

HVAC Maintenance and Replacement Guide

The guide is a practical tool for establishing clear expectations with your chosen HVAC service provider. Start with a detailed maintenance agreement. It can help prevent costly breakdowns and keep your HVAC system running efficiently year-round. The guide also gives practical advice if you replace the entire system.

What if the system needs more than maintenance?

Here are a few ideas for negotiating with the service tech.

- Ask for a clear explanation of the problem, potential solutions, and associated costs.
- Ensure the technician provides a written repair estimate and explains the risks of work delays.
- Include all this information in your maintenance notes.
- Use the included form as a guide (scroll down).

What to do during the winter:

It difficult or, at best, impossible to run the A/C during winter months. When it's too cold (usually when temps are below 60 degrees), ask the technician to inspect the outdoor unit and check refrigerant levels. Plan for a spring startup test when the weather warms up. Here are three ideas to help cover your risk if repairs are needed.

- ★ **Extended Warranty:** Request that the seller provide an extended warranty on the air conditioning system, covering any necessary repairs or replacements in the spring when the system can be properly tested.
- ★ **Escrow Holdback:** Negotiate for a portion of the home sale proceeds to be held in escrow, specifically to cover any repairs or replacements needed for the air conditioning system after it is tested in the spring.
- ★ **Prepaid Service Contract:** Request the seller pay for a prepaid HVAC service contract with a licensed HVAC company. This contract should cover a spring startup test, routine maintenance, and any minor repairs needed for the air conditioner.

💡 Important Consideration!

Ask the technician or HVAC company performing the work for their NATE number. The North American Technician Excellence certification will help ensure the system is installed correctly and complies with the code.

Maintenance Guide

Use these practical tips, which align with the Field Work Sheet (below), to ensure your technician completes all necessary maintenance tasks.

Your Air Conditioner

Factors Influencing A/C System Lifespan:

1. **Climate and Usage:** In hot and humid climates, A/C systems are often used intensively to maintain indoor comfort. This constant operation can accelerate the aging process of the system components, leading to a shorter lifespan.
2. **Maintenance:** Regular maintenance is crucial for A/C systems, especially in regions with high usage. This includes cleaning or replacing filters, checking refrigerant levels, and ensuring that the system is running efficiently. Proper maintenance can help mitigate some of the wear and tear caused by heavy use.
3. **System Type and Efficiency:** High-efficiency systems may have features that help them cope better with constant use, potentially extending their lifespan. However, they still require regular maintenance to perform optimally.

In hot and humid climates like Mississippi (Climate Zone 3), A/C systems are likely to experience more frequent use, which can lead to a shorter lifespan compared to systems in cooler climates. Be diligent about maintenance to help extend the life of your A/C systems. Additionally, consider energy-efficient models and possibly integrate hybrid systems to help manage energy consumption and improve system longevity.

Cooling System Maintenance (Split A/C System)

★ Indoor Unit

- Inspect and clean the air filter

Tip: Ask to see the filter before and after cleaning or the new filter if replaced.

- Check and clean the condensate drain line

Tip: Request a demonstration of water flow through the cleaned drain line.

- Inspect and clean the evaporator coil

Tip: Request before and after photos of the coil.

- Check blower components and clean them as necessary

Tip: Ask to see the blower wheel before and after cleaning.

- Inspect and tighten electrical connections

Tip: Request a demonstration with a multimeter to verify the proper voltage.

- Lubricate moving parts (if applicable)

Tip: Have the tech point out lubricated parts and explain their importance.

★ Outdoor Unit

- Examine and clean the outdoor condenser unit

Tip: Request before and after photos of the condenser coils.

- Check refrigerant levels and test for leaks

Tip: Ask for a printout of refrigerant pressure readings before and after adjustments.

- Inspect the compressor and associated components

Tip: Have the technician explain what they're looking for during the inspection.

Your Furnace

Generally, heating and cooling systems are designed with a life cycle of about 15 years.

