



An Extended Guide · No. 1309

Keeping the Furnace and AC On

Comfort and heat
through any outage

Tech Made Simple — Service Made Personal

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! Read this first — carbon monoxide is still the real danger

A standby generator runs on an engine, and engine exhaust contains carbon monoxide — an invisible, odorless gas that can kill. Your installer sets the unit outdoors and spaces it away from windows, doors, and vents to meet the maker's instructions and local code, which is a big part of what keeps you safe. Your job is to keep it that way: never let anyone box it in, build a structure around it, or let snow, leaves, or drifts pile up against it, and never move it closer to the house. Put battery-backup carbon-monoxide alarms on every floor and outside the bedrooms, and test them — the safety agencies urge this for every home. If an alarm sounds, or anyone feels dizzy, sick, or sleepy, get everyone into fresh air first and ask questions later. Heat and cooling make this rule especially easy to forget in a cold snap or a heat wave — but the unit that runs your furnace and AC only stays safe out in the open air where the pros placed it, never tucked into a garage or crowded against the house.

Let's keep the house comfortable, whatever the weather

Heat in the winter and cooling in the summer are what make a house livable — and both run on electricity, even when the heat itself comes from burning gas. This guide is about keeping that comfort on when the power goes out.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. I've spent 30+ years helping folks get comfortable with the equipment in their homes, patiently and in plain language. When people worry a generator won't run their furnace, the news is usually better than they fear — and when they wonder about the air conditioning, there's an honest answer for that too.

We'll keep this on heating and cooling: what your furnace and AC actually need, why central air is the tricky one, and the honest story on heat pumps and electric heat. The size of the unit itself is a sizing question, and I'll point you to our sizing guide for that.

★ There's nothing to sell you here

I don't sell generators or furnaces, and I earn no commission, so this is just honest advice. If you'd like a second opinion before you talk to an installer, call or text me at (330) 200-8042 — free.

The whole guide, on one page

If you remember only these things, you already understand how a standby keeps your heat and cooling on.

- ❑ A gas or oil furnace still needs electricity for its blower and controls — no power, no heat delivered, even with fuel to burn.
- ❑ A boiler needs power for its circulator pump; the blower and the pump are motor loads with a starting surge.
- ❑ Central air is the big one — its compressor has a large starting surge that can strain a smaller unit.
- ❑ A soft-start device and/or load management can let a mid-sized standby run the AC — our load-management guide covers the how-to.
- ❑ Heat pumps and electric heat are much heavier loads, because they make the heat itself with electricity — plan for that honestly.
- ❑ Whole-house comfort or just the essentials is a sizing choice — our sizing guide and a load calculation settle it.

✓ The one-sentence version

A standby keeps a gas furnace's blower running easily; the air conditioning takes a bit more planning; and electric heat is its own, heavier conversation.

A gas furnace still needs electricity

Here's the surprise that trips up a lot of folks — and, once you see it, the whole thing makes sense.

A gas or oil furnace makes its heat by burning fuel, not by using electricity. But electricity still has a job: it runs the blower fan that pushes the warm air through your ducts, plus the igniter and the control board that tie it all together. Take the power away, and the burner may light but the warm air never moves — so the house stays cold.

That's actually good news. The electrical part of a gas furnace is a modest job compared to something like central air or a well pump. It's rarely the biggest thing on a must-run list — which means keeping the heat on is usually one of the easier wins with a standby.

✓ Not sure what kind of heat you have?

If you're unsure whether your system is a gas or oil furnace, a boiler, a heat pump, or electric heat, that's a great first question to sort out — it changes the whole plan. I'm glad to help you figure it out.

The blower and the circulator are motor loads

There's one detail worth understanding, because it shapes how your system is sized.

The furnace's blower fan is a motor, and like any motor it needs a bigger jolt of power to start spinning than it needs to keep running — a brief starting surge. Your generator has to be able to deliver that surge the instant the furnace calls for heat, or the blower may struggle to start.

If you heat with a boiler instead, the picture is a close cousin: the burner makes the heat, and one or more circulator pumps push the hot water through your radiators or baseboard. Each pump is a motor with its own small surge, and a multi-zone system may have several. It's still a modest total compared to the heat the fuel provides.

