

SECTION 23 55 23 - FUEL-FIRED UNIT HEATERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. **KROGER NATIONAL ACCOUNT AGREEMENT:** Contractor purchased - Contractor installed.
 - a. The following items are to be provided by the Contractor and purchased under a national account agreement with the Kroger Co.:
 - 1) **Material:** Self-contained horizontal type suspended gas-fired unit heaters.
2. Installation of Self-contained horizontal type suspended gas-fired unit heaters by Contractor.
3. Additional items supplied and installed by Contractor not part of Kroger National Account Agreement:
 - a. Fasteners and other items necessary for a complete installation.

B. Refer to Drawings for quantity and sizes and extent of gas-fired unit heater work.

1.2 QUALITY ASSURANCE:

A. Codes and Standards

1. AGA and ARI Compliance: Unit heaters will be constructed in accordance with ARI ratings and standards with AGA approved gas train.
2. Code Compliance: Gas-fired unit heaters will be listed and labeled in accordance with the National Electrical Code and by an organization acceptable to authority having jurisdiction.

1.3 SUBMITTALS

- A. Product Data: For each type of fuel-fired unit heater indicated including rated capacities, operating characteristics, and accessories.
- B. Shop Drawings: Equipment assemblies and dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.5 WARRANTY

- A. Warranty information for gas-fired unit heaters is specified in Division 01 Section "Product Warranties."

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Product: Nortek, Inc. (Reznor Unit Heaters).
 - 1. Kroger Account Representative; 859-472-2700. Specify store number and address when ordering.
 - 2. No substitutions allowed.

2.2 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Capacities and Characteristics:
 - 1. Gas Input: 131,000 Btu/h (38.4 kW).
 - 2. Gas Output: 121,830 Btu/h (35.7kW).
 - 3. Annual Gas Utilization Efficiency: 93 percent.
 - 4. Minimum Airflow: 2256 cfm (63.9 cmm).
 - 5. External Static Pressure: Insert inches wg (kPa).
 - 6. Motor Enclosure: Open.
 - 7. Electrical Characteristics:
 - a. Motor Size: 1/4 hp.
 - b. Motor Speed: 1050 rpm.
 - c. Volts: 115.
 - d. Phase: Single.
 - e. Hertz: 60.
 - f. Full-Load Amperes: 6.3.
 - g. Maximum Overcurrent Protection: 15.

2.3 MANUFACTURED UNITS

- A. Description: Factory assembled, piped, and wired, and complying with ANSI Z83.8/CSA 2.6.

1. Include fittings, vent pipes, and vent termination caps as required by manufacturer and as indicated on Drawings.
- B. Gas Type: Design burner for natural gas having characteristics same as those of gas available at Project site.
- C. Type of Venting: Power vented.
- D. Housing: Steel, with integral draft hood and inserts for suspension mounting rods.
- E. Accessories:
 1. Four-point suspension kit.
 2. Vent termination kit.
- F. Heat Exchanger: #409 Stainless steel, primary heat exchanger, and extruded aluminum secondary heat exchanger.
- G. Propeller Unit Fan:
 1. Formed-steel propeller blades riveted to heavy-gage steel spider bolted to cast-iron hub, dynamically balanced, and resiliently mounted.
 2. Fan-Blade Guard: Galvanized steel, complying with OSHA specifications, removable for maintenance.
- H. Controls: Regulated redundant gas valve containing pilot solenoid valve, electric gas valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff all in one body.
- I. Electrical Connection: Factory wire motors and controls for a single electrical connection.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install and connect gas-fired unit heaters and associated fuel and vent features and systems according to NFPA 54, applicable local codes and regulations, and manufacturer's written installation instructions.
- B. Suspended Units: Suspend from substrate using threaded rods, spring hangers, and building attachments. Secure rods to unit hanger attachments. Adjust hangers so unit is level and plumb.
- C. Install piping adjacent to fuel-fired unit heater to allow service and maintenance.
- D. Gas Piping: Comply with Division 23 Section "Fuel Gas Piping." Connect gas piping to gas train inlet; provide union with enough clearance for burner removal and service.
- E. Vent Connections: Comply with Division 23 Section "Gas Vents."
- F. Electrical Connections: Comply with applicable requirements in Division 26 Sections.

1. Install electrical devices furnished with heaters but not specified to be factory mounted.
- G. Adjust initial temperature set points.
- H. Adjust burner and other unit components for optimum heating performance and efficiency.

3.2 FIELD QUALITY CONTROL

- A. Tests and Inspections: Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 1. Gas supply pipe fittings inside unit may become loose during shipment. Test gas supply system fittings inside and outside the unit before startup with a noncorrosive leak-detecting fluid such as a soap solution.

3.3 CLEAN UP

- A. Clean up work provided under this section. Touch-up with matching paint all damaged factory finishes.

END OF SECTION 23 55 23