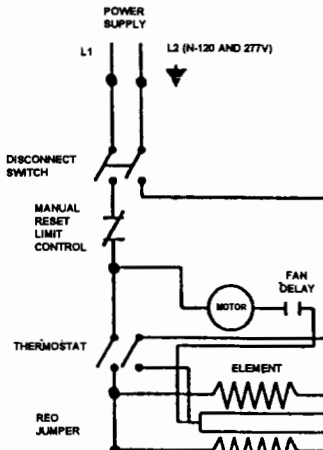
WD 3 OPTION T2



WD 4 OPTION D



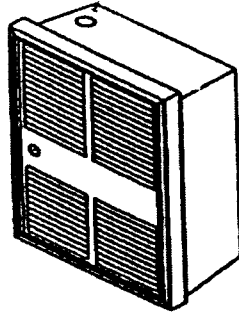
WD 5 OPTION TD



WD 6 OPTION T2D

FIG. 2

**INSTALLATION AND OPERATION INSTRUCTIONS**  
**303, 304, 305, CRH, CRQ, CFA SERIES**  
**2250 WATT MODELS**



**Caution:** To prevent electric shock disconnect power to heater at main service before wiring or service.

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**GENERAL**

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**FOR NEW CONSTRUCTION**

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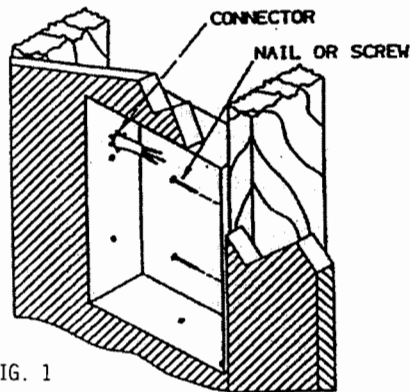


FIG. 1

**NOTE: IN THE VERTICAL POSITION THE HEATER CAN BE MOUNTED ONLY FOR BOTTOM DISCHARGE.**

### FIELD CONVERSION FOR LOWER WATTAGE

To convert heater to a lower wattage rating, see Fig. 2.

### INSTALLATION OF HEATER ASSEMBLY

1. Place heater into wall box and secure with the two no. 8 X 1/2 screws provided.
2. Connect power supply to heater pigtails with wirenuts or crimp terminals.
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**OPERATION**

