BILL'S HOME TECH
Home & Small Business Tech Solutions

BILL'S COMPLETE MANUALS

# Home Generators & Transfer Switches

Portable, inverter and standby generators, used safely — explained in plain English, one step at a time

## A plain-English guide for every household

Take your time — and leave the wiring to a licensed electrician

*Written for you by Bill — Bill's Home Tech*

(330) 200-8042 · BillsHomeTech.com

*For portable, inverter & standby generators · facts current November 2026*

# What's Inside

This is your guide to choosing, using and living with a home generator, safely. Read it in any order and at your own pace. Every chapter explains what a feature actually does *for you*, with slow, step-by-step directions for the jobs a homeowner can safely do. One rule runs through the whole guide: connecting a generator to your home's wiring, and installing a transfer switch or a standby generator, is work for a **licensed electrician**. This guide explains what that work is and how to hire for it. It never tells you how to do it yourself.

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PART 1

# Getting Started

What a home generator can and can't do for you, the three main kinds, and whether you need one at all. Start here.

CHAPTER 1

# A Note from Bill

Hello, and welcome. If the lights have gone out on a winter night and you've lain awake wondering about the furnace, the sump pump, the food in the freezer, or an oxygen machine, this guide is for **you**. And if you've already got a generator in the garage that you're a little afraid to start, it's for you too.

I'm Bill. I've spent more than 30 years working with technology, and these days I help folks here in Portage County feel at home with theirs. I wrote this guide the way I'd explain it at your kitchen table: patiently, in plain English, and without trying to sell you anything. When I use a word like "inverter" or "transfer switch," I'll stop and explain it right then.

## What this guide will do for you

- Help you decide whether you need a generator at all, or whether a battery would do.
- Explain the three main kinds (portable, inverter and standby) in everyday words.
- Show you how to figure out what size you need, using a simple list of what you want to keep running.
- Walk you through using a portable generator safely during an outage, step by step.
- Explain transfer switches, what they're for, and how to hire the licensed electrician who installs one.
- Help you live with a standby generator: the weekly test run, the phone app, and yearly service.
- Point out the scams that show up after big storms.

## The one promise I'll make, and the one I won't

Most of this guide is about *choosing*, *placing*, *starting* and *caring for* a generator. Those are jobs you can learn and do carefully. But some jobs are truly dangerous for anyone who isn't trained and licensed for them.

STAY SAFE

### Wiring is a job for a licensed electrician, every time

Connecting a generator to your home's electrical system, installing a **transfer switch**, an **interlock** or a **power inlet**, and installing a **standby generator** must be done by a **licensed electrician**, with a permit where your town requires one. I'm a technology helper, not an electrician. This guide will never give you wiring steps, and you should be wary of anyone, online or in person, who does.

WHAT THIS DOES FOR YOU

### Why this matters

Used the right way, a generator keeps the heat on, the basement dry, the food cold and the phones charged. Used the wrong way, it can poison a family with carbon monoxide or electrocute a line worker down the street. A little knowledge makes all the difference.

## And I'm only a phone call away

If anything in this guide leaves you unsure, call me at **(330) 200-8042**. There's no such thing as a silly question, especially about electricity and fuel, where it's always smarter to ask first.

***— Bill***

CHAPTER 2

# Do You Really Need a Generator?

A generator is a small engine that burns fuel (gasoline, propane or natural gas) to make electricity. It's the right answer for some homes and overkill for others. Before you spend money, it's worth five minutes of honest thinking.

## Questions to ask yourself

1. **How long do outages usually last where you live?** An hour or two now and then is a different problem from two or three days after an ice storm.
2. **What truly can't go without power?** A sump pump in a wet basement, a well pump, a furnace blower in January, medical equipment, a refrigerator full of insulin, or a home office.
3. **Who will run it?** A portable generator has to be wheeled outside, fueled and started, often in bad weather. Be honest about whether that's realistic for you.
4. **What's your budget?** A small portable unit and a whole-home standby system are very different price ranges, as Chapter 3 explains.

## When a battery may be enough

If you mostly want to keep phones charged, the Wi-Fi on, a lamp lit and maybe a CPAP running overnight, a **portable power station** (a big rechargeable battery with outlets) may be all you need. It makes no fumes, so it can sit safely indoors, and it's silent. It just can't run big things like a furnace or a well pump for long. For small electronics, a **battery backup (UPS)** on the modem and router is another simple step.

GOOD TO KNOW

### Two companion guides

Bill's Complete Manuals include separate guides on **Portable Power Stations** and on **Surge Protectors & Battery Backups**. If your needs are small, start there. This guide is about the bigger, fuel-burning machines.

## When a generator makes sense

- You have a sump pump or well pump that must keep running in a storm.
- You lose power for a day or more a few times a year.
- Someone in the home depends on powered medical equipment and needs more than a battery can give.
- You want the furnace blower, refrigerator and some lights to keep going in a long winter outage.
- You'd like the house to take care of itself automatically, even when you're away (a standby generator).

WHAT THIS DOES FOR YOU

### What this does for you

Answering these questions first keeps you from buying too much machine, or too little. The right choice is the one you'll actually be able to use safely when the lights go out.

CHAPTER 3

# The Three Kinds: Portable, Inverter & Standby

Walk into a hardware store and you'll see generators of every size and color. Almost all of them fall into three families.

## 1. The portable generator (sometimes called "conventional")

This is the classic open-frame generator on wheels, usually running on gasoline, sometimes on propane too. It's loud, fairly heavy, and gives you a lot of power for the money. You roll it outside during an outage, start it, and plug things into it. Its power is fine for pumps, refrigerators and tools, but it isn't as smooth as an inverter's.

