HVAC Maintenance Checklist

Air Filter Inspection and Replacement

- [ ] Check for dirt, dust, or clogging.
- [ ] Ensure the filter matches the correct size for the system.
- [ ] Verify if it is the correct filter type (e.g., fiberglass, pleated, HEPA).
- [ ] Replace the filter if it appears heavily clogged.
- [ ] Clean reusable filters
- [ ] If the filter is dirty or damaged, replace it with a new one.
- [ ] Ensure proper airflow after filter replacement, ensuring system efficiency.
- [ ] Note the replacement frequency (30 to 90 days)

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Inspect the Thermostat and Calibration

- [ ] Ensure the thermostat is set to the correct temperature.
- [ ] Verify that the display is clear and functioning properly.
- [ ] Check if the HVAC system responds correctly to temperature adjustments.
- [ ] Verify the thermostat is accurately reading the room temperature by comparing it to a separate thermometer.
- [ ] Ensure the thermostat is placed in a location that provides an accurate temperature reading (away from direct sunlight, drafts, or heat sources).
- [ ] Change batteries if needed to avoid power interruptions.
- [ ] Verify that the thermostat is properly connected to the HVAC system's control panel.

Clean the Coils and Condenser Unit

- [ ] Disconnect power to the HVAC system to ensure safety during cleaning.
- [ ] Check both the evaporator and condenser coils for dirt, leaves, or other debris.

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- [ ] Use a soft brush or a coil cleaner to gently remove dirt from the evaporator coils.
- [ ] Use a coil cleaner or a hose to wash away any debris or dirt from the condenser coils.
- [ ] Straighten any bent fins on the coils using a fin comb to ensure optimal airflow.
- [ ] Remove debris, leaves, and dirt from the area around the outdoor condenser unit to maintain airflow.
- [ ] Check the coils for any signs of refrigerant leaks, and schedule repairs if necessary.

Check Refrigerant Levels and Pressure

- [ ] Ensure the system is powered off before checking refrigerant levels.
- [ ] Use a manifold gauge to measure the refrigerant pressure against the manufacturer's recommended levels.
- [ ] Compare the current refrigerant charge to the system specifications to ensure it is within the correct range.
- [ ] Look for any signs of refrigerant leaks around the refrigerant lines and connections. If a leak is detected, schedule repairs.
- [ ] After checking refrigerant levels, turn on the system and observe if it cools efficiently.

- [ ] If refrigerant levels are low, add the appropriate refrigerant type to restore the system to proper levels.
- [ ] After adjustments, ensure the system is operating at the right temperature and pressure.

Inspect Blower Motor and Fan Assembly

- [ ] Ensure the system is powered off before performing any inspection or maintenance.
- [ ] Check the motor for any signs of wear, damage, or unusual noise during operation.
- [ ] If applicable, ensure the blower motor is properly lubricated to reduce friction and prevent overheating.
- [ ] Inspect fan blades for any dirt buildup, damage, or misalignment.
- [ ] Remove any dirt, dust, or debris from the fan blades to maintain smooth operation.
- [ ] Inspect the fan belt for wear or damage. If it's loose or cracked, replace it.
- [ ] Turn on the system and observe the fan's operation, ensuring it is spinning freely and efficiently.
- [ ] Measure the airflow coming from the vents to ensure the blower is operating at optimal efficiency.

Lubricate Moving Parts and Checking Belts

- [ ] Disconnect the power supply to the HVAC system before beginning any maintenance.
- [ ] Examine all moving parts such as the fan, blower motor, and pulleys for wear or damage.
- [ ] Apply appropriate lubricant to the moving parts (e.g., fan bearings, blower motor bearings) as per manufacturer's recommendations.
- [ ] Inspect the belts for cracks, fraying, or excessive wear.
- [ ] Check for any loose belts and tighten them to the manufacturer's specifications.
- [ ] If any belts show signs of significant wear or damage, replace them with new ones.
- [ ] After lubrication and adjustments, run the system briefly to ensure the moving parts operate smoothly without noise or hesitation.