✓ One surge to plan for, not many added up

You don't stack every motor's surge on top of each other — your installer plans for the single largest starting surge on your list, which is more often the AC or a well pump than the furnace. Our sizing guide explains why.

Central air and the compressor surge

If the furnace is the easy part, central air conditioning is the one that takes real thought.

At the heart of your central AC is a compressor — a big, hard-starting motor that demands a large jolt of power the moment it kicks on. That starting surge is one of the biggest single demands in the whole house, and it's the reason a standby that easily runs your furnace might still strain to start the air conditioning.

The good news is there are two proven ways to help. A soft-start device smooths out that compressor surge so it starts gently instead of all at once. And load management can let the AC take its turn without colliding with other big loads. Together, they often let a mid-sized standby run a central AC it otherwise couldn't.

★ This is worth getting right, not guessing at

Whether your AC can run on a given standby depends on its surge, the unit's size, and whether you add a soft-start — a proper load calculation, not a hunch. Our load-management guide covers the how-to; call me at (330) 200-8042 and we'll sort out what your home needs.

Heat pumps and electric heat — a heavier load

Everything so far assumes gas or oil heat. If your home heats with electricity, I want to be honest with you about it.

A heat pump, an electric furnace, or electric baseboard heat doesn't just run a fan — it uses electricity to make the heat itself. That takes far more power than moving warm air around, which makes electric heat one of the heavier loads a standby can be asked to carry, especially for a whole house at once.

This isn't a reason to panic — plenty of homes with heat pumps run beautifully on a properly sized standby. It's a reason to plan carefully rather than assume. Electric heat deserves a real load calculation and an honest conversation about whole-house versus essential comfort, not a hopeful guess.

! Don't assume electric heat behaves like gas heat

If your home heats with electricity, treat it as its own sizing conversation. It often points toward a larger unit or a smart plan for which comfort you back up — worth getting right before you buy anything.

Whole-house comfort, or just the essentials?

You don't have to back up everything. One of the first real decisions is how much comfort you want the generator to cover.

A larger unit can run the whole house — furnace, central air, and all. A smaller unit, wired through a transfer switch, can back up essential comfort: the furnace blower for heat, maybe one room's cooling, and the rest of your must-run list. In between, load management lets a mid-sized unit stretch to cover more by taking turns with the biggest loads.

Which path fits comes down to your climate, your health, your budget, and the fuel supply your home can support. It's a proper load calculation by a licensed installer — who wires it all through the transfer switch to the electrical code for optional standby systems (NEC Article 702) — not a guess from a chart. Our sizing guide walks the decision.

★ Start with a comfort must-run list

Jot down what comfort you'd truly want in a long outage — heat everywhere, or one warm room; whole-house cooling, or one cool bedroom. That little list drives the whole conversation. Text it to me at (330) 200-8042.

What each part actually needs

A quick reference for the pieces that make up your heating and cooling load.

Part	What it needs
Furnace blower fan	A motor with its own starting surge
Boiler circulator pump(s)	Same idea — a motor, a surge each
Central AC compressor	A large starting surge — the big one
Igniter and control board	A small, steady draw
Thermostat and zone valves	A very small, steady draw

None of the small, steady parts asks for much. It's the blower's, the pump's, and especially the compressor's starting surge that decides how much headroom your generator needs.

When comfort is more than comfort

For most of us, a cold house or a hot one is just unpleasant. For some, steady heat and cooling matter a bit more — and that's worth a gentle word.

As we get older, or when someone's health makes big temperature swings harder to weather, a long winter outage or a summer heat wave can go from uncomfortable to genuinely worth taking seriously. A standby that keeps the furnace or the AC running quietly removes that worry from the picture.

I'm not a doctor, and nothing here is medical advice — if steady temperature is important for someone's health, that's a good thing to raise with their doctor as you plan. What I can do is make sure the power side of your comfort is dependable.

! In a long outage, check on those who feel it most

During an extended cold snap or heat wave, look in on older family members and neighbors, keep one room comfortable, and don't hesitate to seek help if someone seems unwell. Comfort backup is one layer of staying safe, not a replacement for good judgment or a call to 911 when it's needed.

Two kinds of homes, two sets of needs

Backing up heat and cooling looks a little different depending on where you live and what warms your home — but a comfortable house through the outage is the goal either way.