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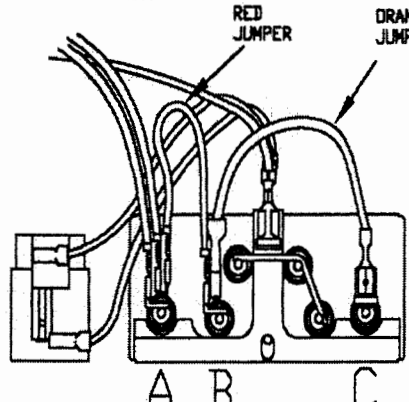
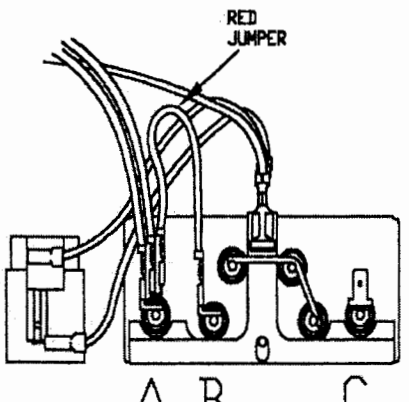
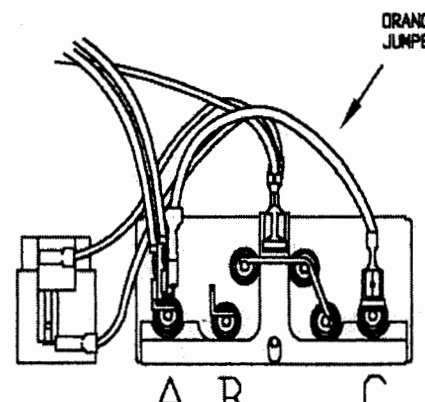
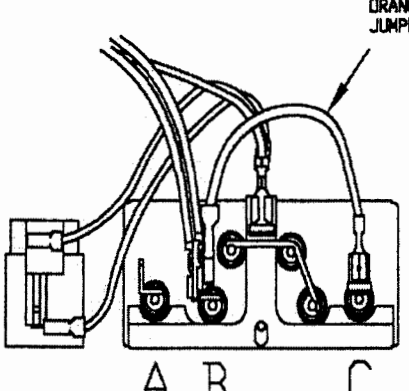
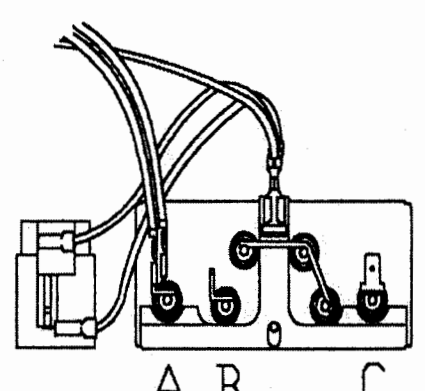
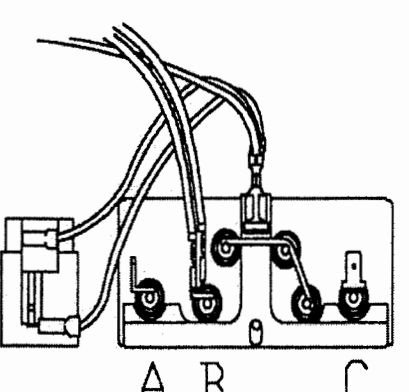
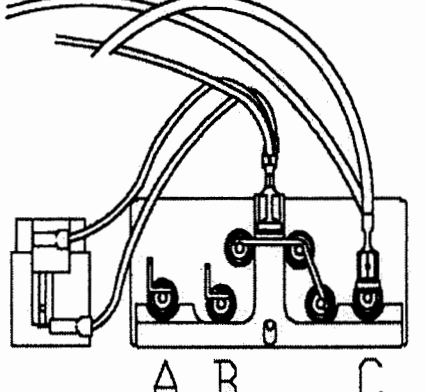
**SPECIFICATIONS TABLE 1**

MODEL NO.	VOLTS	WATTAGE *	BTU/HOUR	AMPERAGE	MIN. ** WIRE SIZE 60°C
F30322, CRH822 F30422, CPQ822 F30522, CFA822	208	500, 750, 1000 1250, 1500, 1750 2250	1707, 2560, 3413, 4266, 5120, 5973 7680	10.8	14 AWG.
H30322, CRH222 H30422, CPQ222 H30522, CFA222	240	500, 750, 1000 1250, 1500, 1750 2250	1707, 2560, 3413, 4266, 5120, 5973 7680	9.4	14 AWG.

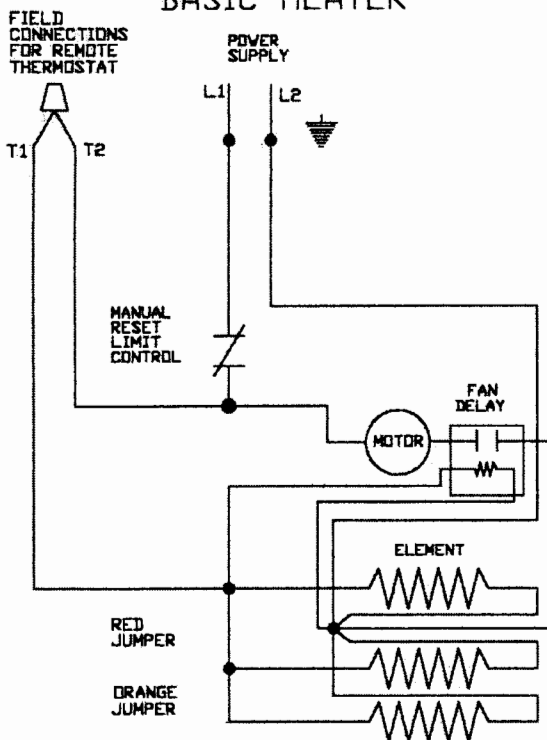
\* Factory wired for higher wattage, field convertible to lower wattage.

