



Ductless Heat Pump (DHP) Specifications

Applicability – This document outlines the equipment and installation requirements for a ductless heat pump (DHP).

Installation must follow manufacturer's specifications and meet local building, electrical and mechanical codes. The Tacoma Power Ductless Heat Pump specifications are required in addition to the manufacturer specifications and code requirements.

1. TECHNICIAN QUALIFICATIONS

- a. Installation of ductless heat pump must be performed by a technician trained and certified on the brand and model of the equipment being installed.

2. EQUIPMENT SELECTION & SIZING

- a. AHRI (Air-Conditioning, Heating and Refrigeration Institute) rating of 9.0 Heating Season Performance Factor (HSPF) (minimum).
- b. Single head systems - DHPs must be listed on the BPA's DHP Qualified Products List DHP Qualified Products List.
- c. Multi-head systems - Have a minimum 9.0 HSPF rating and the outdoor unit must be listed on the DHP Qualified Products List and the indoor/outdoor units must be compatible.
- d. The minimum size for a DHP system is 9,000 Btu heating capacity at AHRI testing standards.

3. INDOOR UNIT MUST

- a. Be located in the main living area
- b. Be placed where it will provide optimal air circulation to maximize the area to be heated
- c. Be level and installed high on the wall

4. OUTDOOR UNIT MUST

- a. Use risers to allow for drainage and prevent debris, ice and snow build-up
- b. Be installed on a stable, level surface
- c. Be secured to the pad and risers using bolts and/or adhesive
- d. Be located away from walkways and driveways where drainage may result in a slipping hazard

5. REFRIGERANT TUBING

- a. Create new flares using an appropriate R410A flaring tool and measurement gauge. Do not use manufacturer provided tubing flares and fittings.
- b. Apply refrigerant oil to the end of each flare.
- c. Connect tubing with R410A nuts (supplied with your outdoor unit) and tighten to manufacturer's specifications.

6. REFRIGERANT CHARGE

- a. Verify refrigerant protocols in the manufacturer's installation manual.
- b. Adjust the refrigerant charge only if necessary; most installations do not require adjustment.
- c. The use of a vacuum pump is required during installation. It is also acceptable to use any alternative refrigerant measuring methods that are approved and documented by the manufacturer.
- d. Gauges are not needed to verify refrigerant levels. If adjustments are necessary, use a scale when adding/removing refrigerant.

7. NOISE & VIBRATION ABATEMENT

- a. The outdoor unit should be installed in a location that avoids or minimizes the transmission of objectionable noise to adjacent properties, sleeping areas or other areas where noise control is necessary.
- b. Outdoor units must comply with all state and local noise control ordinances. The participating installer is responsible for making any modifications necessary to reduce noise.
- c. The unit base must not be connected to the foundation.

8. LINE SET & INSULATION PROTECTION

- a. Insulation must cover the length of the entire line set.
- b. Once insulated, protect the outdoor portion of line set with rigid line hide to avoid premature insulation damage and for aesthetic value.
- c. Line set with exposed insulation that connects to the outdoor unit must have a UV protected covering.
- d. Penetrations through the exterior of the home must be sealed with an insulative sealant.
- e. Insulation that has been disturbed by installed line set will be returned to original (or better) condition.

9. CONDENSATE SYSTEM

- a. Condensate drain line must slope downhill to allow for gravity to direct the flow of condensate to drain outside the home. Condensate drain lines must run to an open drain or location outside of the building's foundation. Under no circumstances may condensate drain into a crawl space or onto a walkway.
- b. Condensate drain piping must meet International Mechanic Code (IMC) requirements and should be made of copper, plastic or other corrosion-resistant material.
- c. Condensate pumps are not recommended unless there is no other alternative. If a condensation pump is required, follow the manufacturer's installation requirements.

10. ELECTRICAL

- a. Must be installed on a dedicated electrical circuit.
- b. An outdoor receptacle must be installed if required by code.

11. CUSTOMER EDUCATION

- a. Demonstrate, and emphasize the importance of cleaning the filters. Explain the maintenance requirements.
- b. Give the homeowner the manufacturer's operation manual. Refer to the manual during the DHP operation walk-through/training.
- c. Show the customer how to operate the DHP with the existing electric heating system in the home. Technicians must ensure the owner understands how to adjust any other thermostats so the DHP is the primary heating system.