Factors Influencing Gas Furnace Lifespan:

1. **Usage and Maintenance:** Regular maintenance is crucial for extending the life of a furnace. This includes annual inspections, cleaning, and timely repairs. A well-maintained furnace is more likely to reach the upper end of its lifespan range.
2. **Type and Manufacturer:** Different furnace types and manufacturers may offer varying levels of durability and efficiency. High-efficiency models have different maintenance requirements or longevity compared to standard models.
3. **Climate Zone:** The climate in which a furnace operates can significantly influence its lifespan. In colder climates, furnaces may run more frequently and for more extended periods, potentially leading to increased wear and tear. Conversely, in milder climates, furnaces might not be used as intensively, which could extend their lifespan.

While the general lifespan of a gas furnace is 15-20 years, the actual lifespan can be influenced by factors such as maintenance, usage, type, manufacturer, and especially the climate zone. You should consider these factors when assessing the furnace's condition and planning for potential replacement. Regular maintenance and understanding the specific demands of your climate can help maximize the furnace's lifespan.

Heating System Maintenance

★ For Furnace (Split System)

- Inspect the heat exchanger for cracks or corrosion

Tip: Request a borescope inspection and ask to see the images or video feed.

- Check gas line connections and pressure (for gas systems)

Tip: Ask to see the gas pressure readings and an explanation of their significance.

- Inspect ignition system and clean burners (for gas systems)

Tip: Request to see the burner flames before and after cleaning.

- Test safety controls

Tip: Ask the technician to explain each safety control test.

★ For Heat Pump (Split System)

- Inspect defrost controls and operation

Tip: Ask for an explanation of how the defrost cycle works and what they check.

- Check auxiliary heat strips (if applicable)

Tip: Request a demonstration of the auxiliary heat activation.

★ For Packaged Terminal Air Conditioner (PTAC) or Window Unit

- Clean or replace air filter

Tip: Ask to see the filter before and after cleaning or the new replacement filter.

- Clean evaporator and condenser coils

Tip: Request before and after photos of both coils.

- Check and clean the condensate drain system - traps, lines, and terminations

Tip: Ask for a demonstration that the drain is flowing properly after cleaning.

- Inspect and clean fan blades

Tip: Request to see the fan blades before and after cleaning.

- Check seals around the unit

Tip: Ask the technician to highlight the seals and explain their importance.

General Maintenance (Applicable to All Systems)

- Test thermostat for accuracy and proper operation

Tip: Have the technician show you how they calibrate the thermostat.

- Inspect ductwork for leaks or damage (for central systems)

Tip: Request a smoke pen demonstration for any visible ductwork leaks.

- Test system startup and shutdown cycles

Tip: Ask the technician to explain what they observe during these cycles.

Remember, a professional technician should be willing to explain their work and provide evidence of maintenance performed, regardless of the system type. Don't hesitate to ask questions or request clarification on any part of the process.

HVAC Maintenance - Field Sheet

Instructions for Technicians:

This checklist outlines standard maintenance tasks for residential HVAC systems. Please mark each box as you complete the corresponding task.

The homeowner has asked for visual evidence of your work. Be prepared to explain each step of your process, show before/after cleaning results when feasible, and demonstrate the operation of components you've serviced.

Remember, clear communication builds trust and showcases your expertise. If a task does not apply to this system, mark it N/A and briefly explain why to the homeowner.

Cooling System (Split A/C)

Indoor Unit:

- Inspect and clean air filter(s)
- Check and clean the condensate drain line(s)
- Inspect and clean evaporator coil(s)
- Check and clean blower components
- Inspect and tighten electrical connections
- Lubricate moving parts (if applicable)
- Inspect overflow pan(s) and drain(s) (if applicable)

Outdoor Unit:

- Examine and clean the condenser unit(s)
- Check refrigerant levels and test for leaks
- Inspect compressor and components

Heating System

Furnace (Split System):

- Inspect heat exchanger(s) - Explain the inspection method in detail.
- Check gas line connections and pressure(s)
- Inspect ignition system and clean burners
- Test safety controls

Heat Pump (Split System):

- Inspect defrost controls and operation
- Check auxiliary heat strips (if applicable)

PTAC or Window Unit:

- Clean or replace air filter(s)
- Clean evaporator and condenser coils
- Check and clean the condensate drain system
- Inspect and clean fan blades

Check seals around the unit(s)

General Maintenance (All Systems)

Test thermostat for accuracy and operation

Inspect ductwork for leaks or damage

Test system startup and shutdown cycles

Technician Name: _____ Date: _____

Customer Name: _____ Signature: _____

Notes/Recommendations:

Service Information

Company Name: _____

Phone Number: _____

Date of Service: _____ Time of Service: _____

Total Cost: \$ _____

Beyond Maintenance

Overview of Suggestions for Replacing The Entire HVAC System

Replacing your entire HVAC system is a significant investment. To ensure the longevity and efficiency of your new system, it's essential to address related components that may need updating or replacement.

