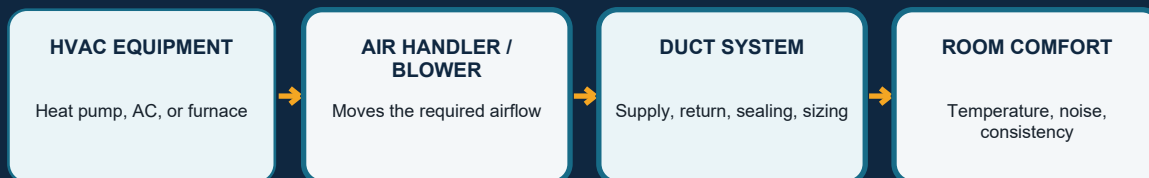


DUCT GUYS, LLC | OREGON HOMEOWNER WHITEPAPER

The Oregon Homeowner's Guide to HVAC Equipment and Existing Ductwork

How heat pumps, central air conditioners, furnaces, blowers, controls, and duct systems must work together for dependable comfort.

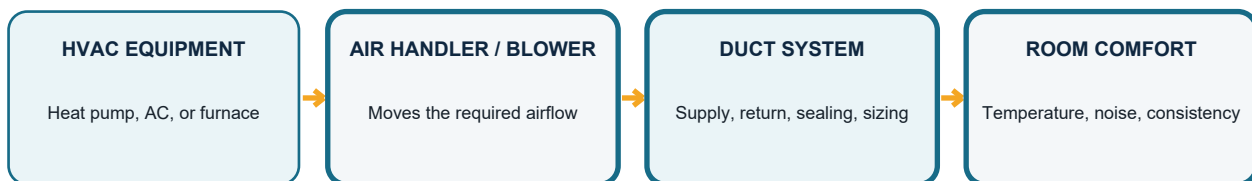


Prepared for Portland-area homeowners
Duct Guys, LLC | CCB #179150

Start with the complete system

New HVAC equipment cannot perform independently from the ductwork, blower, controls, electrical service, drainage, and building conditions supporting it.

The central idea: a heat pump, central air conditioner, or furnace may be an excellent equipment choice and still deliver disappointing results if the existing air-distribution system cannot move the required airflow.



What this guide helps you decide

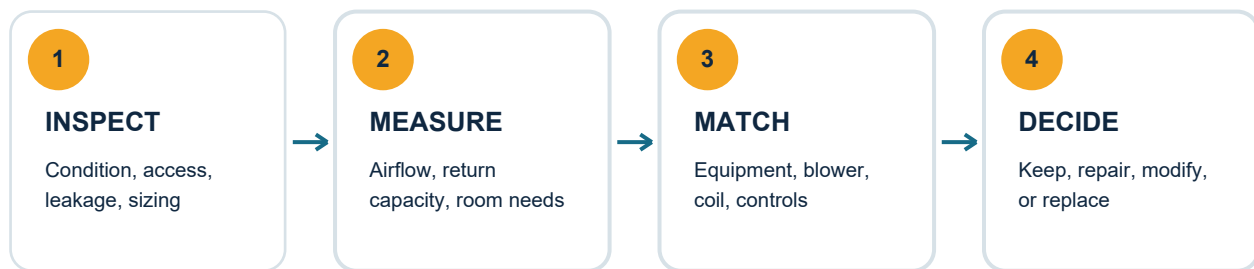
- Whether existing furnace ducts may be suitable for a heat pump, central AC system, or replacement furnace.
- Which equipment and duct-system compatibility questions deserve attention before installation.
- When existing ducts may remain, need localized repair, require modification, or justify partial or complete replacement.
- How to compare installation proposals that appear to recommend different equipment or scopes of work.
- Why room comfort, noise, and airflow concerns should be diagnosed before assuming the equipment is the only problem.

A practical planning guide - not a one-size-fits-all answer

Every home and HVAC system is different. This whitepaper explains the conditions that affect planning; it does not replace an on-site evaluation, equipment selection, or an approved project scope.

The shared evaluation: what every system needs

Heat pumps, AC systems, and furnaces differ in how they heat or cool, but every forced-air system relies on compatible airflow and connected components.



1. Equipment capacity and operating needs

Equipment should be selected for the home and intended system configuration, not merely copied from the nameplate of the old unit. Oversizing can contribute to short cycling, noise, and uneven temperatures. Undersizing or inadequate airflow can keep the home from reaching the thermostat setting.

2. Supply and return airflow

Supply ducts deliver conditioned air; return pathways bring air back to the equipment. Both sides matter. Restricted returns, crushed flex duct, sharp transitions, disconnected branches, closed or poorly located registers, and undersized trunks can limit performance.

3. Indoor equipment and controls

The blower, indoor coil, furnace or air handler, thermostat, zoning controls, filtration, and auxiliary heat must be compatible with the proposed outdoor equipment and airflow requirements.

4. Installation conditions

Electrical capacity, fuel connections, venting, combustion air, condensate drainage, refrigerant piping, equipment access, outdoor-unit location, and service clearances can all change the appropriate scope.

