

## SECTION 15520

### SPLIT SYSTEM CONDENSING UNITS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes Air Cooled Split System Air Conditioning Condensing Units
- B. Related Sections:
  - 1. Section 00700 "General Conditions."
  - 2. Section 00800 "Supplementary General Conditions."
  - 3. Section 07800 "Roof Penetrations"
  - 4. Section 15100 "Mechanical Materials & Methods."
  - 5. Section 15510 "Air Handling Units with Coils."
  - 6. Section 15530 "Refrigerant Piping & Specialties."
  - 7. Section 16000 "Electrical."

##### 1.02 REFERENCES

- A. Air Conditioning Condensing Units shall comply with the following standards:
  - 1. ARI 365-87, "Commercial and Industrial Unitary Air-Conditioning Condensing Units."
  - 2. ANSI/UL303-1988, "Refrigeration and Air-Conditioning Condensing and Compressor Units."
  - 3. ARI 270-84 "Sound Rating of Outdoor Unitary Equipment."

##### 1.03 SYSTEM DESCRIPTION

- A. Performance Requirements
  - 1. Air-conditioning condensing units shall conform to the performance requirements as scheduled on the contract documents.

##### 1.04 SUBMITTALS

- A. Product Data:
  - 1. Split systems condensing units.
- B. Shop Drawings
  - 1. Split system condensing units.

##### 1.05 DELIVERY STORAGE AND HANDLING

- A. Packing and Shipping:

1. Maintain the manufacturers original packing and crating until the unit is on-site ready to be permanently installed.
- B. Acceptance at Site:
  1. Inspect the unit for damage as a result of shipping. Do not accept the unit if damaged and report the damage to the equipment manufacturer immediately.
- C. Storage and Protection:
  1. If the units are not going to be installed for more than two weeks from the time of delivery, store the units indoors, in the original packing and crating in an area safe from potential damaging acts to the units. The contractor shall be responsible for any and all damage to the units from the time of delivery until the project is accepted as complete by the owner.

#### 1.06 WARRANTY:

- A. Provide manufacturer's warranty as follows:
  1. 1 through 5 tons: 5 years on the complete unit.
  2. 7 1/2 tons and over: 1 year parts, 5 year compressor.
  3. Electric Heaters - 5 years .
- B. Warranty term shall commence from date of beneficial use as agreed upon by the owner and contractor.

## **PART 2 PRODUCTS**

#### 2.01 MANUFACTURERS:

- A. York International Corporation, National Account – Geoffrey Illian 405-419-6766
- B. Carrier Corporation
- C. The Trane Company

#### 2.02 EQUIPMENT:

- A. General Description:
  1. Units shall be factory-assembled, single packaged, designed for outdoor installation.
  2. The units shall be factory wired, piped, charged with R-22 refrigerant and factory tested prior to shipment. All units wiring shall be color coded.
  3. Unit shall include:
    - a. Full factory charge of R-22 to accommodate 15' of interconnecting lines.
    - b. Sweat-connect refrigerant line connections with reusable service valves, or quick-connect refrigerant line connections.
    - c. Liquid line filter/drier

- d. Five minute off-cycle timer
- B. Unit Cabinet:
- 1. Unit cabinet shall be 18 gauge pre-painted galvanized sheet steel that complies with ASTM-B117 salt spray test or 500 hours minimum.
  - 2. Drain holes shall be incorporated in the base pan for drainage.
  - 3. Cabinet screws shall comply with ASTM-B117 salt spray test for 750 hours minimum.
- C. Condenser Fan Assembly:
- 1. Condenser fan motor shall be permanent, split capacitor type, have permanently lubricated sleeve bearings, directly connected to the fan blade and shall be equipped with internal overload protection.
- D. Refrigerant Components:
- 1. Compressor:
    - a. Shall be fully hermetic, high efficiency, isolator mounted including an automatic reset internal pressure relief valve, temperature and pressure overload protection, and a high torque, refrigerant-cooled motor.
  - 2. Condenser Coil:
    - a. Shall be constructed of 3/8" copper tubes mechanically expanded into enhanced aluminum fins.
- E. Electrical Requirements:
- 1. All unit power and control wiring shall enter the unit cabinet at a single, factory provided location.

## **PART 3 EXECUTION**

### 3.01 INSTALLATION

- A. General:
- 1. For ground level applications, condensing units must be set on a minimum 6" thick concrete pad, 6" larger than condensing unit in all directions.
  - 2. Unit must be set level to within 1/2" across the entire dimension of the unit in all directions.
  - 3. Locate the unit to maintain the minimum service and airflow clearances as recommended by the manufacturer.
  - 4. Rig the unit into place only by the lifting holes in the base of the unit. Use spreaders longer than the cross dimensions of the unit.

5. Follow manufacturer's instructions to place the unit into service. Special attention shall be given to energizing crankcase heaters prior to starting compressor.

### 3.02 FIELD QUALITY CONTROL

#### A. Tests

1. Cycle unit through all sequences of operation as recommended by the manufacturer. Check operation of all safety switches, lockouts, etc. and repair or replace any parts found to be defective.

### 3.03 DEMONSTRATION

- #### A. Train Owner's representatives on procedures and schedules related to start-up, shutdown, troubleshooting, servicing, and preventative maintenance of the system. Schedule training with Owner's representative through the Architect.

**END OF SECTION**