## 2. The inverter generator

An **inverter generator** is usually smaller, enclosed in a case, and much quieter. Electronics inside clean up the power it makes, so it's gentler on computers, TVs and phone chargers. It can also slow its engine down when you're using only a little power, which saves fuel and noise. Inverter models cost more for the same number of watts. Some larger ones can run a good part of a home.

GOOD TO KNOW

### What "clean power" means

Makers measure how smooth a generator's power is with a number called **THD** (total harmonic distortion). Lower is smoother. Champion, for example, says its inverter generators produce power with **3% THD or less**, which it calls safe for sensitive electronics. Look for the THD figure on the box or spec sheet.

## 3. The standby (whole-home) generator

A **standby generator** looks like an air-conditioning unit and sits permanently on a pad outside your house. It runs on natural gas from your gas line or on propane from a tank. It's wired to your home through an **automatic transfer switch**. When the power goes out, it starts by itself within moments and switches the house over. When the power comes back, it switches back and shuts itself off. You don't have to do anything.

STAY SAFE

### Standby generators are installed by professionals only

A standby generator needs electrical work, usually gas-line work, a concrete or composite pad, permits and inspection. It must be installed by a licensed electrician (and, for the gas line, a qualified gas or plumbing contractor). Chapter 12 shows you how to hire well.

| | Portable | Inverter | Standby |
|---|---|---|---|
| Starts on its own | No | No | Yes |
| Noise | Loud | Quieter | Moderate, outside |
| Power for electronics | Fine for most loads | Smoothest | Smooth on modern models |
| Fuel | Gasoline, some dual fuel | Gasoline, some dual fuel | Natural gas or propane |
| Who installs | You set it up each time | You set it up each time | Licensed pros only |
| Rough cost | Least per watt | More per watt | Most; installed price varies widely |

HEADS UP

### About prices

Generator prices vary a great deal by size, brand and season, and standby installation costs depend on your home, your gas service and your electrical panel. Rather than quote numbers that will be wrong by next month, this guide suggests getting at least two written quotes for any installation.

WHAT THIS DOES FOR YOU

### What this does for you

Knowing the three families lets you cut through the store aisle in a minute: portable for power on a budget, inverter for quiet and electronics, standby for hands-off, whole-home protection.

PART 2

# Choosing the Right Size & Fuel

Watts made simple, your must-run list, the fuel choices, and a buying checklist that puts safety features first.

CHAPTER 4

# Watts Made Simple: Running vs. Starting

Generators are sized in **watts**, a measure of how much electricity something uses. A light bulb might use 10 watts; a space heater 1,500. A generator can only supply so many watts at once. Ask it for more, and it will bog down or its breaker will trip.

## Two numbers on every generator

- **Running watts** (also called rated watts): how much the generator can supply steadily, hour after hour. This is the number that matters most.
- **Starting watts** (also called surge or peak watts): a higher number the generator can supply for a few seconds, to get motors going.

## Why motors need a little extra

Anything with a motor (a refrigerator, a sump pump, a well pump, a furnace blower) needs a burst of extra power for a second or two when it starts, often two to three times its running watts. Once it's running, it settles down to its normal level. That's why generator makers list both numbers.

TIP

### Use the label on the appliance

Published wattage charts disagree with each other a lot. One maker's worksheet lists a refrigerator at about 700 running watts, another at a few hundred. The most accurate figure is on your own appliance: look for a label (often inside the door, on the back, or on the motor) showing watts, or volts and amps. Volts times amps gives you approximate watts.

## The simple sizing rule

1. Add up the **running watts** of everything you want on at the same time.
2. Find the one item with the biggest **extra starting** need (usually a pump or the refrigerator) and add its starting extra on top.
3. Choose a generator whose running watts cover step 1 and whose starting watts cover step 1 plus step 2.
4. Leave some breathing room. A generator running flat out all day works harder and burns more fuel.

GOOD TO KNOW

### Two pumps at once

If two motors may start together, say a sump pump in a downpour and the refrigerator, generator worksheets suggest counting the starting extra for both.

WHAT THIS DOES FOR YOU

### What this does for you

Ten minutes with a pencil keeps you from buying a generator that trips every time the pump kicks on, or paying for twice the machine you need.

CHAPTER 5

# Make Your Must-Run List

The easiest way to size a generator is to write down what you'd truly want running in a long outage. Not everything in the house, just the things that matter.

## Start with the essentials

- **Heat:** a gas furnace still needs electricity for its blower and controls.
- **Water:** a well pump, and a sump pump if your basement takes on water.
- **Food and medicine:** the refrigerator and maybe a freezer.
- **Health:** CPAP, oxygen concentrator, powered bed or lift chair, medicine that must stay cold.
- **Communication:** phone chargers, the modem and Wi-Fi router, a home phone base.
- **Light:** a few lamps.

## Things that are hard for a small generator

Central air conditioning, electric ranges and ovens, electric water heaters, electric dryers and electric baseboard heat use a great deal of power. Most portable generators can't run them, and some of them can't simply be plugged in anyway. Whether a standby generator should cover them is a question for the licensed installer's load calculation.

