# **Heat Pump Home Runs**

- Air Source Heat Pump
- One-Story Ranch Home





A **single story** ranch-style home with a simple floor plan is a great candidate for a full displacement heat pump retrofit, no matter if they are heated with hydronic or ducted central systems. See our separate guides for homes with more complicated floorplans.

#### **Existing Duct Work Evaluation**

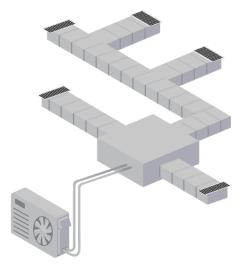
If the answer to any of the questions below is "no" then the distribution system is not in good working order and likely needs modification or replacement to accommodate a ducted heat pump.

- » Is the duct system obviously noisy with the fan on?
- » Is the duct work sealed?
- » Is the duct work free from panned or cavity returns?
- » Does the current duct system provide adequate airflow for heating with a heat pump?



#### **Follow Best Practices!**

- » Measure system airflow to get a baseline
- » Perform a Manual D to determine required duct sizing



## Which heat pump design is right for this house?

Is the ducted distribution in good working order (or can be functionally modified in place)?

Yes

**No**, does not have duct work or in it is in poor condition.

**Recommendation – Ductless:** Several ductless systems to serve each zone of the house.

Load >48kBtu/h



#### **Follow Best Practices!**

 » Always perform a load calculation.
» Look for opportunities to reduce the load with air sealing and insulation.

> Learn More About System Design Recommendations



Recommendation – Ducted: A 1:1 Replacement. Recommendation – Ducted + Ductless:

Ducted system using existing ducts where possible. Additional ductless to main living space to make up load or address hard-to-heat areas.

#### **Ducted, 1:1 Replacement Considerations**

- » Evaluate supply and return duct work.
- » If there is no existing central AC, evaluate the electric panel capacity (see tips below).

## Ducted + Ductless Considerations

- » Evaluate supply and return duct work.
- » If there is no existing central AC, evaluate the electric panel capacity.



- » Evaluate the electric panel capacity.
- » Install multiple single-zone heat pumps for the easiest way to match capacity to load.
- » Consider compact-ducted units to serve more than one room.
- » Avoid over-zoning: using multiple ductless heads for a given outdoor unit requires careful sizing around the min and max capacity of the unit and the load served.

### **Electric Panel Capacity Evaluation**

# Panel upgrades add significant cost to a job. Use the tips below to evaluate the likelihood a panel upgrade is needed.

**Ductless head** 

provides

24kBtu/h.

e.g.

- » If the home already has central AC panel capacity is probably adequate.
- » If the house is served by a 100 amp panel an upgrade is likely required.
- » If there are fewer than 2 empty breaker slots available, discuss the below options with an electrician.

#### **Options by cost:**

- **\$** Support another load with a tandem breaker and use thin double-pole breaker for heat pumps.
- **\$\$** Add a subpanel to combine loads to free up space on the main panel.
- **\$\$\$** Use an automatic circuit sharing device such as
- NeoCharge, Dryer Buddy and others.
- **\$\$\$\$** Upgrade to a larger panel.



NYS Clean Heat

HVAC provides , 48kBtu/h