\*\* Use copper wire only. All wiring must conform to N.E.C. and local electric codes.

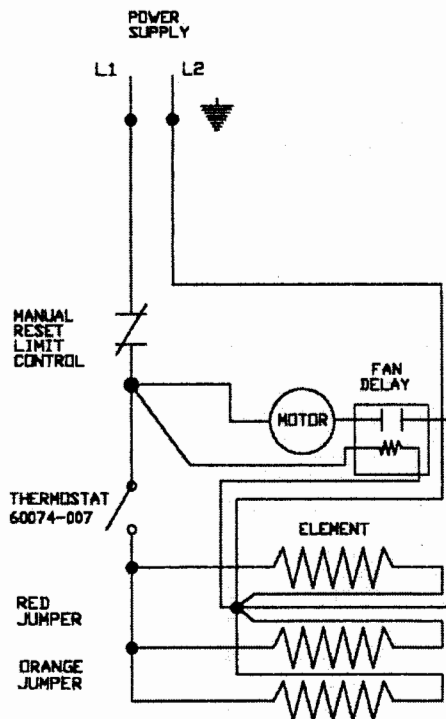
FIG. 2 WATTAGE CONVERSION CHART

	<p>WD-1 2250W</p>	<p>WD-2 1750W Remove orange jumper.            WD-3 1500W Remove red jumper and move orange jumper to terminal 'A'.            WD-4 1250W Remove red jumper, remove wires from terminal 'A' to terminal 'B'.            Connect orange jumper to terminals 'B' and 'C'.            WD-5 1000W Remove orange and red jumpers.            WD-6 750W Remove orange and red jumpers.            Move wires from terminal 'A' to 'B'.            WD-7 500W Remove orange and red jumpers.            Move wires from terminal 'A' to 'C'.</p>	
	<p>WD-2 1750W</p>		<p>WD-3 1500W</p>
	<p>WD-4 1250W</p>		<p>WD-5 1000W</p>
	<p>WD-6 750W</p>		<p>WD-7 500W</p>

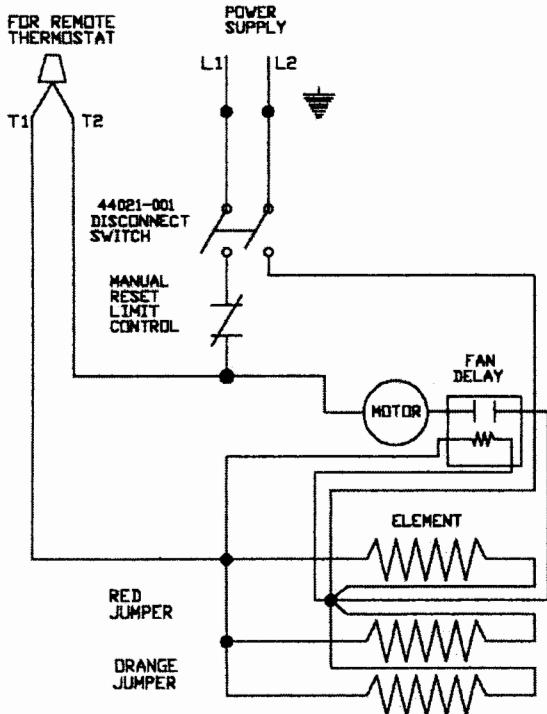
### BASIC HEATER



### T OPTION



### D OPTION



### T2 OPTION