1. Replacing the Heating System (Gas Furnace)

When replacing a gas furnace, it's not just the furnace that requires attention. Several connected components also play critical roles in ensuring the system operates safely and efficiently.

- **Vent Pipe (Flue Pipe):** Vent pipes can corrode or develop leaks over time. It's wise to replace the vent pipe to prevent dangerous gases, such as carbon monoxide, from entering the home. Upgrading to a properly sized vent pipe that meets modern code requirements is essential for safety. Ensure the pipe is installed according to the manufacturer's suggested instructions.
- **Termination Cap:** The termination cap is the component at the end of the vent pipe that releases gases outside. If the cap is old or worn, it may not correctly vent exhaust, leading to back-drafting, premature rusting/deterioration, or restricted airflow. Replacing it ensures proper ventilation and prevents moisture or debris from entering the pipe.
- **Roof or Sidewall Flashing:** Flashing prevents water from leaking into your home at points where the vent pipe penetrates the roof or sidewalls. If your old flashing is deteriorated or improperly installed, replacing it is critical to preventing roof leaks and water damage.
- **Gas Line and Shutoff Valve:** If the gas line feeding the furnace shows signs of wear or corrosion or if the shutoff valve is old or not up to code, replacing these components can prevent leaks and ensure safe operation.
- **Thermostat:** Even if it seems functional, replacing the thermostat with a modern, programmable model can improve energy efficiency and help regulate temperature throughout your home.

2. Replacing the Cooling System (Air Conditioning)

When replacing an air conditioning system, several components should also be updated to avoid future problems and maximize the efficiency of the new unit:

- **Overflow Pan:** If your system is located in an attic or a space where a condensate pan is used to catch overflow, it's best to replace the overflow pan. Older pans often develop rust or cracks, which can lead to water damage. A new pan, possibly with a secondary drain line or a float switch, protects against water leaks.
- **Condensate Drain Line:** Over time, the condensate drain line can become clogged or brittle. Replacing this line during A/C installation ensures proper moisture drainage and reduces the risk of water damage or mold growth.

- **Refrigerant Lines:** Even though some technicians may offer to reuse old refrigerant lines, it's usually better to replace them, especially if switching to a new refrigerant type (e.g., from R-22 to R-410A). Old lines may be contaminated or undersized for the new system, potentially impacting performance.
- **Outdoor Pad or Support Base:** If the outdoor condenser unit sits on an old or deteriorated pad, consider replacing it to ensure proper leveling.
- **Electrical Disconnect and Wiring:** If the electrical disconnect near the A/C unit shows signs of wear or corrosion, it should be replaced.

3. General Recommendations for Both Systems

- **Ductwork Inspection and Sealing:** Inspect the ductwork when replacing either the heating or cooling system. Leaky or poorly insulated ducts can cause air loss, reducing the system's efficiency and comfort. Sealing or replacing damaged ductwork ensures proper airflow, which helps both your furnace and A/C perform optimally.
- **Humidifier or Dehumidifier:** If you have a whole-home humidifier or dehumidifier installed, it may be worth evaluating its condition and compatibility with the new HVAC system. An older unit might not be as efficient or could interfere with the new system's operation.
- **Air Quality Systems:** During the HVAC replacement process, consider upgrading or installing additional air quality systems to reduce airborne contaminants.

4. Additional Considerations

- **Permits and Inspections:** Ensure that all necessary permits are obtained for your system replacement and that your contractor arranges for inspections. This ensures the installation complies with local building codes and safety standards.
- **Warranties and Extended Coverage:** When replacing your HVAC system, ask about warranties and extended coverage options. A comprehensive warranty can protect you from unexpected repair costs and give you peace of mind for years.

Addressing these additional components during the replacement of your heating and cooling systems can ensure that your new equipment operates at peak efficiency and reliability while also minimizing the risk of future issues.