BILL'S HOME TECH

Home & Small Business Tech Solutions

An Extended Guide · No. 1379

Interlock Kit for Furnace Backup

Safe, reliable heat when winter takes the power

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! Read this first — panel work is a licensed electrician's job

A generator interlock kit is installed inside your home's electrical panel, and panel work is among the most dangerous jobs in any house. The power inside a panel can injure or kill even with the lights off, and a wiring mistake can start a fire or push deadly voltage back onto the lines outside, where a utility crew may be working. Adding an interlock — the sliding plate, the generator breaker, and the inlet it connects to — is a licensed electrician's job, almost always with a permit and an inspection. It is never a do-it-yourself project, and it is never something I do myself. This guide is here to help you understand, choose, and safely use an interlock — not to wire one. And please, never try to shortcut all this by backfeeding a generator through a wall or dryer outlet with a double-ended cord; that shortcut kills people, and an interlock kit is the safe, legal way to do the very thing it tempts you to do. In a cold-weather outage the furnace is usually the circuit folks most want back — and because it's hardwired, reaching it safely is exactly what a licensed electrician installs an interlock to do.

Keeping the heat on when winter takes the power

In an Ohio winter, the outages that matter most are the cold ones — and keeping your furnace running is often the number-one reason folks want an interlock. This guide explains how to do it safely.

I'm Bill. Heat isn't a comfort in a hard winter storm — it's a safety matter, for you and for your pipes. The catch that surprises people is that your furnace is hardwired, so a plain extension cord can't power it. An interlock reaches the furnace's own breaker in your panel, which is what lets your generator keep it running.

We'll cover why even a gas or oil furnace needs electricity, how much power the furnace really asks for, and how to keep warm safely through a long, cold outage. The wiring is the electrician's job, with a permit; furnace and gas repairs the HVAC pro's — I help you plan and understand.

★ Worried about heat in an outage?

Tell me about your heating setup and I'll help you plan reliable warmth for the next winter storm. Call or text (330) 200-8042.

Furnace backup, on one page

If you remember only these, you've got the essentials.

- ❑ Your furnace is hardwired, so a cord can't power it — an interlock reaches its breaker in your panel.
- ❑ Even a gas or oil furnace needs electricity for its blower, ignition, and controls, so an outage kills the heat.
- ❑ The blower motor has a starting surge, so bring the furnace up first, then add other loads.
- ❑ Electric furnaces and heat pumps use far more power — often too much for a portable generator.
- ❑ Heat is a winter safety matter — it also helps keep your pipes from freezing.
- ❑ Never bring a generator, grill, or other combustion heater indoors for warmth — deadly carbon monoxide.

> **✔ The furnace is the top winter circuit**
> For most homes, the furnace is the single most important thing to back up in winter. Plan it first.

Why an outage kills the heat

Even with a full tank of fuel, an outage can leave your house cold — here's why.

It surprises a lot of folks, but a furnace can't run on its fuel alone. It needs electricity to move the heat around and to control the burn. So when the power goes out, the furnace goes quiet even though there's plenty of gas or oil in the tank. Backing up that furnace circuit with a generator, through your interlock, is what brings the heat back on a cold night.

> **✔ Fuel in the tank isn't enough**
> A furnace needs both fuel and electricity. The tank may be full, but without power the heat stays off until your generator steps in.

Even a gas or oil furnace needs electricity

This one genuinely surprises people, so it's worth spelling out.

You might think a gas or oil furnace runs on its fuel alone — but it needs electricity to work. The blower that pushes warm air through your house, the ignition or controls that light and manage the burner, and the thermostat all run on electric power. So when the power goes out, even a fuel-fired furnace goes silent. Backing it up with a generator through your interlock is what brings the heat back.

> ✔ **Fuel heat, electric brains**
> A gas or oil furnace burns fuel for heat, but electricity runs its blower and controls. No power, no heat — until your generator steps in.

Why the furnace needs the panel, not a cord

This is the surprise that sends a lot of folks toward an interlock.

Your furnace is wired directly into your home's electrical system — there's no plug to run a cord to. So the only safe way to power it from a generator is through a panel connection like an interlock (or a transfer switch), installed by a licensed electrician with a permit. The interlock reaches the furnace's own breaker, so during an outage you simply switch that circuit on. You can cord-power a lamp or a fridge, but the furnace — like the well pump — has to go through the panel.