## Your list

| What | Running watts (from its label) | Has a motor? |
|---|---|---|
| Refrigerator | _____ | Yes |
| Sump pump | _____ | Yes |
| Furnace blower | _____ | Yes |
| Medical device | _____ | Check the manual |
| Modem and router | _____ | No |
| Lamps and chargers | _____ | No |
| Other: _____ | _____ | _____ |
| Total running watts | _____ | |

TIP

### Ask the maker's sizing tool

Most generator makers have a wattage calculator or sizing guide on their website. Use it as a second opinion next to your list, and remember the labels on your own appliances are the most accurate source.

FROM BILL

### Want a second pair of eyes?

Reading appliance labels and adding up a list is the kind of thing I'm happy to help with, in person or over a video call. $49 remote · $99 in your home.

WHAT THIS DOES FOR YOU

### What this does for you

Your must-run list becomes your shopping list, your conversation starter with an electrician, and your plan for outage day: which cords go where, and in what order to turn things on.

CHAPTER 6

# Fuel Choices: Gasoline, Propane, Natural Gas & Dual Fuel

What your generator burns affects how long it runs, how you store fuel, and how much work outage day will be.

## Gasoline

Easy to buy and used by most portable generators. The catch: gasoline goes stale. Champion says that without a fuel stabilizer, gasoline can go bad within about a month, and that a stabilizer can help extend its life up to 24 months. Honda gives shorter windows. Stale fuel is one of the most common reasons a generator won't start. You also have to store cans safely, and gas stations may not be able to pump during a widespread outage.

## Propane

Propane comes in the familiar grill-size tanks for portable units, or in larger tanks for standby generators. It keeps for a very long time without going stale. It gives a little less power than gasoline in the same generator, so check the propane rating on the spec sheet.

## Natural gas

If your home has natural gas service, a standby generator can run on it with no refilling at all. The gas connection is professional work: it's sized and installed by a qualified gas or plumbing contractor as part of the installation.

## Dual fuel

Many portable generators are **dual fuel**: they can run on gasoline or on propane, switching with a selector. That gives you a backup if one fuel runs out.

STAY SAFE

### Fuel safety in one breath

Store gasoline only in approved, labeled containers, outside your living space and away from anything that can spark or flame. Never store fuel in the house. Turn the generator off and let it cool before refueling. Chapter 10 covers this in full.

WHAT THIS DOES FOR YOU

### What this does for you

Choosing the fuel that fits your home means fewer trips to the gas station in a storm and fewer "it won't start" mornings.

CHAPTER 7

# A Buying Checklist That Puts Safety First

Once you know your size and fuel, here's what to look for on the box or spec sheet of a portable or inverter generator.

## 1. A carbon monoxide shut-off

This is the most important feature on a modern portable generator. A sensor watches the carbon monoxide (CO) around the generator and shuts the engine off if it builds up to dangerous levels. Makers have their own names for it: Champion calls it **CO Shield**, Generac calls it **CO-SENSE**. In 2026 news releases, the Consumer Product Safety Commission (CPSC) urges buyers to look for a generator with a CO shut-off safety feature.

HEADS UP

### A shut-off is not a CO alarm

Champion says plainly that CO Shield is not a substitute for safe use or for a carbon monoxide alarm in your home. A sensor on the generator can't tell you about CO that has drifted into the house. You still need working CO alarms inside (Chapter 8).

## 2. Electric start

Pulling a recoil cord takes strength. Many generators have a push-button or key start with a battery, and some have a remote fob. If pulling a cord would be hard for you, make this a must.

## 3. The right outlets

Look at the panel. Standard household outlets let you plug in heavy-duty extension cords. Larger round "twist-lock" outlets are meant for a cord that goes to a professionally installed transfer switch or inlet. If you plan to have an electrician install one later, tell them your generator model before you buy, so the connection matches.

## 4. Noise

Inverter generators are much quieter than open-frame ones. If you have close neighbors, or will be running it at night, compare the decibel (dB) figures on the spec sheets.

## 5. Run time and fuel gauge

Check how many hours it runs on a tank at a typical load (often listed at 25% or 50% load). A simple fuel gauge saves guesswork.

## 6. Weight and wheels

A generator you can't move to a safe spot is no help. Look for wheels and a fold-down handle, and think about the path from where you'll store it to where it will run.

TIP

### Register it the day you buy it

Register the generator with the maker. That's how you'll hear about recalls, and it often starts the warranty. Keep the receipt and the manual together, somewhere you can find them in the dark.

WHAT THIS DOES FOR YOU

### What this does for you

A generator with a CO shut-off, an easy start and a manageable weight is one you'll actually use, and use safely, at 2 a.m. in a snowstorm.

PART 3

# Safety First

Carbon monoxide, backfeeding, fire and shock. Please read these three chapters before you ever start a generator.

CHAPTER 8

# Carbon Monoxide: The Silent Danger

Every fuel-burning engine makes **carbon monoxide** (CO), a gas you can't see, smell or taste. A portable generator makes a lot of it. In an enclosed space it can build up to deadly levels in minutes.

STAY SAFE

**The rules that save lives**

Run a portable generator **outdoors only**, at least **20 feet from the house** and any building someone might go into, with the exhaust pointed **away** from windows, doors and vents. **Never** run it in a house, garage, basement, crawlspace, shed, porch or carport, even with doors or windows open. CPSC says an average of about 100 people in the U.S. die each year from CO poisoning linked to portable generators.

## Why an open garage door isn't enough

It feels like fresh air should carry the fumes away. It doesn't, reliably. The CDC warns that opening windows or running fans won't stop CO from building up in an enclosed or partly enclosed space. And CO from a generator in an attached garage can seep into the house.

