

## SECTION 23 7400

### SINGLE PACKAGE ROOFTOP AIR CONDITIONERS

#### GENERAL

##### 1.1 DESCRIPTION

- A. Furnish and install factory assembled, piped and wired single package rooftop air conditioners of the type, operational characteristics and capacity as shown and scheduled and as specified herein. All rooftop units shall be by the same manufacturer. The manufacturer shall have available factory trained service engineers and an inventory of replacement parts within a 100-mile radius of the job site.
  - 1. Acceptable manufacturers are Trane, Carrier, Lennox, and York.
  - 2. Compressor shall be warranted against parts failure for five (5) years.
  - 3. Submit catalog cuts, certified performance data, and dimensional data.

#### PRODUCTS

##### 2.1 EQUIPMENT AND MATERIALS

- A. Unit shall be designed specifically for outdoor installation with all exterior surfaces of phosphatized, zinc-coated steel with primer and baked enamel finish. All components, including accessories shall be contained within the unit.
- B. Access to internal components shall be afforded by removable gasketed access panels with quick release latches and lifting handles.
- C. Unit shall have factory installed lifting lugs capable of accepting standard lifting slings and spreader bars to facilitate hoisting.
- D. Electrical power connections shall be to a single point.
- E. Unit shall be insulated with a minimum of 1", 1-pound density glass fiber insulation mat-faced.
- F. Unit shall be designed for curb mounting and mate with a full perimeter roof curb for a complete weather tight seal. ~~Curb shall be a minimum of 12" high and manufactured of 12-gauge zinc-coated steel and be supplied by the unit manufacturer with wood nailed strip and gasketing.~~ Unit sides shall overhang the curb to form protective drip lip. Supply and return ducts shall connect to the curb prior to placement of the unit. The manufacturer shall furnish gasketing materials for a leak-tight seal between the unit and cut connections. ***Coordinate with Section 23 0300, "Roof Curbs."***

##### 2.2 HEATING SECTION

- A. Provide aluminum or stainless steel slotted port gas burners and aluminized steel heat exchanger. Warranty on heat exchanger shall be 10 years.
- B. Controls shall include redundant gas valve and intermittent pilot with electric spark ignition.

##### 2.3 COMPRESSOR

- A. Semi-hermetic reciprocating compressor shall be provided with capacity reduction of a minimum of 50% on units 15 tons and larger. Units smaller than 15 tons shall have hermetic compressors.
- B. A crankcase heater shall be provided and wired to be active continuously.

- C. The compressor shall be provided with spring isolators and flexible discharge line and hot gas muffler.
- D. Motor shall be specifically designed for operation within a refrigerant atmosphere. Inlet screens shall be provided. Motor shall be capable of starting and continuously operating at ambients as high as 120 degrees F. Motor shall have overload protection and internal thermostats.
- E. Compressor motor shall be capable of withstanding voltage fluctuations of plus or minus 10% of name plated voltage.

## **2.4 REFRIGERATION CIRCUIT**

- A. The unit shall be certified as complying with ARI Standard 210 and bear the ARI seal.
- B. The evaporator coil shall consist of 3/8" O.D. copper tubes mechanically bonded to aluminum plate fins and be pressure and leak tested at 425 psig. Condenser fans shall be statically and dynamically balanced. Fan motors shall be UL listed for outdoor use, have built-in thermal overload protection and permanently lubricated bearings. Condensing section shall be designed for a maximum of 130 degrees F condensing temperature with ambient air at 95 degrees F. Coil shall be circuited for subcooling.
- C. Unit shall incorporate an insulated and sealed drain pan with threaded drain connections at each end of the unit. The Contractor shall install P-traps.
- D. Refrigeration controls shall include as a minimum, high and low pressure control, compressor winding thermostat and overload, lockout circuit re-settable at the unit thermostat, contactors for condenser/evaporator fans and compressor, and 24 volt control power transformer.
- E. Unit shall ship with an operating charge of R-22.

## **2.5 EVAPORATOR FANS**

- A. Evaporator fan shall be direct driven or belt driven forward curved type with an adjustable sheave and motor sized to meet the air flow and static pressure as scheduled on the Drawings.
- B. Fans assembly shall be isolated from the unit on RIS isolators.
- C. Motor shall have thermal overload protection and motor and fan bearings shall be permanently lubricated.
- D. Fan wheel shall be protected from corrosion with a painted finish.

## **2.6 ACCESSORIES TO BE PROVIDED (See Schedules on Drawings)**

# **EXECUTION**

## **3.1 EQUIPMENT**

- A. Unit shall be run tested at factory before shipping.

## **3.2 INSTALLATION**

- A. Unit shall be installed level within manufacturer's recommendations.
- B. The Contractor shall install a second set of filters at job completion.

# **END OF SINGLE PACKAGE ROOFTOP AIR CONDITIONERS**