If you live in town or the suburbs

In town or the suburbs, a natural-gas furnace and central air are the common pair, and outages tend to be shorter. The furnace's electrical need is modest, so the real sizing question is usually whether — and how — you want the air conditioning backed up too.

- A natural-gas furnace keeps making heat from the gas line — it just needs its blower and controls carried by the generator.
- Central air is the load worth planning for; a soft-start or load management often makes it work on a mid-sized unit.
- Shorter, more common outages make a modestly sized standby a comfortable fit for many in-town homes.
- Smaller lots mean placement, setbacks, and noise deserve a look — our placement and noise guides cover that.

If you are out in the country on a well

Out in the country, propane or oil furnaces and boilers are common, outages run longer, and the well pump usually shares the must-run list with your heat — so the comfort plan and the fuel plan both matter more.

- A propane or oil furnace or boiler still needs its blower or circulator backed up — and its fuel tended separately from the generator's.
- The well pump is often the biggest single surge on the list — our well-pump guide covers it, and it shapes the sizing.
- Longer outages reward a larger unit or a smart load-management plan so heat, water, and some cooling can share it.
- Winter readiness matters here — our cold-weather guide covers keeping the whole system running when it's needed most.

★ Not sure which camp you're in?

Tell me your heat source, whether you have central air, and whether you're on a well, and I'll help you picture a right-sized comfort plan. Call (330) 200-8042.

Soft-start devices — taming the AC's surge

This little addition is often the difference between a standby that can run your central air and one that can't.

A soft-start device is fitted to your air conditioner's compressor and eases it up to speed instead of letting it slam on all at once. That gentler start dramatically shrinks the big surge we talked about — which can bring a central AC within reach of a mid-sized standby that otherwise couldn't start it.

It's not magic, and it's not right for every home, but it's a well-proven tool. Whether it makes sense for you depends on your AC and the unit you're sizing — exactly the kind of thing to work out with your installer, or with me, before you decide on generator size.

✓ Where the details live

Our load-management guide covers soft-starts and power-management modules in full, so we won't repeat all of it here. The short version: they can let a smaller unit do more, and the AC is where they shine.

Load management — letting a mid-sized unit do more

There's a second clever way to fit more comfort onto a reasonably sized generator, without buying the biggest unit on the lot.

Load management is a smart module that watches the generator's capacity and keeps the big, occasional loads from all demanding power at once. It might hold the water heater for a moment while the AC starts, then let it back on — juggling the heavy hitters so nothing overwhelms the unit, all automatically and faster than you'd notice.

That juggling is what lets a mid-sized standby cover a home that looks, on paper, like it needs a bigger one. Paired with a soft-start on the AC, it's often the sweet spot between comfort and cost.

✓ The how-to has its own guide

Sizing the base unit is this series' sizing guide; the load-management gear itself — how it's chosen and set up — lives in our load-management guide. Your installer's load calculation ties the two together.

Thermostats and zones

A couple of smaller details round out the picture, neither of them a big deal.

Your thermostat — whether an old dial or a modern smart model — draws a tiny, steady amount of power that's not worth a second thought in sizing. If it's battery-powered, it may keep working on its own regardless.

A multi-zone system, where different parts of the house are controlled separately, may have a few extra zone valves or dampers, each sipping a little power to open and close. Individually tiny, but worth mentioning to your HVAC technician so nothing is overlooked when the circuits are planned.

✓ Your HVAC technician knows your system best

A general guide can only say so much about your specific furnace, boiler, or AC. A quick question during your next service visit fills in the blanks better than any chart.

Testing your comfort setup before the season

The furnace and the AC both deserve a real test on a mild day, not their first workout during the season's first extreme.

- ❑ On a mild day, run the furnace through a full heating cycle on generator power and feel for warm air at the vents.
- ❑ If you back up cooling, start the AC on the generator and confirm the compressor starts smoothly and cold air follows.
- ❑ Listen for the blower and any pumps starting cleanly, without straining or stalling.
- ❑ If you have a soft-start or load management, watch that the big loads take their turns without tripping the unit.
- ❑ Do it before winter and again before summer, so each season starts with no surprises.

★ Let's test it together before you need it

A calm test run, with me there or on the phone, beats discovering a problem on the first frigid night or the first scorcher. Call or text me at (330) 200-8042 to set it up.