## Carbon monoxide alarms are a must

1. Put a CO alarm on **every level** of your home and outside sleeping areas. Battery-operated alarms, or plug-in alarms with battery backup, keep working when the power is out.
2. Press the **Test** button once a month.
3. Replace batteries as the alarm's instructions say, and replace the whole alarm when it reaches the end of its life (many chirp or show an end-of-life warning).
4. Before outage season, check that the alarms near bedrooms work. That's where they matter most at night.

GOOD TO KNOW

**Smart CO alarms**

Some CO alarms can send an alert to your phone, which is a comfort if you're caring for a parent who lives alone. Bill's Complete Manuals include a separate guide on **Smart Smoke & CO Alarms**.

## Know the symptoms

The CDC lists the most common symptoms of CO poisoning as **headache, dizziness, weakness, upset stomach, vomiting, chest pain and confusion**. They're easily mistaken for the flu. People who are asleep or have been drinking can die before they notice anything.

STAY SAFE

### If a CO alarm sounds or anyone feels sick

Get everyone, and pets, **outside into fresh air right away**. Then call **911**. Don't stop to turn the generator off or look for the cause. Don't go back in until emergency responders say it's safe.

WHAT THIS DOES FOR YOU

### What this does for you

Placement and alarms are the two habits that turn a generator from a hazard into a help. They cost little and they save lives.

CHAPTER 9

# Never Backfeed: Why the Wall-Outlet Trick Kills

You may hear someone say you can power the whole house by plugging the generator into a wall outlet or the dryer outlet with a special cord. Please don't. It's one of the most dangerous things anyone can do with a generator.

## What "backfeeding" means

Your home's wiring is connected to the utility's lines on the street. If generator power is pushed into your house wiring without a proper isolation device, it can flow **backward** out to the street. The transformer on the pole can step that power up to thousands of volts.

## Who it hurts

- **Line workers** repairing what they believe is a dead line.
- **Neighbors** on the same circuit.
- **Your own household**: backfeeding can also start fires and damage your wiring and the generator.

FirstEnergy, the parent company of Ohio Edison, warns that powering home wiring through a wall outlet ("backfeeding") puts utility workers and neighbors at risk of electrocution. OSHA says a portable generator should never be connected to a building's electrical system unless a properly installed transfer switch is used.

STAY SAFE

### There is no safe do-it-yourself shortcut

If you see videos or advice showing a cord with two male plugs, or how to "just flip off the main," close them. Those cords are sometimes called "suicide cords" for good reason. The only safe way to power household circuits from a generator is a **transfer switch** or other approved isolation device installed by a **licensed electrician**. Chapter 11 explains what those are.

## What you *can* safely do without an electrician

Plug appliances **directly into the generator's own outlets**, or into a properly rated outdoor extension cord that runs from the generator to the appliance. That's how most people use a portable generator, and Chapter 16 shows you how.

WHAT THIS DOES FOR YOU

### What this does for you

Knowing why backfeeding is deadly protects the crews working to restore your power, protects your neighbors, and protects your home.

CHAPTER 10

# Fire, Fuel & Shock Safety

Carbon monoxide gets the headlines, but generators also bring fire and shock risks. A few simple habits take care of them.

## Refueling

1. Turn the generator **off**.
2. Let it **cool down**. Engine parts stay hot enough to ignite spilled fuel for some time after shutdown. Check your manual for its advice.
3. Refuel outdoors, slowly, without overfilling. Wipe up any spills.
4. Close the fuel cap and carry the can away before you restart.

## Keep it dry

OSHA says to keep a generator dry and not use it in rain or wet conditions, and to protect it with a canopy-like cover if needed. Set it on a dry, level surface. Make sure your hands are dry before you touch it, and don't stand in water while you plug or unplug cords.

HEADS UP

**Covers must be made for generators**

Any tent or cover must be one sold specifically for running generators, open on the sides so exhaust and heat escape. Never run a generator under a tarp, a deck or an enclosed porch roof.

## Cords and plugs

OSHA recommends plugging appliances directly into the generator, or using grounded (three-prong) extension cords, and inspecting cords for damage before use. FirstEnergy adds: make sure cords aren't damaged and the prongs are intact. Chapter 16 has the details.

## Storing fuel

- Use approved fuel containers with labels.
- Store them outside the living area, away from heaters, pilot lights and anything that sparks.
- Keep only what you need, and use or rotate stored gasoline (Chapter 21).

STAY SAFE

### Fire extinguisher nearby

Keep a fire extinguisher where you can reach it, but never between you and the generator. If a fire starts and you can't put it out in seconds, get away and call 911.

WHAT THIS DOES FOR YOU

### What this does for you

These habits are easy once they're routine, and they keep a stressful outage from turning into an emergency.

PART 4

# Connecting to the House: The Electrician's Job

What transfer switches are, how to hire a licensed electrician, and what to expect on installation day. You'll learn what to ask for, never how to wire it.

CHAPTER 11

# Transfer Switches, Explained

If you want a generator to power the furnace, the well pump or whole circuits in your house, rather than just a few things plugged into cords, you need a **transfer switch**. This chapter explains what one is so you can talk with an electrician confidently. Installing one is not a homeowner job.

STAY SAFE

**Licensed electrician only**

Every device in this chapter connects to your home's electrical panel. It must be installed by a **licensed electrician**, under a permit and inspection where your town requires them. Nothing here is an instruction to do the work yourself.

## What a transfer switch does

A transfer switch lets your house take power from **either** the utility **or** the generator, but never both at once. That "never both" is the whole point: it keeps generator power from flowing out to the street (backfeeding, Chapter 9) and keeps utility power from slamming into your generator when it comes back on. National electrical code rules require this kind of protection.