Why the return side is easy to miss

Adding or replacing supply ducts without confirming return-air capacity can leave the blower struggling to move the required air. A complete evaluation considers the full circulation path.



Heat pumps and existing ductwork

A ducted heat pump can often use an existing furnace duct system, but compatibility should be verified rather than assumed.

Question	Why it matters	What to verify
Can the existing ducts remain?	Heat pumps may need different airflow than the equipment they replace.	Supply and return sizing, leakage, branch condition, transitions, insulation, and room balance.
What happens to the furnace?	The home may use an air handler, retain compatible furnace equipment, or use another approved configuration.	Indoor coil and blower compatibility, controls, backup heat, venting, and available space.
Why does supply air feel different?	Heat-pump air may feel less intense than furnace-heated air while still warming the home normally.	Room temperature trend, airflow, thermostat settings, auxiliary heat, and steady operation.
What changes in cold weather?	Defrost and auxiliary-heat operation affect winter performance.	Outdoor drainage, defrost controls, thermostat setup, backup-heat configuration, and electrical capacity.

Common planning paths

- Existing ducts remain: accessible components are sound, airflow is adequate, and the indoor equipment is compatible.
- Targeted modifications: an undersized return, restricted transition, isolated damaged run, or difficult room needs correction.
- Partial or complete duct replacement: deterioration, rodent damage, collapse, contamination, or sizing problems affect multiple areas.

Heat pump versus conventional AC

Both can provide cooling through existing ductwork. A heat pump also provides heating, while conventional AC is paired with separate heating equipment. The practical choice depends on the furnace condition, electrical capacity, controls, comfort goals, intended backup heat, and the total installed configuration.

Do not judge compatibility by duct appearance alone

A duct system can look intact and still have inadequate return capacity, excessive restriction, poor balance, or leakage that limits the proposed equipment.

Central air conditioning and existing ductwork

Adding or replacing central AC requires more than connecting an outdoor unit to an existing furnace.

Question	Why it matters	What to verify
Can AC use the furnace ducts?	Usually possible when the ducts can carry the required cooling airflow.	Supply and return capacity, branch balance, leakage, insulation, and difficult rooms.
Is the furnace blower compatible?	The blower must move air across the indoor cooling coil at the required rate.	Blower capability, speed settings, furnace condition, indoor coil match, and controls.
Does refrigerant piping remain?	Existing line sets are not automatically suitable for every replacement.	Condition, size, routing, equipment requirements, access, and proposed scope.
Why does drainage matter?	Cooling removes moisture and produces condensate.	Drain route, trap and safety provisions where applicable, equipment location, and service access.

Adding AC to a home with a furnace

The furnace cabinet and blower often become part of the cooling airflow path. The indoor coil, controls, electrical circuit, outdoor equipment location, refrigerant piping, and condensate drainage must be planned as one connected installation.

When duct modifications enter the project

- A return pathway is too small or restrictive for cooling airflow.
- One or more rooms receive weak airflow or have missing branches.
- Existing ducts are damaged, disconnected, crushed, or poorly insulated.
- Transitions at the furnace or coil restrict airflow or do not fit the new configuration.
- The existing layout creates excessive noise or uneven distribution.

Bigger is not automatically better

Oversized cooling equipment can cycle quickly and still leave comfort problems unresolved. Equipment selection and duct airflow should be evaluated together.

Furnaces and existing ductwork

A furnace replacement is an opportunity to verify the complete heating and airflow system instead of exchanging one cabinet for another.

Question	Why it matters	What to verify
Can the existing ducts remain?	Many can, if condition, sizing, and return capacity support the new furnace.	Supply trunks, branch runs, returns, transitions, leakage, supports, and insulation.
Should the old capacity be copied?	The previous furnace may have been oversized, undersized, or compensating for another problem.	Home heating needs, past cycling, comfort history, airflow, and difficult rooms.
What happens to existing AC?	The furnace blower and cabinet may be connected to the indoor cooling coil.	Coil fit, blower requirements, controls, drainage, transitions, and service access.
What changes with efficiency?	Different furnace designs can change venting, drainage, and installation space.	Fuel and electrical connections, venting, combustion air, condensate, and approved clearances.

Furnace versus heat pump

A replacement furnace is not the only heating path for every home. A ducted heat pump can provide heating and cooling; a furnace may also be retained or installed in a compatible supplemental configuration. The decision depends on the home, existing systems, electrical capacity, ductwork, controls, comfort priorities, and cold-weather plan.

Airflow symptoms that deserve investigation

- A furnace repeatedly starts and stops instead of completing steady cycles.
- Some rooms overheat while others remain cold.
- Registers whistle, returns are unusually loud, or the blower sounds strained.
- Filters load quickly or appear pulled inward by high restriction.
- Equipment safety or performance concerns cannot be separated from the duct system.

Safety remains equipment-specific

Furnace combustion, heat-exchanger, fuel, venting, and electrical concerns require qualified evaluation. Duct improvements do not substitute for resolving an equipment safety problem.

Keep, repair, modify, or replace the ducts?

The correct answer depends on the extent of the problem, the condition of the remaining system, and whether the layout can support the planned equipment.