What I do, and what I leave to the pros

Worth saying plainly, because it's the honest shape of how I can help with your comfort.

- **What I help with:** figuring out what your heat and cooling actually need, building your comfort must-run list, making sense of quotes, and lining up the licensed pros to do the work.
- **What the pros do:** a licensed electrician wires the transfer switch and the generator; your HVAC technician fits a soft-start and knows your furnace, boiler, and AC inside out.
- **What I never do:** the electrical work, the gas work, or the HVAC work myself — that's not my license, and your safety deserves the real thing.

★ Call before you're deep in it

The best time to reach me is while you're still deciding, not after a unit's installed and the AC won't start. A little guidance up front saves a lot of second-guessing. Reach me at (330) 200-8042.

Common comfort-backup mistakes

A handful of avoidable slip-ups account for most heating-and-cooling regret. Now you'll know them in advance.

- **Assuming a gas furnace needs no generator** because 'the heat is gas' — forgetting the blower and controls run on electricity.
- **Expecting central air to just work** on a unit sized for the furnace, without planning for the compressor's big surge.
- **Treating electric heat like gas heat** and under-sizing for a load that makes its warmth from electricity.
- **Skipping a soft-start or load management** and then buying a far bigger unit than the home actually needed.
- **Never testing** until the first cold night or heat wave, when there's no time to fix a surprise.
- **Leaving the thermostat's or zones' quirks out** of the conversation with the electrician and HVAC tech.

! The AC surprise is the common one

More than anything, folks are caught off guard when a standby that runs the furnace fine can't start the air conditioning. Plan the AC deliberately — surge, soft-start, and sizing — and you'll avoid the most common letdown.

Signs backing up heat and cooling is worth it

Comfort backup matters more for some homes than others. These are the situations where folks are usually glad they planned for it.

- Your winters are hard, and a long cold-weather outage is a real possibility.
- Your summers bring heat waves, and someone at home feels the heat keenly.
- Someone's health makes steady temperature more than a comfort — worth raising with their doctor as you plan.
- You travel, and want the house kept from freezing or baking while you're away.
- You have a heat pump or electric heat and want an honest plan rather than a hopeful guess.
- You'd simply rather ride out an outage in a comfortable home than a cold or stifling one.

★ And when a simpler plan will do

If your outages are rare and short and a few blankets or a fan get you through, you may not need to back up full comfort at all. I'll tell you honestly when that's your situation. Call (330) 200-8042.

The road to year-round comfort

If you decide to back up your heat and cooling, here's the calm path from chilly-and-worried to comfortable-and-covered.

- ❑ Confirm what kind of heat you have — gas, oil, boiler, heat pump, or electric.
- ❑ Make your comfort must-run list: heat everywhere or one room, whole-house cooling or one bedroom.
- ❑ Get a load calculation and a few quotes from licensed installers.
- ❑ Decide on a soft-start for the AC and load management if they help.
- ❑ Have licensed pros do the electrical, the transfer switch, and any soft-start.
- ❑ Test heat and cooling on the generator on a mild day.
- ❑ Set up monitoring and a maintenance plan so it stays ready.

✓ You don't walk it alone

Each of these steps has its own guide in this series, and I'm glad to walk any of them with you in person. One calm step at a time.

Questions to ask your HVAC tech or installer

These questions get you a comfort plan that actually matches your specific home.

Q: Is my heat gas, oil, a boiler, a heat pump, or electric?

It changes the whole plan — your HVAC technician can confirm at a glance. Gas and oil are the easy loads; electric heat is the heavy one.

Q: What's the starting surge on my AC compressor, and will a soft-start help?

This decides whether a mid-sized unit can run your cooling. Ask whether a soft-start suits your AC — our load-management guide covers the idea.

Q: Should I back up the whole house, or just essential comfort?

A sizing decision that shapes cost and unit size — make sure you and the installer picture the same thing. Our sizing guide helps you decide.

Q: Will a load-management module let me use a smaller unit?

Often yes, by juggling the big loads. Ask the installer to include it in the load calculation rather than treating it as an afterthought.

✓ There's no silly question

Heating and cooling systems have their own quirks, home by home. Asking a specific question about your specific system beats guessing from a general rule.