> **✔ No plug, no cord**
> The simple rule: if it's hardwired, a cord can't reach it. The furnace is the classic reason a panel connection like an interlock matters.

The blower motor's surge

The furnace's power demand is mostly about one part: the blower.

The blower is a motor, and like other motors it needs a starting surge — a brief jolt larger than what it uses while running. For a gas or oil furnace, that blower is usually the main power draw, and its surge is what your generator handles when the furnace kicks on. It's a manageable load for a typical portable generator, but it's why we bring the furnace up first, before smaller loads. Our sizing guide covers the idea in plain English, with no invented numbers.

> **✔ Bring the furnace up first**
> Because the blower has the biggest surge on many in-town lists, switch the furnace on first, while the generator has the most to give.

Electric furnaces and heat pumps

If your heat is all-electric, the picture changes, and honesty matters here.

An electric furnace or a heat pump uses far more power than a gas furnace's blower alone — often more than a typical portable generator can provide. If that's your system, backing up full electric heat may need a much larger generator, or simply may not be practical on a portable. Many folks with electric heat plan for safe supplemental warmth during outages instead, and use their generator for other essentials. An HVAC pro and electrician can tell you what your specific system needs.

> **! Electric heat is a big load**
> Don't assume a portable generator can run electric heat — it often can't. Check with an electrician and HVAC pro, and plan safe backup heat if needed.

Heat is a safety matter, not just comfort

In a hard winter, keeping the house warm protects people, not just comfort.

A cold home is genuinely dangerous, especially for older adults, young children, and anyone with health conditions — the body loses heat faster than many realize, and confusion and drowsiness from cold can sneak up. Keeping the furnace running keeps everyone safe, and it keeps the house warm enough to protect your plumbing too. That's why, of all the circuits, the furnace usually tops the winter list.

> **! Cold can be dangerous**
> Don't tough out a cold house in a long winter outage. If you can't keep warm safely, relocate to somewhere heated and check on elderly neighbors.

Two kinds of homes, two sets of needs

Everyone needs heat in an Ohio winter, but the stakes and the juggling differ a bit between town and country.

If you live in town or the suburbs

In town, outages are often shorter, but a cold snap is still dangerous and pipes still freeze. A gas furnace's blower is usually a comfortable load for a portable generator, making the furnace an easy, high-value circuit to back up through the interlock.

- A gas or oil furnace blower is usually well within a portable generator's reach.
- Even a short winter outage is worth backing up the furnace for.
- Bring the furnace up first — its blower has the biggest surge on a typical in-town list.
- Protecting pipes from freezing is reason enough on its own.

If you are out in the country on a well

Out in the country, outages run longer and help is farther away, so reliable heat matters even more — and the furnace often shares the generator with the well pump through a hard freeze.

- Longer rural outages make dependable furnace power especially important.
- Heat and the well pump are the rural winter priorities — cycle them, bringing each big motor up on its own.
- A longer cold outage raises the risk of frozen pipes — keep the house above freezing.
- Plan fuel for extended runs; a long January outage can last days. Our well-pump guide pairs with this one.

> **★ Planning winter heat backup?**
> Town or country, I'll help you make sure your furnace stays on and your pipes stay safe this winter. Call (330) 200-8042.

Bringing the furnace up first

Here's how the furnace fits into the interlock's own operating sequence — our using-during-an-outage guide has the full routine.

Once the generator is running safely outside and the cord is connected, you go to the panel: turn the main breaker off, slide the interlock plate over, and turn the generator breaker on. Then bring the furnace's breaker up first, so its blower surge lands while the generator is fresh, and let it settle into a steady run before adding the fridge, lights, or other circuits one at a time. If the plate ever resists, the main isn't fully off — never force it.

> **✔ Furnace first, then the rest**
> After the generator breaker is on, switch the furnace on first and let the blower steady, then add your smaller loads one by one.

The thermostat and controls

A few small things help your furnace behave nicely on generator power.

Your thermostat and the furnace's controls run on that same electric power, so they come back to life when the furnace circuit does. During an outage it's fine to set the thermostat a little lower than usual to ease the load and stretch your fuel — warm enough to stay safe and protect the pipes, without running the furnace harder than needed. If you have a smart thermostat, it simply resumes when power returns.