## The kinds you'll hear about

### Manual transfer switch

A small panel, usually mounted next to your main electrical panel, connected to a handful of chosen circuits: the furnace, the refrigerator, the sump pump, some lights. During an outage you connect the portable generator and flip those circuits from "Line" to "Generator" yourself, following the steps your electrician shows you.

### Automatic transfer switch

Used with standby generators. It senses an outage, starts the generator, and switches the house over by itself, then switches back when utility power returns.

### Interlock kit

A mechanical plate fitted to your main panel that physically prevents the main breaker and a generator breaker from being on at the same time. It's made for specific panel models and is part of a complete installation, not a gadget on its own.

### Power inlet box

A weatherproof connection on the outside wall where the generator's cord plugs in. It's wired to the transfer switch or interlock, so you don't have to run cords through a window or door.

| | Who operates it during an outage | Usually paired with |
|---|---|---|
| Manual transfer switch | You, following the electrician's steps | Portable generator |
| Interlock kit | You, following the electrician's steps | Portable generator |
| Automatic transfer switch | Nobody; it's automatic | Standby generator |

TIP

### Ask your electrician which fits your panel

Which option is right depends on your panel, the circuits you want, your generator's outlet and your budget. A good electrician will explain the choices in plain terms and put the price in writing.

WHAT THIS DOES FOR YOU

### What this does for you

With a transfer switch in place, outage day becomes simple: no snaking cords through the house, and the furnace and pumps that can't be plugged into a cord can run too.

CHAPTER 12

# Hiring a Licensed Electrician

Whether it's a transfer switch for your portable generator or a full standby system, the person you hire matters more than the brand you buy. Here's how to hire well.

## Where to find one

- Ask neighbors, friends and family who've had the same work done.
- For standby generators, the maker's website usually has a dealer and installer locator.
- Your town or county building department can tell you what permits are needed and may know local licensed contractors.

## Check the license

In Ohio, electrical contractors are licensed by the **Ohio Construction Industry Licensing Board** (OCILB), part of the Ohio Department of Commerce. Ask the contractor for their license number and check it with the state. Your local building department can also tell you who is registered to pull electrical permits in your town.

## Questions to ask

1. Are you licensed, and will you pull the permit? (Permits and inspection protect you.)
2. Are you insured? Can I see proof?
3. What size generator and transfer switch do you recommend, and why? Did you do a load calculation?
4. For standby: who handles the gas line, and the pad? Will you call 811 to mark buried lines before digging?
5. Where exactly will the generator go, and does that meet the maker's clearance rules and local code?
6. What's included in the price: permit, inspection, startup, training, removal of debris?
7. What warranty do you give on your labor? Is the generator registered for its manufacturer warranty?
8. Do you offer a maintenance plan, and what does it cost?

TIP

### Get it in writing, and get two quotes

Ask for a written, itemized quote from at least two licensed contractors. Don't pay in full up front. A reasonable deposit, with the balance due after inspection, is common.

STAY SAFE

### Don't hire the person who says you don't need a permit

Someone who offers to skip the permit, the license or the inspection to save you money is telling you something important about how they work. Walk away.

## Let your utility and insurer know

It's wise to tell your homeowner's insurance agent about a new standby generator. Ask your electrician whether your utility needs to be notified in your area.

WHAT THIS DOES FOR YOU

### What this does for you

Hiring a licensed, insured, permitted professional means the job is done to code, inspected by someone independent, and backed up if something goes wrong.

CHAPTER 13

# Installation Day & What You Should Learn

Your part on installation day isn't the work. It's making sure you understand how to **use** what was installed, and keeping the paperwork.

## Before they leave, ask them to show you

1. How the generator connects (for a portable unit: which cord, which inlet, in what order).
2. How to switch to generator power and back, using **their** step-by-step instructions for **your** equipment. Ask them to write it down or tape a card inside the panel door.
3. Which circuits the generator covers, and that the labels match.
4. For standby: how to read the controller's display, what the lights mean, and how to turn it off in an emergency.
5. What the weekly or scheduled test run ("exercise") sounds like and when it happens (Chapter 18).

## Keep these papers together

- The permit and the passed inspection sign-off.
- The generator and transfer switch manuals.
- The warranty registration and model and serial numbers.
- The installer's name, phone number and license number.

TIP

### Take a photo

Take a phone photo of the instruction card, the controller display and the label with the model and serial numbers. Then the information is with you even if you're away when something happens.

HEADS UP

### If something seems wrong later

If breakers trip, the transfer switch hums or smells hot, or anything looks scorched, don't open the panel. Turn off the generator if it's safe to do so and call the installing electrician.

WHAT THIS DOES FOR YOU

## What this does for you

A five-minute walk-through on installation day means that when the power goes out months later, you'll know exactly what to do and won't be guessing in the dark.

PART 5

# Using a Portable Generator in an Outage

A practice run on a nice day, outage day step by step, extension cords done right, and keeping electronics and medical equipment safe.

CHAPTER 14

# Before the Storm: Your Practice Run

The worst time to learn a generator is in the dark, in the rain, with the basement filling up. Do a practice run on a calm, dry day, ideally with a family member.