Common Questions

The heating-and-cooling questions I hear most often, answered plainly.

Q: If my heat is gas, do I even need a generator for it?

Yes — a gas furnace still needs electricity for its blower and controls. Without power the burner can't push warm air through the house, so the heat never reaches you. The good news is it's a modest load.

Q: Can a standby generator run my central air conditioning?

Often yes, with planning. The compressor's big starting surge is the hurdle; a soft-start device and/or load management can bring a central AC within reach of a mid-sized unit. It's a load-calc question, not a guess.

Q: What about a heat pump or electric baseboard heat?

Those make heat with electricity, so they're much heavier loads. Plenty of homes run them on a properly sized standby — but it deserves a careful load calculation and an honest whole-house-versus-essentials conversation.

Q: What is a soft-start, and do I need one?

It's a device that eases your AC compressor up to speed so it doesn't slam on all at once, shrinking the surge. It often lets a smaller standby run the AC — ask your installer if it suits your system.

Q: Should I back up the whole house or just the essentials?

Whichever fits your climate, health, and budget. A larger unit runs everything; a smaller one plus load management covers chosen comfort. A load calculation from a licensed installer settles it.

★ Still have questions? That's what I'm here for

Heat and cooling are some of the most common reasons folks call me about a standby, and I'm glad to help with nothing to sell you. Call or text me at (330) 200-8042 and let's talk it through.

Bringing it all together

Keeping the house comfortable through an outage comes down to a few honest truths, none of them complicated.

A gas or oil furnace mostly needs its blower and controls backed up — a modest, very doable load a standby handles with ease. Central air is the one that takes planning: its compressor's big surge often calls for a soft-start or load management to run on a mid-sized unit. And heat pumps or electric heat are heavier loads that deserve a careful look.

Decide how much comfort you want to back up, let a load calculation and our sizing guide settle the unit size, lean on our load-management guide for the soft-start and module details, and test it all on a mild day. That's the whole plan for a comfortable house, whatever the weather outside.

★ Let's plan your comfort, honestly

Whether it's a straightforward gas furnace or a bigger conversation about AC or electric heat, I'd rather give you the honest picture than a hopeful guess. Call or text me at (330) 200-8042.

You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made keeping your heat and cooling on feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I don't do the licensed electrical or gas work myself — for that I'll help you line up a trustworthy local pro.

★ Bill's Home Tech — real help, close to home

Call or text me at (330) 200-8042, or visit BillsHomeTech.com. Serving Atwater and all of Portage County. 30+ years of patient, plain-English tech help — and if you're ever not 100% happy with a visit, I'll make it right or refund it. That's a promise. — Bill

What Your Heating and Cooling Needs

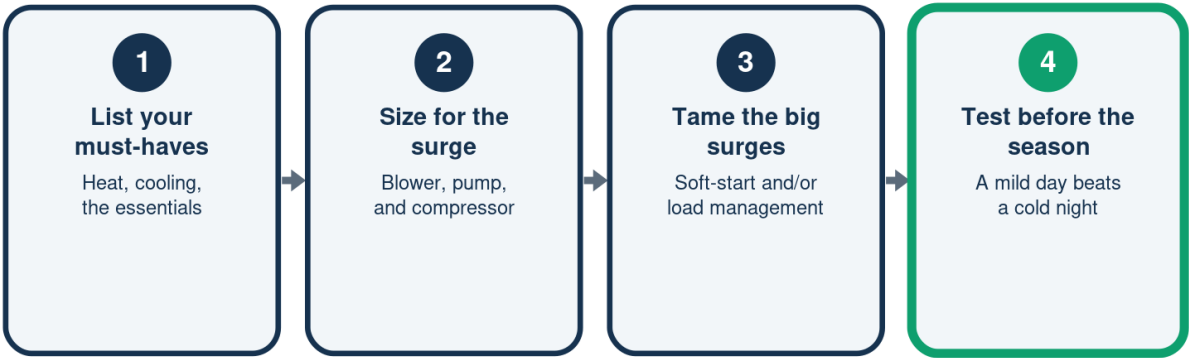
The load depends on what you're backing up

	What it needs	Generator fit
Gas/oil furnace	Blower and controls	A modest load
Gas/oil boiler	Circulator pump(s)	Also modest
Central AC	Big compressor surge	Soft-start helps
Heat pump/electric	Makes heat itself	A heavy load

Know what you're backing up before you size anything.