> **✔ A modest setting saves fuel**
> Setting the thermostat a touch lower during an outage keeps everyone safe while stretching your generator fuel further.

Protecting your pipes from freezing

Keeping the heat on does double duty — it guards your plumbing too.

When a house loses heat in a deep freeze, pipes can freeze and burst, turning an outage into an expensive flood. Running your furnace to keep the house above freezing is the best protection. If a stretch without heat is unavoidable, let faucets drip slightly, open cabinet doors under sinks so warm air reaches the pipes, and know where your main water shutoff is. Reliable furnace power is the front-line defense.

> **✔ Know your water shutoff**
> Before winter, make sure you know where your main water shutoff is — just in case a pipe ever does freeze and burst.

Sizing the generator for your furnace

As always, your own equipment tells you what you need — no guessing.

For a gas or oil furnace, find the blower's power needs on the furnace's nameplate or in its manual, and your electrician confirms a generator that handles it comfortably alongside your other must-run loads. For electric heat, get an HVAC pro's read on the demand, because it's much higher. Either way, the honest approach is to size from your real equipment — our sizing guide walks the method with no invented numbers.

> **★ I'll help you find the numbers**
> Bring me your furnace's nameplate or manual and I'll help you and your electrician size the generator right. Call (330) 200-8042.

Boilers and other heating systems

Not everyone has a forced-air furnace, so a quick word on other systems.

A boiler (hot-water or steam heat) also relies on electricity for its pumps, controls, and ignition, so it too needs backup power to run in an outage — through the interlock, like the furnace. The exact power needs vary by system, so read the equipment's information or ask your heating pro. The principle is the same across systems: the heat source may burn gas or oil, but electricity runs the parts that circulate the warmth.

> ✔ **Most heat systems need electricity**
> Whether it's a furnace or a boiler, the pumps, fans, and controls run on electric power. Backing up that circuit is what keeps the heat moving.

Safe supplemental heat

Sometimes you want a little extra warmth, or a backstop if the furnace can't run. Do it safely.

You can run a modest electric space heater on generator power (a steady load, no surge) to warm a room, as long as you don't overload the generator. What you must never do is bring any outdoor combustion device inside for heat — not a generator, not a grill, not a camp stove or an unvented fuel heater not made for indoor use. They produce carbon monoxide that can kill in an enclosed space. Safe warmth means electric heat, layers, and blankets — never bringing the outdoors in.

> **! Never bring combustion heat indoors**
> A generator, grill, or camp stove used indoors for heat can kill a whole household with carbon monoxide. Never do it — warm up with electric heat and layers instead.

Test the furnace on generator power

Prove it works on a calm day, not on the coldest night of the year.

When your interlock is installed and tested, make sure the furnace is included — that it starts and runs properly on generator power without the generator straining. Confirming this during the install means you'll never have to wonder, in the middle of a January storm, whether your heat will actually come on. It's a small step with big peace of mind.

> **★ Witness the furnace test**
> I like to be there when the furnace is tested on the generator — it's reassuring to see the heat kick on. Call (330) 200-8042.

Two carbon-monoxide dangers to remember

Winter heat and generators bring carbon monoxide to mind twice — here's both.

> **! Read this first — carbon monoxide is the real danger**
> A running generator's exhaust contains carbon monoxide — an invisible, odorless gas that can kill in minutes. Never run a generator indoors, in a garage, in a shed, or on a porch, not even with the door open and a fan going. Run it outside only, well away from the house — the safety agencies say at least 20 feet — with the exhaust pointed away from every window, door, and vent. Put battery-backup carbon-monoxide alarms on each floor and outside the bedrooms. If an alarm sounds, or anyone feels dizzy, sick, or sleepy, get everyone into fresh air first and ask questions later. First, the generator itself runs outdoors only, far from the house, exhaust pointed away — cold weather never changes that.

Second, never bring any combustion heat source — a generator, grill, camp stove, or unvented fuel heater — indoors for warmth. Both dangers come down to the same rule: keep the exhaust outside, and keep carbon-monoxide alarms on and tested inside.

Common furnace-backup mistakes

A few slip-ups to sidestep so your heat is there when you need it.

