SECTION 236313 - AIR-COOLED REFRIGERANT CONDENSERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes packaged, air-cooled refrigerant condensers for [outdoor] [indoor] installation.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For air-cooled refrigerant condensers. Include plans, elevations, sections, details, and attachments to other work.

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

2. Wiring Diagrams: For power, signal, and control wiring.

C. Operation and maintenance data.

1.3 QUALITY ASSURANCE

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. ASHRAE/IESNA 90.1 Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carrier Corporation; Commercial HVAC Systems.

2. Trane; a business of American Standard Companies.

3. YORK; a Johnson Controls company.
2.2 MANUFACTURED UNITS

A. Description: Factory assembled and tested; consisting of casing, condenser coils, condenser fans and motors, and unit controls.

B. Refrigerant: R-407C or R-410A

C. Condenser Coil: Factory tested at 425 psig.
   1. Coil Fin: Aluminum
   2. Circuit: To match compressors with liquid subcooling coil.

D. Condenser Fans and Drives: Propeller fans with aluminum fan blades, for vertical air discharge; directly driven with permanently lubricated ball-bearing motors with integral current- and thermal-overload protection.
   1. Weather-proof motors with rain shield and shaft slinger.
   2. Extend grease lines to outside of casing.

E. Operating and Safety Controls: Include condenser fan motor thermal and overload cutouts; 115-V control transformer, if required; magnetic contactors for condenser fan motors and a nonfused factory-mounted and -wired disconnect switch for single external electrical power connection.
   1. Fan Cycling Control: [Head pressure switches] [Ambient thermostats].

F. Casings: Galvanized or zinc-coated steel treated and finished with manufacturer's standard paint coating, Aluminum, or stainless steel, designed for outdoor installation with weather protection for components and controls, and with the following:
   1. Removable panels for access to controls, condenser fans, motors, and drives.
   2. Plated or Stainless-steel fan guards.
   3. Lifting eyes.
   4. Removable legs, [20 inches] [30 inches] [36 inches] [42 inches] high.

2.3 MOTORS

A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
   1. Enclosure Type: Totally enclosed, fan cooled.
   2. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.

2.4 SOURCE QUALITY CONTROL

A. Testing Requirements: Factory test sound-power-level ratings according to ARI 270.
PART 3 - EXECUTION

3.1 INSTALLATION
A. Install units level and plumb, firmly anchored in locations indicated; maintain manufacturer's recommended clearances.
B. Equipment Mounting: Install air-cooled condenser refrigerant condensers using [elastomeric pads] [elastomeric mounts]. Comply with requirements for vibration isolation devices specified in Section 230548 "Vibration and Seismic Controls for HVAC Piping and Equipment."
C. Maintain manufacturer's recommended clearances for service and maintenance.
D. Loose Components: Install electrical components, devices, and accessories that are not factory mounted.

3.2 CONNECTIONS
A. Piping installation requirements are specified in Section 232113 "Hydronic Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
B. Install piping adjacent to machine to allow service and maintenance.
C. Refrigerant Piping: Connect piping to unit with pressure relief, service valve, filter-dryer, and moisture indicator on each refrigerant-circuit liquid line. Refrigerant piping and specialties are specified in Section 232300 "Refrigerant Piping."

3.3 QUALITY CONTROL
A. Complete the manufacturer's installation and startup checklists and resolve all discrepancies.
B. Provide the Commission Agent and SRP PM with the completed checklists/test results.

3.4 TRAINING
A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain units.

END OF SECTION