Backing Up Your Comfort, Step by Step

The calm way to plan it, before the season turns



Do these in order and the season holds no surprises.

Comfort: Whole House vs. Essentials

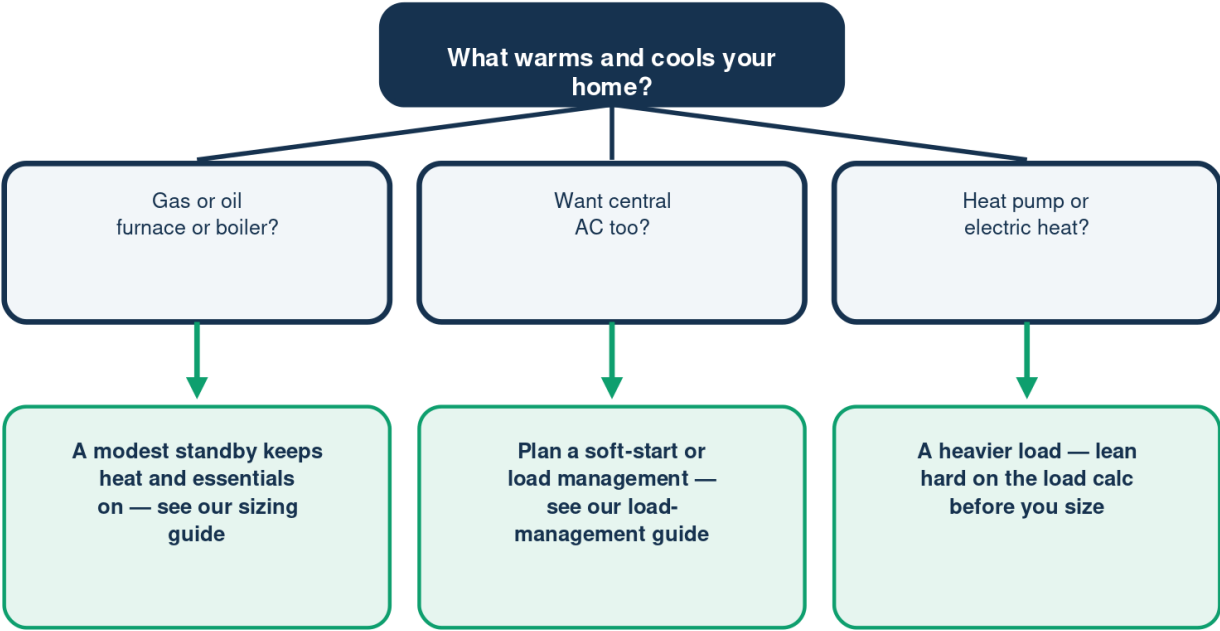
Two honest paths to a comfortable outage

	Whole house	Essentials
Unit size	Larger	Smaller
What runs	Everything	Chosen circuits
Central AC	Usually yes	Maybe, with help
Cost feel	More	Less

A load calculation settles which path fits your home.

What Comfort Do You Need Backed Up?

Let your heat and cooling point the way



Sizing is a load calculation by a licensed installer — no guessing.

Illustration - a schematic, not to scale. Your setup may differ.



Need a Real Person?

You do not have to remember all of it.
You just have to remember you can call.
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Prefer help without a visit?

Bill can screen-share and fix many things remotely — a flat \$49, free for Support Plan members.



A Note From Bill

A quick note from Bill.

I write these guides to make home tech a little less frustrating, and I do my best to keep every step accurate and up to date. Still, every home, device, and setup is a bit different, so I can't promise a guide will match yours exactly or fix your particular problem. These guides are for general information only — they're not professional, legal, or financial advice, and they don't replace your device's own manual or the manufacturer's instructions. Please go slow, use your own good judgment, and use everything here at your own risk. If a step involves electrical wiring, a gas appliance, a water heater, plumbing, or climbing a ladder — or if anything just doesn't feel safe — please stop and call a licensed professional (or give me a call at 330-200-8042). Bill's Home Tech and Bill Davis can't be responsible for any damage, data loss, or injury that comes from using these guides. Thanks for reading, and stay safe out there.

— *Bill*



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