- **Assuming a gas or oil furnace runs without power** — it needs electricity for the blower and controls.
- **Trying to cord-power the furnace** — it's hardwired and needs the interlock's reach into the panel.
- **Assuming a portable can run electric heat** — often it can't; check first.
- **Not testing the furnace** on the generator before winter.
- **Bringing combustion heat indoors** — never; it's deadly carbon monoxide.

> **! The deadly one**
> Of all these, bringing a generator, grill, or fuel heater indoors for warmth is the one that kills. Never, ever do it.

Common Questions

The questions I hear most about keeping heat on with an interlock.

Q: Does my gas furnace need electricity?

Yes — the blower, ignition, and controls all run on electric power. Even a gas or oil furnace goes quiet in an outage until it's backed up through your interlock.

Q: Can I run my furnace on an extension cord?

No — the furnace is hardwired, so it needs a panel connection like an interlock or transfer switch. Only things with plugs can use a cord.

Q: Can a portable generator run my electric furnace or heat pump?

Often not — electric heat uses far more power than a gas furnace's blower. Check with an electrician and HVAC pro, and plan safe supplemental heat if needed.

Q: How do I stay warm if I can't run the furnace?

Use a modest electric space heater on the generator, layer up, and use blankets. Never bring a generator, grill, or fuel heater indoors — that's deadly carbon monoxide.

> **★ More heat questions?**
> Call or text (330) 200-8042 — keeping folks warm and safe in winter is important to me.

How I help with heat backup

Winter warmth is one of the most valuable things an interlock provides, and I'm glad to help you plan it.

I'll help you understand your heating system's power needs, plan a generator sized for the furnace, arrange safe supplemental heat if you have electric heat, and make sure the furnace gets tested on the generator before winter. I'll coordinate a licensed electrician for the interlock and its permit, and an HVAC pro for the furnace. The goal is simple: dependable, safe warmth when the power's out and the temperature's dropping.

> **★ Reliable heat, planned together**
> Call or text (330) 200-8042 and we'll make sure your home stays warm through the next winter storm.

The short version to carry with you

If the details blur, hold onto these.

- ❑ The furnace is hardwired — an interlock reaches its breaker; a cord never can. Even gas and oil furnaces need electricity.
- ❑ Bring the furnace up first for the blower's surge; electric heat is often too big for a portable.
- ❑ Heat protects people and pipes — it usually tops the winter list.
- ❑ Never bring a generator, grill, or fuel heater indoors for warmth — it's deadly.

> **✔ Keep this guide handy**
> Read it before winter, and keep it with your home papers for the cold months.

You don't have to do this alone

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

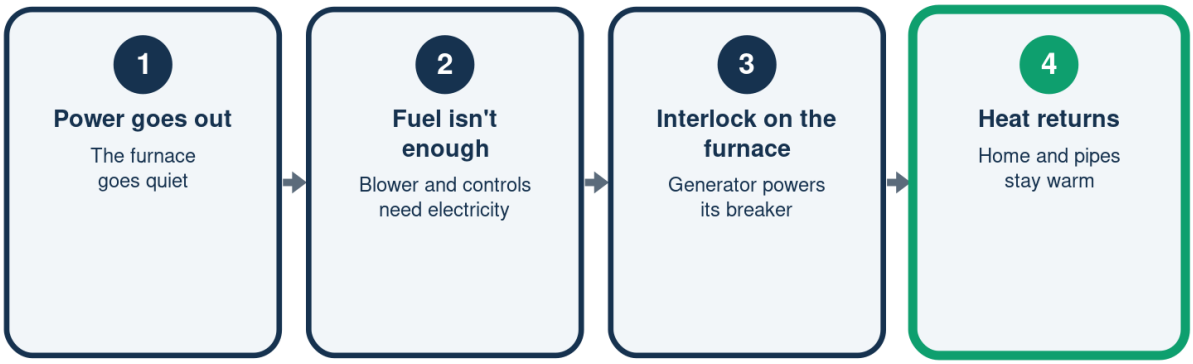
I hope this guide made keeping your furnace running with an interlock kit feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

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

Why the Furnace Needs Backup

Even fuel heat depends on electricity



The furnace is hardwired -- an interlock reaches its breaker.

