Type UB-2502A and UB-3002A
Forced-Air Heater

Specifications – Table A

<table>
<thead>
<tr>
<th>Model</th>
<th>Volts and Phase</th>
<th>kW</th>
<th>Horizontal Air Discharge</th>
<th>Wt. (Lbs.)</th>
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<tbody>
<tr>
<td>UB-2502A</td>
<td>240V, 550V, 575V, 600V (3ø) 480V (1ø or 3ø)</td>
<td>25</td>
<td>48'</td>
<td>185</td>
</tr>
<tr>
<td>UB-3002A</td>
<td>240V, 550V, 575V, 600V (3ø) 480V (1ø or 3ø)</td>
<td>30</td>
<td>48'</td>
<td>185</td>
</tr>
</tbody>
</table>

IMPORTANT

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

WARNING: 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. For these applications see PDS CXH-EP (PF305).

WARNING: Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.

Do not mount mercury type thermostat directly on unit. Vibration could cause heater to malfunction.

The heater must be mounted at least 7’ above the floor to prevent accidental contact with the heating elements or fan blade which could cause injury.

Keep at least 5’ clearance in front of the heater. Refer to Figures 1 and 2 for side, top and back clearance requirements. The wall or ceiling mounting structure and the anchoring provision must be of sufficient strength to support the combined weight of the heater and mounting bracket. (Refer to Table A for weights of heater and bracket).

Fan blade rotation must be checked. If airflow is not moving out through the louvers, interchange any two of the three customer power leads on three-phase units only.
**Mounting**

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

**WARNING:** These heaters are designed for wall or ceiling mounting only. Other modes of mounting voids factory warranty.

1. Height above floor
   - A. In areas where ceiling height is more than 12 feet, recommended mounting height is approximately 10 feet to underside of heater.
   - B. For ceiling heights of 12 feet or less, maximum mounting height is determined by use of ceiling mounting brackets offered with these heaters. Minimum spacing to ceiling is 14–1/4”.
   - C. In either case, the minimum mounting height is 7 feet from floor to bottom of heater. (See Figures 1 and 2.)

2. Spacing to adjacent walls
   - A. Rear of case to back wall 11” minimum.
   - B. Side of case to side wall 12” minimum.

3. If two or more units are operated in the same enclosed space, their discharges should be directed to aid in development of mass air movement for uniform heat dispersal.

4. Controlling thermostats to individual heaters should be mounted at shoulder height on inside walls or columns.

**Wiring**

Note: All wiring should be done in accordance with local codes and the National Electrical Code by a qualified person.

**WARNING:** Hazard of Electric Shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

1. Connect heater according to the voltage and frequency specified on the nameplate and using the appropriate wiring diagram (Figures 3 thru 11).

   **Note:** Be sure to check the voltage rating of the fan motor since it is not necessarily the same as the heater circuit.

2. If an external transformer is used to step down the voltage for operating the fan motor, use appropriate wiring diagram (Figures 8 thru 11).

3. Heaters are not provided with a control switch and should be controlled by externally mounted disconnect switches and/or separately mounted thermostat and control switch as recommended in appropriate wiring diagrams (Figures 3 thru 11). Key to proper wiring diagram is the part number (P/N) of internal wiring diagram located on inside of the hinged cover of the terminal box.

4. Protection against overheating is provided by an internal automatic thermal cutout which opens the electric circuit if the normal air-flow is restricted or stopped. Cutout automatically energizes heater on removal of the obstruction.

**Wiring Diagrams**

- **Heater Control** — 1 — By Fused Control Disconnect Switch When Thermostat is Integral to Heater.
  - 2 — By Fused Control Disconnect Switch or Optional External Control Switch When Thermostat is External to Heater.