Question	Why it matters	What to verify
KEEP	The system is sound and compatible.	Adequate airflow, acceptable leakage, good supports and insulation, workable layout, and sufficient returns.
REPAIR	Damage is localized and the remaining system is serviceable.	Separated connections, isolated holes, loose supports, damaged insulation, or an accessible boot/collar problem.
MODIFY	The general system can remain but specific airflow changes are needed.	Return enlargement, transition correction, added branch, balancing change, or equipment connection work.
PARTIAL REPLACEMENT	A defined portion is deteriorated or unsuitable.	Several damaged runs, one failed zone, an affected crawlspace section, or a restricted trunk segment.
COMPLETE REPLACEMENT	Problems are widespread or the layout cannot support the system.	Broad deterioration, rodent damage, collapsed runs, contamination, severe leakage, poor sizing, or failed distribution design.

Conditions that can change the project

- Rodent activity: damaged material and contaminated insulation may extend beyond one visible opening. Pest entry should be addressed separately.
- Crawlspace moisture: active leaks, standing water, drainage, or contamination can affect safe access and new material. Ductwork does not correct the moisture source.
- Access: tight attics, crawlspaces, finished surfaces, and equipment locations can influence routing and practical scope.
- Boots, registers, and plenums: components may be reused when sound, compatible, accessible, and appropriately sized; they should not be assumed reusable or disposable.
- Uneven temperatures: duct correction can help when airflow is the cause, but insulation, air sealing, solar exposure, controls, equipment capacity, and room use may also matter.

Cleaning is a separate decision

Dust or accessible debris alone does not automatically justify duct replacement. Duct cleaning cannot repair leakage, active moisture, damaged insulation, poor sizing, or HVAC equipment faults.

How to compare HVAC installation proposals

Two proposals can differ because they include different equipment, assumptions, connected work, or verification steps.

Ask each contractor to identify:

Question	Why it matters	What to verify
Equipment configuration	Outdoor unit, furnace or air handler, indoor coil, backup heat, and controls.	Are model relationships and intended operating modes clear?
Sizing basis	How equipment capacity was selected for the home.	Is the recommendation based on more than simply copying the old unit?
Duct scope	What remains, what is repaired, and what is modified or replaced.	Are returns, transitions, sealing, insulation, and room airflow included?
Electrical / fuel / venting	Connected work varies by equipment type and home.	Who is responsible for each required part of the scope?
Drainage and piping	Cooling and heat-pump systems involve condensate and refrigerant piping.	Are routes, reuse assumptions, and access explained?
Testing and handoff	Installation quality includes verification and homeowner guidance.	What operation, airflow, controls, and follow-up information will be reviewed?

Compare scope before comparing price

A lower or higher proposal may not include the same duct modifications, controls, electrical work, drainage, piping, backup heat, access work, or testing. Put the scopes side by side before drawing conclusions.

Useful questions to bring to an evaluation

- Which parts of my current system are compatible with the proposed equipment?
- What evidence shows that my existing ducts can carry the required airflow?
- Are any supply, return, transition, or balancing changes included?
- Which existing components are being reused, and why?
- What connected work is excluded or handled by someone else?
- How will operation and airflow be verified after installation?

Homeowner planning checklist

Use this checklist before approving a heat-pump, central-AC, furnace, or ductwork project.

1	Describe the comfort problem	List difficult rooms, seasonal patterns, noise, weak airflow, cycling, dust, or equipment symptoms.
2	Document the existing system	Record equipment types, thermostat, filter location, known repairs, additions, and past duct changes.
3	Ask what was evaluated	Confirm that both supply and return airflow, accessible ducts, indoor equipment, controls, and connected requirements were considered.
4	Separate required from optional work	Understand what is necessary for compatibility, what corrects an existing defect, and what is an elective improvement.
5	Compare the complete scope	Review equipment, ducts, controls, electrical or fuel work, venting, drainage, piping, access, testing, and exclusions.
6	Plan for operation and maintenance	Know how the thermostat and filters work, what normal operation looks like, and when service is recommended.

The goal is compatibility, not unnecessary replacement

Existing ductwork should not be condemned simply because new equipment is being installed. It should be evaluated honestly and retained, repaired, modified, or replaced according to its condition and the airflow the proposed system requires.



Equipment and airflow belong in the same conversation

Duct Guys works on heat pumps, central air conditioners, furnaces, air handlers, and residential duct systems. That combination allows equipment recommendations to account for the airflow system supporting them.

When an evaluation is useful

- You are adding central AC to a home with a furnace and existing ducts.
- You are considering a heat pump and want to understand whether current ducts can remain.
- You are replacing a furnace while retaining existing cooling equipment.
- Rooms remain uncomfortable even though the HVAC equipment appears to run.
- Different contractors have recommended very different equipment or duct scopes.
- You need to distinguish localized duct repair from partial or complete replacement.

Request an HVAC and duct-system evaluation

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Important: This guide provides general educational information. Equipment selection, safety concerns, system compatibility, code requirements, and project scope must be evaluated for the specific home and installation.