Heating Systems and Backup Power

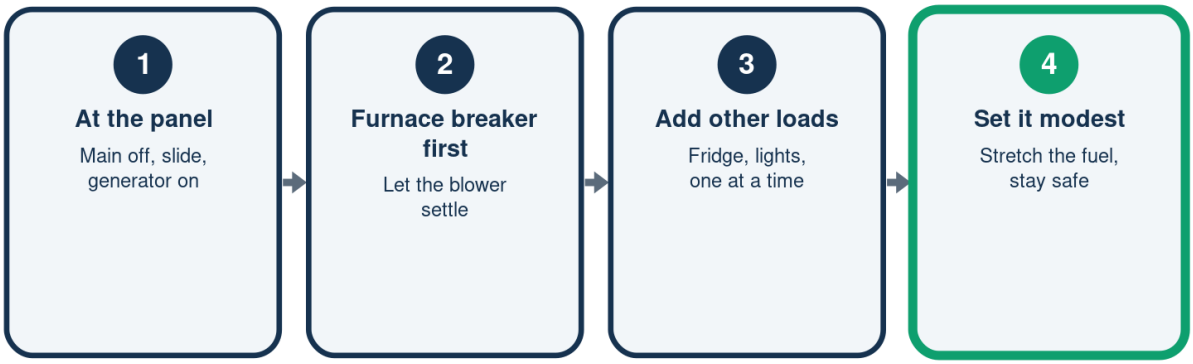
How each fits a portable generator

	System	Backup outlook
Gas or oil furnace	Blower needs power	Usually fits
Boiler	Pumps need power	Usually fits
Electric furnace	Very large load	Often too big
Heat pump	Very large load	Often too big

Electric heat often needs a much larger generator -- check first.

Powering the Furnace, in Order

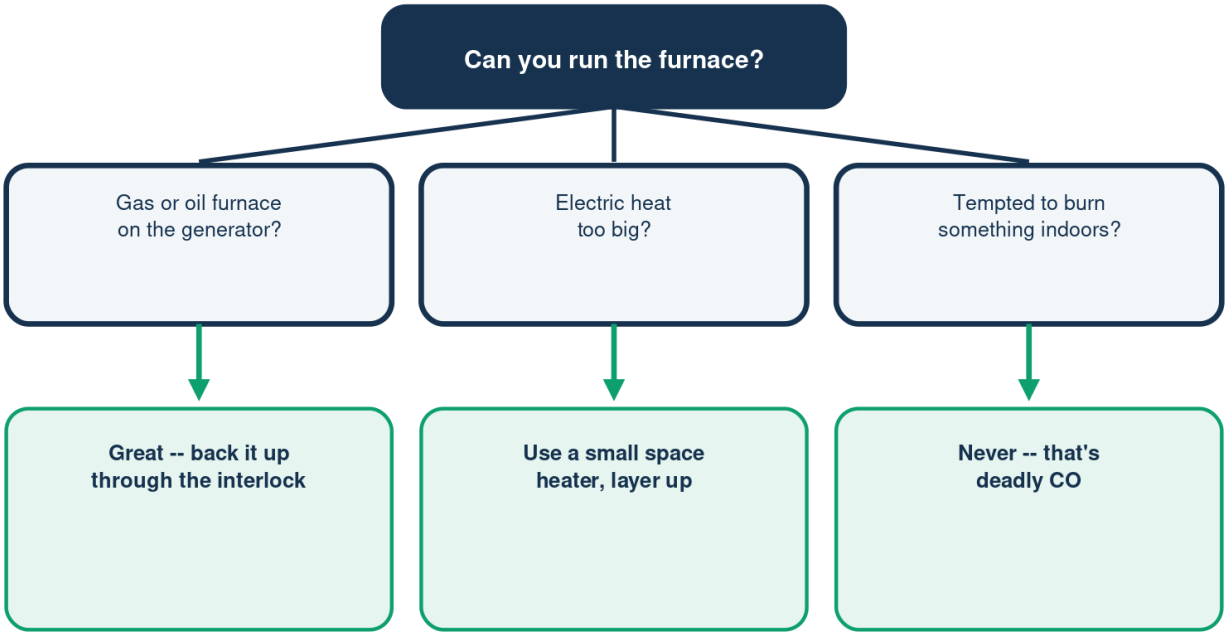
Bring the biggest surge up first



The blower has the biggest surge -- give it a clear runway.

How Will You Stay Warm?

Safe choices in a cold outage



Never bring a generator, grill, or fuel heater indoors for heat.

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

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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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