- **Type "UB" Heater Internal Wiring Diagrams**

  - **Note:** See inside of wiring compartment door for internal wiring diagram.
  - P/N 776-028799-005
  - P/N 776-028799-011
  - P/N 776-028799-019

- **Use this diagram for heaters rated as follows:**
  - UB-2502A and UB-3002A rated — 240V, 3p (with 115V or 230V fan motor)
  - 480V, 1s (with 115V fan motor)

Figure 3
WIRING DIAGRAMS

Figure 4

Using this diagram for heaters rated as follows:
UB-2502A and UB-3002A rated —
240V, 3a (with 115V or 230V fan motor)
480V, 3a (with 115V fan motor)

Factory Wiring ————
Field Wiring ————

Figure 5

Using this diagram for heaters rated as follows:
UB-2502A and UB-3002A rated —
480V, 3a (with 115V or 480V, 3a fan motor)
550V, 3a (with 115V fan motor)
575V, 3a (with 115V fan motor)
600V, 3a (with 115V fan motor)

Factory Wiring ————
Field Wiring ————
**WIRING DIAGRAMS**

Figure 6

**480, 550, 575, 600 Volt 3 Phase Power Lines**

- **3 Pole Fused Disconnect Switch**

**Heater Control**

- 1 — By Fused Control Disconnect Switch When Thermostat is Integral to Heater.
- 2 — By Fused Disconnect Switch or Optional External Control Switch When Thermostat is External to Heater.

**Type "UB" Heater Internal Wiring Diagrams**

- Note: See inside of wiring compartment door for internal wiring diagram.
- P/N 170-026799-010
- P/N 170-026799-022

![Wiring diagram]

Use this diagram for heaters rated as follows:

- UB-2502A and UB-3002A rated — 480V, 3a (with 115V or 460V, 3a fan motor)
- 550V, 3a (with 115V fan motor)
- 575V, 3a (with 115V fan motor)
- 600V, 3a (with 115V fan motor)

![Factory Wiring — Field Wiring —]

Figure 7

**480 Volt, Single Phase Power Lines**

- **Single Phase**

- **120 or 240 Volt Single Phase**
  - See Nameplate for Motor Voltage

**Type "UB" Heater Internal Wiring Diagrams**

- Note: See inside of wiring compartment door for internal wiring diagram.
- P/N 170-026799-013

![Wiring diagram]

Use this diagram for heaters rated as follows:

- UB-2502A and UB-3002A rated — 480V, 1a (with 120V or 230V fan motor)

![Factory Wiring — Field Wiring —]
WIRING DIAGRAMS

480 Volt, Single Phase Power Lines

Power Disconnect Switch
2 Pole (Single Phase)

Type “UB” Heater Internal Wiring Diagrams
Note: See inside of wiring compartment door for internal wiring diagram.
P/N 176-026799-014

Use this diagram for heaters rated as follows:
UB-2502A and UB-3002A rated –
480V, 1a (with 230V fan motor)

Heater Control — 1 — By Power Disconnect Switch When Thermostat is Integral to Heater.
— 2 — By Power Disconnect Switch or Optional Control Switch When Thermostat is External to Heater.

240 Volt Single Phase

Motor Disconnect Switch

Control Switch (Optional)

Thermostat (Optional)

Factory Wiring
Field Wiring

Figure 8

480, 550, 575, 600 Volt 3 Phase Power Lines

Fused Disconnect Switch

120 or 240 Volt Single Phase See Nameplate for Motor Voltage

Motor Disconnect Switch

Type “UB” Heater Internal Wiring Diagrams
Note: See inside of wiring compartment door for internal wiring diagram.
P/N 176-026799-015

Use this diagram for heaters rated as follows:
UB-2502A and UB-3002A rated –
480V, 3e (with 120V or 230V fan motor)
550V, 3e (with 120V or 230V fan motor)
575V, 3e (with 120V or 230V fan motor)
600V, 3e (with 120V or 230V fan motor)

Heater Control — 1 — By Fused Control Disconnect Switch When Thermostat is Integral to Heater.
— 2 — By Fused Control Disconnect Switch or Control Switch When Thermostat is External to Heater.

115/120 Volt Single Phase

Fused Control Disconnect Switch

Control Switch (Optional)

Thermostat (Optional)

Factory Wiring
Field Wiring

Figure 9
OPERATION

1. **DANGER: Hazard of Fire.**
   A. Do not restrict air flow through heater by placing fabric or other obstructions in front of or behind the heater. Increased discharge temperatures can discolor or ignite some heat sensitive combustible materials.
   B. Do not operate heater in areas where combustible lint, dust or flammable vapors, gases or liquids are present.

