

HVAC Maintenance (Homeowner) — Workbook

This workbook turns the course into a running maintenance system for your own home. You will inventory your equipment, build seasonal checklists, and log every task so you can prove maintenance for warranty claims and budget for repairs. Fill in the worksheets as you go and keep this document with your home records.

Know Your System and Work Safely

Document exactly what equipment you have and the safety steps required before any task.

Worksheet: Equipment Inventory Sheet

Walk to each piece of HVAC equipment and copy the details from the data plate. You will reuse this on every parts order and warranty call.

Heating system type (forced-air furnace / boiler / heat pump / mini-split)

Cooling system type (central AC / heat pump / mini-split / none)

Furnace or air handler brand and model number

Furnace or air handler serial number

Outdoor unit brand, model, and serial number

Fuel source (natural gas / propane / electric / oil)

Filter size printed on the frame (e.g. 16x25x1)

Installation year and warranty expiration date

Location of furnace disconnect switch and breaker number

Location of outdoor disconnect box

Checklist: Pre-Task Safety Checklist

- Set the thermostat to OFF before opening any panel
- Switch off the unit disconnect and the matching breaker at the main panel
- Pull the outdoor disconnect block fully out for any condenser work

- Verify power is off with a non-contact voltage tester before touching wiring
- Wait at least 5 minutes for capacitors to discharge in an outdoor unit
- Confirm a working CO detector is installed and tested
- Confirm no gas smell is present before any work near combustion equipment

Exercise: Draw Your DIY vs Pro Line

List your home HVAC tasks in two columns to internalize where your responsibility ends.

- List five maintenance tasks you are confident handling yourself this year

- List three tasks you will always hand to a licensed pro and why

- Identify any gray-zone task you are unsure about and your decision on it

- Record the name and number of one local HVAC company to call in an emergency

Airflow: Filters, Coils, and Condensate

Build the airflow maintenance routine that prevents the most common breakdowns.

Worksheet: Filter Selection Worksheet

Decide on the correct filter and replacement interval for your system, then record where you buy them.

Filter nominal size (e.g. 20x25x1)

Chosen MERV rating (8 / 11 / 13)

Reason for this MERV (allergies, pets, smoke, basic)

Filter type (1-inch panel / 4-inch media / washable)

Replacement interval in days

Brand and part number

Where purchased and approximate cost per filter

Number of spare filters kept on hand

Checklist: Coil and Condensate Cleaning Checklist

- Cut power at the outdoor disconnect and breaker before coil work
- Clear leaves, grass, and debris within 2 feet of the outdoor unit
- Apply foaming coil cleaner from inside out and rinse at low water pressure
- Straighten bent fins gently with a plastic fin comb only
- Pour a cup of distilled white vinegar into the condensate drain access tee
- Confirm water drains freely by pouring water into the pan
- Test that the condensate float safety switch clicks when lifted

Exercise: Airflow Problem Diagnosis

Practice tracing weak airflow or no-cool symptoms back to their likely airflow cause before calling anyone.

- When did you last change the filter, and does it block light when held up?

• Is the outdoor unit clear of debris with at least 2 feet of clearance on all sides?

• Are any supply registers or the return grille blocked by furniture or rugs?

• Is there ice on the indoor coil or refrigerant lines that would mean stop and call a pro?

Thermostats and Hydronic Heating

Capture the wiring details and hydronic readings you need to work confidently.

Worksheet: Thermostat Wiring Map

Before removing your old thermostat, photograph it, then record which wire color lands on each lettered terminal.

R terminal wire color

C (common) terminal wire color, or note 'none present'

W (heat) terminal wire color

Y (cooling) terminal wire color

G (fan) terminal wire color

Any other terminals used (Rc, Rh, W2, Y2, O/B)

New thermostat make and model

Heat call tested? Cool call tested? Fan call tested?

Worksheet: Radiator and Boiler Pressure Log

Record boiler pressure before and after bleeding, and note which radiators needed air removed.

Boiler pressure cold, before bleeding (psi)

Radiators bled and order (lowest and nearest boiler first)

Boiler pressure cold, after bleeding (psi)

Did you top up to the normal cold range of about 12 to 15 psi?

Any radiator still cold at the top after bleeding

Boiler pressure when hot (psi)

Checklist: Heat Pump and Mini-Split Care Checklist

- Rinse mini-split head filters every 2 to 4 weeks in heavy-use season
- Keep the outdoor unit clear of snow and brush off accumulation in winter
- Confirm the outdoor unit sits on a raised pad so defrost water drains away
- Never chip ice off the coil; let the defrost cycle or warm water melt it
- Note any musty smell from indoor heads that signals mold needing deeper cleaning

Ducts, Seasonal Routines, and Calling a Pro

Lock in duct sealing, seasonal discipline, and a clear escalation rule.

Checklist: Duct Sealing Checklist

- Run the system fan and feel accessible duct seams for escaping air
- Mark every leak found with tape or chalk
- Seal joints with brush-on mastic or UL 181 listed foil tape, not cloth duct tape
- Seal the supply plenum, return plenum, branch takeoffs, and register boots
- Never seal a combustion air intake or fresh-air ventilation duct
- Insulate sealed ducts in unconditioned spaces to R-6 or higher

Worksheet: Seasonal Startup and Shutdown Planner

Set the dates and owner for each seasonal routine so nothing slips until peak demand.

Spring cooling startup date

Spring tasks completed (filter, condenser coil, condensate drain, cooling test)

Fall heating startup date

Fall tasks completed (filter, bleed radiators or furnace test, thermostat batteries)

Professional tune-up scheduled date and company

Smoke and CO detectors tested on date

Exercise: Call-a-Pro Decision Drill

Rehearse the stop-and-call rule using your own home so you react correctly under stress.

- Write the exact steps you will take if you smell gas in the house
 - Write what you will do if the CO alarm sounds
 - List the three symptoms from this course that always mean call a pro, not DIY
 - Record your decision rule for ice on refrigerant lines and a constantly running AC
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Your Action Plan

1. Complete the Equipment Inventory Sheet and photograph every data plate this week
2. Buy three to four spare filters in your correct size and MERV rating
3. Replace the current filter and write the install date on its edge
4. Clean the outdoor condenser coil and flush the condensate drain with vinegar
5. Map your thermostat wiring by terminal letter and confirm whether a C wire exists
6. Bleed radiators or run a full furnace test cycle and log boiler pressure if hydronic
7. Seal accessible duct joints with mastic or UL 181 foil tape and insulate them
8. Set calendar reminders for spring and fall startups and annual thermostat batteries
9. Book a professional tune-up in the next shoulder season and ask about a maintenance plan
10. Post the Call-a-Pro decision rule near your equipment for everyone in the household