Inspect Ductwork for Leaks or Damage

- [ ] Ensure the system is powered off before inspecting the ductwork.
- [ ] Check for visible signs of damage such as dents, cracks, or disconnected joints.

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- [ ] Feel along duct seams and joints for air leaks or use a smoke pen to identify any areas where air may be escaping.
- [ ] Check insulation around ducts for any signs of wear, mold, or moisture buildup, which can impact system performance.
- [ ] Ensure all duct connections are tight and properly sealed.
- [ ] Inspect ducts for any obstructions such as dirt, dust, or debris that could reduce airflow.
- [ ] Use duct tape, mastic, or other appropriate sealants to seal any identified leaks and ensure that ducts are properly connected.
- [ ] Verify that the system is delivering air efficiently throughout the home or building.

Clean Condensate Drain Lines and Pans

- [ ] Disconnect power to the HVAC system to ensure safety during maintenance.
- [ ] Identify the drain line and pan that collect moisture from the cooling process.
- [ ] Check the drain line and pan for any signs of clogs, algae, or mold growth that could cause water backup.
- [ ] Use a wet/dry vacuum or a hose to flush out any debris or buildup in the condensate drain line.

- [ ] Remove any dirt, mold, or algae from the condensate pan using soap and water or a mild cleaning solution.
- [ ] Inspect the pan and line for any cracks or leaks that may cause water damage or poor drainage.
- [ ] Ensure the condensate drain line is sloped properly to allow water to flow freely and prevent future blockages.
- [ ] For systems with a pump, ensure it's operating correctly and clearing water as needed. (if applicable)

Examine Electrical Connections and Voltage

- [ ] Ensure the HVAC system is completely powered off before inspecting electrical components.
- [ ] Examine all visible electrical connections for signs of corrosion, loose wires, or damage.
- [ ] Use a multimeter to measure voltage at key points in the system, such as the compressor, blower motor, and control board.
- [ ] Ensure that all components are properly grounded to prevent electrical hazards.
- [ ] Check the circuit breakers or fuses for signs of tripping or wear, and reset or replace as necessary.
- [ ] Look for any signs of frayed or exposed wiring, which could lead to electrical shorts.

- [ ] Inspect the capacitor and contactors for signs of damage, such as burn marks or bulging, and replace if needed.
- [ ] Power the system back on and check that it operates smoothly without electrical issues.

Test Safety Controls and Carbon Monoxide Detectors

- [ ] Ensure the HVAC system is powered off before conducting any safety tests.
- [ ] Ensure the high-limit switch is functioning correctly by testing its response to overheating or abnormal system conditions.
- [ ] Verify the pressure switch is properly calibrated and responds to changes in airflow or pressure.
- [ ] Inspect the flame sensor to ensure it is working properly and detecting the presence of a flame during operation.
- [ ] Ensure carbon monoxide detectors are installed and operational. Test by pressing the test button or using a CO tester to verify functionality.
- [ ] Check the gas valve for proper operation, ensuring it opens and closes correctly when called for.
- [ ] Ensure the safety shutoff valve works properly and can be triggered in the event of a gas leak or emergency.
- [ ] Review the system's control board for any error codes related to safety features or sensors that may need attention.

Checking Natural Gas Connections and Flame Color

- [ ] Ensure the HVAC system is powered off before working with gas connections.
- [ ] Check all gas connections and lines for signs of leaks. Use a gas leak detector or soapy water to identify any bubbles around joints.
- [ ] If any gas connections are found to be loose, tighten them securely to prevent leaks.
- [ ] Observe the burner flames during system operation. A healthy flame should be blue with a sharp, distinct shape.
- [ ] Yellow or orange flames may indicate incomplete combustion or burner issues and require attention.
- [ ] Ensure the burner assembly is clean and free from debris that could interfere with proper combustion.
- [ ] Use a manometer to measure the gas pressure at the burner to ensure it is within the manufacturer's recommended range.
- [ ] Ensure the gas valve is opening and closing properly and responding to control signals.

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