2. Do not operate heater in corrosive atmosphere conditions to avoid destructive damage to heater.

3. Avoid operating heater in dusty environment which can foul heater fins to dissipate heat or impair motor ventilation leading to excessive operating temperatures.

4. Do not operate heater in ambient temperatures exceeding 90°F.
MAINTENANCE

WARNING: Turn off all power to service heater. Do not attempt to service heater while unit is operating as there is hazard of electric shock, injury from operating fan, and burns from hot heating elements.

1. Fan motors in these heaters are provided with sealed ball bearings, factory lubricated, requiring no further lubrication under normal service conditions.

2. Vacuum heater before activating heater for next heating season to remove accumulated dust or lint which otherwise may smoke or incinerate on initial heat up.

3. Periodically inspect all electrical connections and terminals to avoid electrical wiring difficulties. Inspect all wiring for frayed or worn insulation.

RENEWAL PARTS IDENTIFICATION

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>Phase</th>
<th>Heating Element</th>
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<tr>
<td>UB-2502A</td>
<td>240</td>
<td>3</td>
<td>118-045307-011 (6)</td>
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<td></td>
<td>480</td>
<td>1 or 3</td>
<td>118-045307-012 (6)</td>
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<tr>
<td></td>
<td>550</td>
<td>3</td>
<td>118-045307-013 (6)</td>
</tr>
<tr>
<td></td>
<td>575</td>
<td>3</td>
<td>118-045307-014 (6)</td>
</tr>
<tr>
<td></td>
<td>600</td>
<td>3</td>
<td>118-045307-015 (6)</td>
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<td>UB-3002A</td>
<td>240</td>
<td>3</td>
<td>118-045307-002 (6)</td>
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<td></td>
<td>480</td>
<td>1 or 3</td>
<td>118-045307-003 (6)</td>
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<tr>
<td></td>
<td>550</td>
<td>3</td>
<td>118-045307-007 (6)</td>
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<tr>
<td></td>
<td>575</td>
<td>3</td>
<td>118-045307-016 (6)</td>
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<td></td>
<td>600</td>
<td>3</td>
<td>118-045307-017 (6)</td>
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</table>

Note: Number in parentheses ( ) indicates the quantity of that part required.
## RENEWAL PARTS IDENTIFICATION

### MOTORS AND CAPACITORS

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Manufacturer's Cat. No.</th>
<th>Specifications</th>
<th>Part No.</th>
<th>Manufacturer's Cat. No.</th>
<th>Specifications</th>
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<tr>
<td>193-025776-001</td>
<td>HF2K007N</td>
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<td>040-025779-001</td>
<td>1270 Oil 370 5 MFD</td>
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<td>HF2K006N</td>
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<td>040-025779-002</td>
<td>1271 Oil 370 6 MFD</td>
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<td>193-302120-011</td>
<td>P55YYBVY-887</td>
<td>460 0.9 3 60 1725 1/3</td>
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### TRANSFORMERS

<table>
<thead>
<tr>
<th>Size</th>
<th>Part Number</th>
<th>V.A. Rating</th>
<th>Primary</th>
<th>Secondary</th>
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<tbody>
<tr>
<td>Large</td>
<td>315-052169-011</td>
<td>970</td>
<td>220, 230, 240, 440, 460, 480</td>
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<td>315-304252-003</td>
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<td>575</td>
<td>120</td>
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### FUSES

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<th>Part Number</th>
<th>Amps</th>
<th>Manufacturer's Cat. No.</th>
<th>Use</th>
<th>Part Number</th>
<th>Fuseholders</th>
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<tbody>
<tr>
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<td>JKS 35</td>
<td>Power</td>
<td>129-025643-001</td>
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<td>128-026510-004</td>
<td>40</td>
<td>JKS 40</td>
<td>Control/Motor</td>
<td>129-048473-001</td>
<td>2, 3, 4, 5 poles contact section</td>
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<td>JKS 45</td>
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<td>129-048475-001</td>
<td>End barrier section for use with 129-048473-001</td>
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<td>50</td>
<td>JKS 50</td>
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<td>128-027590-001</td>
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<td>KTK-R-1</td>
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<td>129-048473-001</td>
<td>2, 3, 4, 5 poles contact section</td>
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<td>128-027590-008</td>
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### PARTS COMMON TO ALL HEATERS

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#### Limited Warranty: