Guide Specifications RPCY2— 090-120

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HP CONDENSING UNIT

HVAC Guide Specifications

Size Range: 7.5 & 10 Nominal Tons

1.01 Quality Assurance:

A. Unit shall be rated in accordance with AHRI Standard 340/360.
B. Unit construction shall comply with ANSI/ASHRAE 15 safety code latest revision and comply with NEC.
C. Unit shall be constructed in accordance with UL 60335-2-40 standard and shall carry the UL label.
D. Unit cabinet shall be capable of withstanding 500 hour salt spray exposure per ASTM® B117 (scribed specimen).
E. Air-cooled condenser coils for hermetic scroll compressor units shall be leak tested at 250 PSIG, and pressure tested at 450 PSIG.
F. Unit shall be subjected to run test on the assembly line.
G. Unit meets ASHRAE 90.1 2022 minimum efficiency requirements.

1.02 Manufacturer Qualifications:

A. Unit shall be manufactured in a facility registered to ISO 9001:2015 manufacturing quality standard.

1.03 Installer Qualifications:

A. The installer shall be trained to install and service equipment with A2L refrigerants.

1.04 Delivery, Storage, and Handling:

A. Unit shall be shipped as single package only, and shall be stored and handled according to unit manufacturer's recommendations.
B. Unit shall be stored and handled per manufacturer's recommendations.
C. Refer to the manufacturer's installation and operation manual for guidance on how to properly lift the unit.
D. Unit shall only be stored or positioned in the upright position.
E. Shall be able to stack three high from ground for storage.

1.05 Unit Cabinet:

A. Unit cabinet shall be constructed of galvanized steel and coated with a pre-painted baked enamel finish.
B. A heavy-gauge roll-formed perimeter base rail with forklift slots and lifting holes shall be provided to facilitate rigging.
    i. Unit cabinet exterior paint shall be pre-painted steel.
C. No base pan penetration, other than those authorized by the manufacturer, is permitted.
    i. Heavy-Gauge Base Pan and Base Rail 120:
        a. Unit shall have base rails on a minimum of 4 sides.
        b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
        c. Holes shall be provided in the base rail for moving the rooftop for fork truck.
        d. Base rail shall be a minimum of 14 gauge thickness.
    iii. Side Panel/Back Panel
        a. Top panel is removable for service access.
    iv. Electrical Connections
        a. All unit power wiring shall enter unit cabinet a single, factory-prepared, continuous raised flange opening in the base pan.
            1. Thru-the-base capability for 7.5T:
                a. Electrical connections are located close to the ground for a neat-looking installation.
    v. Component access panels (standard):
        a. Cabinet panels shall be easily opened for servicing.
        b. Control box as well as the compressor and other refrigerant controls being accessible through access panels. Control box may be open without affecting the normal operation of the unit. Condenser fan motors are accessible by removing wire grilles.
        c. Fasteners shall be permanently attached.

1.06 Condenser Fans:

A. Condenser fans shall be direct driven PSC, propeller type, discharging air vertically upward.
B. Fan blades shall be balanced.
C. Condenser fan discharge openings shall be equipped with PVC-coated steel wire safety guards.
D. Condenser fan and motor shaft shall be corrosion resistant.
E. Condenser fan motors are accessible by removing wire grilles.

1.07 Refrigerant Components:

A. The refrigerant circuit shall include the following control, safety, and maintenance features:
    i. Refrigerant filter drier.
    ii. Service gauge connections on suction and discharge lines.
    iii. External pressure gauge ports allows pressures to be checked on the side, without removing access panel.

1.08 Compressors:

A. Compressor shall be of the hermetic scroll type.
B. Compressor shall be mounted on rubber grommets.
C. Compressors shall include overload protection.
D. Compressors shall be equipped with a crankcase heater.
E. Compressor shall be equipped with internal high pressure and high temperature protection.

1.09 Condenser Coils:

A. Standard Aluminum Fin—Copper Tube Coils:
    i. Condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
    ii. Condenser coils shall be leak tested to 250 PSIG, pressure tested to 450 PSIG, and qualified to UL 60335-2-40.

1.10 Controls and Safeties:

A. Minimum control functions shall include:
    i. Control wire terminal blocks.
    ii. Compressor lockout on auto-reset safety until reset from thermostat.
    iii. Minimum safety devices which are equipped with automatic reset (after resetting first at thermostat), shall include:
        a. High discharge pressure cutout.
        b. Low pressure cutout.
B. Turn off electric power at the fuse box or service panel before making any electrical connections.
C. The unit must be permanently grounded.
D. Components are not compatible between different refrigerants. Do not use R-410A service equipment or components on R-454B equipment. System or part failure could occur.

1.11 Operating Characteristics:

A. Standard unit shall be capable to operate up to 125.6°F (52°C) and down to 40°F (4°C).
B. Compressor with standard controls shall be capable of operation down to 50°F (10°C), ambient outdoor temperatures. Low ambient accessory kit is necessary if mechanically cooling at ambient temperatures to 0°F (-17.7°C).

1.12 Electrical Requirements:

A. Nominal unit electrical characteristics:
    i. Shall be 208/230V, 3 PH, 60 Hz. The unit shall be capable of satisfactory operation within voltage limits of 187V to 253V.
    ii. Shall be 460V, 3 PH, 60 Hz. The unit shall be capable of satisfactory operation within voltage limits of 414V to 506V.
    iii. Shall be 575V, 3 PH, 60 Hz. The unit shall be capable of satisfactory operation within voltage limits of 514V to 610V.
B. Unit control circuit shall contain a 24V transformer for unit control.
C. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

1.13 Special Features:

A. Low-Ambient Temperature Control
    i. A low-ambient temperature control shall be available as a factory-installed option or as a field-installed accessory. This low-ambient control shall regulate the speed of the condenser-fan motors in response to the saturated condensing temperature of the unit. The control shall maintain correct condensing pressure opens at 250 PSIG and closes at 450 PSIG. Allows unit to operate to 0°F.
B. Condenser Coil Grille
    i. Grille shall add decorative appearance to unit and protect condenser coil from large objects and vandalism.