## The practice run

1. Read the **Quick Start** and **Safety** pages of the manual first. Every generator is a little different.
2. Pick your **running spot**: outdoors, on a dry level surface, at least 20 feet from the house, exhaust pointed away from windows, doors and vents, and away from your neighbor's windows too.
3. Wheel the generator from storage to that spot. Notice anything that would be hard in snow or mud.
4. Check the **oil** as the manual describes. Many new generators ship without oil, and many shut themselves off if the oil is low.
5. Add fresh fuel (or connect the propane tank as the manual shows).
6. Start it following the manual. Let it run a few minutes.
7. Plug in one lamp with your outdoor extension cord to see that it works.
8. Turn it off following the manual, and let it cool before you put it away.

> TIP
> **Write your own cheat card**
> In big letters, write the starting steps on an index card (choke, fuel valve, switch, start) and keep it in a zip-top bag taped to the generator. Add a flashlight or headlamp to the bag.

## Gather your outage kit

- Heavy-duty outdoor extension cords, long enough to reach from the 20-foot spot (Chapter 16).
- Fresh, stabilized fuel in approved cans, or full propane tanks.
- Spare oil of the type the manual specifies, and a funnel.
- A flashlight or headlamp, and work gloves.
- Working CO alarms inside, with fresh batteries.

- A generator cover or tent made for running generators, if you'll use it in wet weather.

WHAT THIS DOES FOR YOU

### What this does for you

One practice run turns a stressful job into a familiar one. You'll find the missing cord or the empty oil bottle on a sunny afternoon instead of in the middle of a storm.

CHAPTER 15

# Outage Day, Step by Step

The power is out. Before you touch the generator, take a breath. There's no rush that's worth a mistake.

## First, check the situation

1. Check whether it's just your house or the whole street. If only your house is out, check your breaker panel's main breaker, or call your utility.
2. Report the outage to your utility (FirstEnergy customers can text **OUT** to **544487** once registered, or call 1-888-544-4877).
3. If a power line is down, stay far away and call 911.
4. Decide whether you need the generator yet. A full refrigerator stays cold for hours if you keep the door shut.

## Then, run the generator

1. Turn off and unplug the appliances you plan to run, so nothing starts the moment power arrives.
2. Wheel the generator to your **running spot**: outside, 20 feet or more from the house, exhaust pointed away from openings.
3. Check oil and fuel. Fuel it now, while it's cold.
4. Start it the way the manual says, with nothing plugged in. Let it run a minute or two to settle.
5. Plug in your extension cords at the generator, then run them to the appliances.
6. Turn on the **biggest motor first** (often the refrigerator or sump pump), wait for it to settle, then add smaller things one at a time.
7. Keep an eye on the total. If the generator strains or a breaker on it trips, unplug something.

## While it runs

- Check on it from a distance now and then. Don't leave cords where people will trip or where water pools.
- To refuel: unplug or switch off the loads, turn the generator off, let it cool, then refuel (Chapter 10).

- Keep children and pets away from it. It gets hot.

## When the power comes back

1. Switch off and unplug appliances from the generator cords.
2. Turn the generator off as the manual describes.
3. Plug appliances back into the wall outlets.
4. Let the generator cool completely before you move or store it.

STAY SAFE

### The never list

Never run it inside, in the garage, or on the porch. Never plug it into a wall outlet. Never refuel it while it's running or hot. And if a CO alarm sounds, get everyone outside and call 911.

WHAT THIS DOES FOR YOU

### What this does for you

Following the same steps every time makes outage day calm and routine, and keeps everyone safe while the crews work.

CHAPTER 16

# Extension Cords the Right Way

Without a transfer switch, extension cords are how generator power gets to your appliances. The wrong cord can overheat and start a fire, so it's worth getting right.

## What to look for on the package

- **Outdoor rated**: the package and cord jacket say it's for outdoor use (often marked with a "W").
- **Three-prong, grounded** plugs and outlets. OSHA recommends grounded, three-pronged cords.
- **Heavy duty**: a lower gauge number means thicker wire. A 12-gauge cord carries more than a 16-gauge one. Check that the cord's amp or watt rating is higher than what you'll plug into it.
- **Long enough** to reach from the 20-foot spot without stretching tight. Longer cords need to be thicker to carry the same load.

## Using cords safely

1. Look over each cord before you use it. Throw out any with cracks, cuts, exposed wire or bent or missing prongs.
2. Plug the cord into the generator, run it to the house, and plug the appliance in at the far end.
3. Run cords where nobody will trip, and don't pinch them in doors or windows. Cracking a window for a cord can let exhaust in, so close it as much as you can and keep the generator far away.
4. Don't run cords under rugs, and don't coil them up tightly while in use; they can overheat.
5. Keep connections out of puddles and snow.
6. Feel the cord now and then. If it's warm, it's overloaded. Unplug something.

HEADS UP

### Power strips at the end of a cord

If you put a power strip at the appliance end, use a good one and don't overload it. Never plug one power strip into another.

WHAT THIS DOES FOR YOU

### What this does for you

The right cords, used carefully, deliver the power where you need it without adding a fire risk to an already difficult day.

CHAPTER 17

# Electronics, CPAP & Medical Equipment

Computers, TVs, phone chargers and medical devices are the things families most want running, and the things most sensitive to rough power.

## Electronics and generator power

- Inverter generators make the smoothest power, which is why they're often recommended for electronics.
- Many modern standby generators also make clean power. Ask your installer about the model's THD figure (Chapter 3).
- Plug electronics into a **surge protector**, not straight into a cord, to soften spikes as the generator's load changes.
- Start the generator and let it settle **before** plugging in electronics, and unplug them before you shut it off.

## CPAP and other medical devices

1. Check your device's manual, or call the supplier, about running it on generator or battery power. Some makers sell their own battery packs.
2. Ask your doctor or supplier what to do if power is out for longer than your backup lasts.
3. Consider a battery power station for overnight use: it's silent and can be indoors, while the generator recharges it during the day.
4. Keep a written list of the devices, their supplier phone numbers and settings.

## Tell your electric company

FirstEnergy has a **Critical Customer Care** program for customers who depend on medical or life-support equipment. A doctor completes a form, renewed each year. During an outage that may last more than 24 hours, FirstEnergy uses the list to call those customers. FirstEnergy is clear that it **can't guarantee faster restoration**, so you still need a backup plan.

STAY SAFE

### Have a place to go

If someone's life depends on powered equipment, plan where they would go in a long outage: a family member's home, or a facility with backup power. In an emergency, call 911.

WHAT THIS DOES FOR YOU

### What this does for you

A little planning lets the generator protect the things that matter most: health, communication and peace of mind.

PART 6

# Living with a Standby Generator

What it does on its own, the weekly test run, the phone app, and the service that keeps it ready.

CHAPTER 18

# How a Standby Generator Works Day to Day

Once a licensed installer has finished and the inspection has passed, a standby generator mostly takes care of itself. Here's what it does, so nothing surprises you.

## When the power goes out

1. The automatic transfer switch senses that utility power is gone.
2. After a short delay (in case it's just a flicker), the generator starts.
3. Once it's running smoothly, the transfer switch moves the house, or the chosen circuits, onto generator power. The lights come back, usually within moments.
4. When utility power returns and stays steady, the switch moves the house back, and the generator runs a few minutes to cool down, then stops.

## The scheduled test run ("exercise")

Standby generators start themselves on a schedule, often once a week or every other week, and run for a few minutes to keep the engine and battery in shape. This is called **exercising**. Generac says a standard exercise runs the engine **without** switching your home over to generator power. You'll hear it run for a short while and then stop. That's normal.

> TIP
> **Pick a convenient time**
> Many owners prefer the exercise to run on a weekday afternoon, when it won't wake anyone or annoy neighbors. Depending on the model and controller, you or your dealer can change the day and time, sometimes from the app (Chapter 19).

## Keep the area clear

- Keep snow, leaves, mulch, plants and stored items away from the generator and its air vents. Your manual lists the minimum clearances.
- After a big snow, clear the snow away from the vents and exhaust.
- Don't build a fence, shed, deck or planting bed close to it without checking the manual and asking your installer.
- Keep CO alarms working inside, even with a standby generator.

HEADS UP

### Lights and alarms on the controller

The controller (the panel with the display, under the lid) shows the status. A red light or warning message means it needs attention. Note the message, check the app or manual for what it means, and call your dealer. Don't open electrical covers.

WHAT THIS DOES FOR YOU

### What this does for you

Knowing what normal looks and sounds like means you won't worry when it exercises on Tuesday afternoon, and you'll notice quickly if something's wrong.

CHAPTER 19

# The Generator App: Mobile Link & Others

Most newer standby generators can connect to your home Wi-Fi so you can check them from your phone. This is especially comforting if you travel, or if you're keeping an eye on a parent's generator from another town.

## Generac Mobile Link

Generac's app is called **Mobile Link**, available free for iPhone and Android. Generac lists features such as the generator's status, alerts, run-time monitoring, a maintenance history log, and fuel-level checks if an optional propane fuel monitor is installed.

### Plans and cost (as of November 2026)

Generac offers a free **Basic** monitoring plan and several paid **Premium** subscriptions with more features. Prices differ depending on whether you subscribe through Generac's website or inside the app; Generac notes Premium may cost more when upgraded through the app. Check the current prices on Generac's website before you subscribe.

### Setting it up

1. Install **Mobile Link for Generators** from the App Store or Google Play.
2. Create an account with your email address and a strong password.
3. Follow the app's steps to add your generator. You'll need its serial number (on the unit's label and in your paperwork) and your home Wi-Fi name and password.
4. Turn on notifications for the app in your phone's settings, so alerts actually reach you.
5. If a family member helps look after the generator, ask the app or Generac support about sharing access.

## Exercise Now and scheduling

Depending on the controller and plan, Mobile Link can start an exercise on demand (**Exercise Now**) or change the exercise day and time. Generac lists Exercise Now for Evolution 2.0, Sync 3.0 and PowerZone 200 controllers. Generac also warns that a test that transfers your home to generator power will briefly cut power in the house. If you're unsure which controller you have, Generac support can tell you.

## Other brands

Kohler's home generator business now operates under the name **Rehlko**, and its generators have their own remote-monitoring app. Champion, Briggs & Stratton and others offer monitoring on some models. Your installer can tell you what yours supports.

HEADS UP

### Wi-Fi reach

The generator sits outside, often at the far side of the house. If the app keeps saying it's offline, the Wi-Fi may not reach. A Wi-Fi extender or mesh point near that wall often fixes it.

FROM BILL

### This part I can help with

Getting the generator app on your phone, connecting the generator to Wi-Fi, fixing a weak signal and making sure the alerts actually come through is right in my wheelhouse. $49 remote · $99 in your home.

WHAT THIS DOES FOR YOU

### What this does for you

A quick glance at your phone tells you the generator is ready, or that it ran during last night's storm, wherever you are.

CHAPTER 20

# Maintenance, Service Plans & Warranty

A standby generator is an engine. Like a car, it needs oil changes, filters and a check-up. The difference is that it has to work perfectly on the one night you need it.

## What the maker says

Generac's guidance for its air-cooled home standby generators is a **first service after about 25 hours** of running, then regular service at set hour or time intervals, such as every 200 hours or every two years for some models, whichever comes first. Extended run times in long outages need more frequent service. Your owner's manual has the exact schedule for your model.

## Who does what

| Job | Who |
|---|---|
| Keep the area clear of snow, leaves and plants | You |
| Glance at the controller and the app | You |
| Listen for the scheduled exercise | You |
| Oil, filters, spark plugs, battery, valve checks | A qualified service dealer (or as the manual allows) |
| Anything electrical or gas-related | Licensed professionals only |

## Service plans

Many dealers sell yearly maintenance plans. Ask what's included (visits per year, parts, the battery, load testing), what it costs, and whether they come out after a long outage. A plan isn't required, but it means someone else remembers.

## Warranty

Standby generators come with a limited warranty, and makers often offer longer extended warranties, sometimes as a promotion. Warranty terms usually depend on **registration**, installation by an authorized or qualified installer, and following the maintenance schedule. Read your warranty statement and keep service receipts.

HEADS UP

### Keep the receipts

Keep every service receipt in the folder with your manuals. If a warranty claim ever comes up, records of regular maintenance help.

## Portable generators need care too

Portable generators have their own schedule: an early first oil change, then regular changes by hours of use, plus air filter and spark plug care. Follow your manual, and see Chapter 21 for storage.

WHAT THIS DOES FOR YOU

### What this does for you

Regular service is what turns an expensive machine into a dependable one, the kind that starts on the coldest night of the year.

PART 7

# Storage, Trouble & Scams

Storing a portable generator and its fuel, what to check when it won't start, and the scams that follow big storms.

CHAPTER 21

# Storing a Portable Generator & Fuel

Most generators spend most of their lives waiting. How you store yours decides whether it starts next time.

## Fuel goes stale

Gasoline breaks down over time and can gum up the carburetor, the part that mixes fuel and air. Champion says untreated gasoline can go bad within about a month and recommends a fuel stabilizer, which it says can help extend gasoline's life up to 24 months. Honda advises adding stabilizer when you fill the can with fresh fuel. Your manual will say whether to store the generator with stabilized fuel in it or with the tank and carburetor drained.

## Before putting it away for the season

1. Let it cool completely.
2. Follow your manual's storage steps: stabilized fuel, or drained fuel, as it directs.
3. Change the oil if it's due.
4. Clean off dirt and leaves. Check the air filter.
5. For electric-start models, keep the battery charged as the manual describes.
6. Store it in a dry place, covered, away from anything that sparks or flames. Never store it with fuel in the house.

## Exercise it, too

Many owners start their portable generator every month or two and run it under a small load for a while. Check your manual for its advice. It keeps parts moving, charges the battery, and tells you about a problem while the weather's nice.

## Rotate your fuel

- Date your fuel cans with a marker when you fill them.
- Use older stabilized gasoline in the lawn mower or car (if the manual allows) and refill with fresh.
- Propane doesn't go stale, but have tanks inspected and stored upright, outdoors.

WHAT THIS DOES FOR YOU

### What this does for you

Twenty minutes of care in the fall means the generator starts on the first pull, or the first button press, when the ice storm hits.

CHAPTER 22

# When It Won't Start or Keeps Stopping

Most generator troubles have simple causes. Here are the safe checks a homeowner can make. If none of them helps, it's time for a repair shop or dealer.

## Portable generator won't start

1. Is the engine switch **On** and the fuel valve **open**?
2. Is there fuel, and is it fresh? Old gasoline is a top cause.
3. Is the oil level right? Many generators won't start, or will shut off, when oil is low.
4. Is the choke set the way the manual says for a cold start?
5. Is everything **unplugged**? Start with no load.
6. For electric start, is the battery charged? Try the pull cord if it has one.
7. Did a CO shut-off trip? Some generators show a light or code. Move it to a more open spot, farther from the house, with the exhaust pointed away, and see the manual before restarting.

## It starts, then stops or bogs down

- Too much plugged in: unplug some things, and bring them back one at a time.
- Low oil or low fuel.
- A tripped breaker on the generator's panel: reset it as the manual says after reducing the load.
- Stale fuel or a dirty air filter.

## Standby generator problems

- Check the controller display and the app for a message or code, and write it down.
- Make sure it's in automatic mode (your installer showed you the setting).
- Clear snow, leaves or nests from around it.
- Then call your dealer or installer. Don't open electrical or gas covers.

STAY SAFE

### Things never to do

Never bypass a CO shut-off, a low-oil shut-off or a breaker. Never open your electrical panel or transfer switch. Never adjust gas connections. Those are jobs for licensed professionals.

WHAT THIS DOES FOR YOU

### What this does for you

These checks solve the most common problems in a few minutes, and tell you clearly when it's time to hand off to a pro.

CHAPTER 23

# Scams & Storm Chasers

Big storms bring out good people helping neighbors, and also people looking to take advantage. Generators are expensive and in high demand right after an outage, which makes them a target.

SCAM ALERT

### The storm-chaser contractor

Someone knocks after a storm offering a "great deal" on a generator or transfer switch, today only, cash up front, no permit needed. Legitimate licensed electricians give written quotes, pull permits, and don't pressure you to decide on the spot. Check the license with the state, and never pay in full before the work is done and inspected.

SCAM ALERT

### The fake utility call

A caller says they're from the electric company and your power will be shut off unless you pay right now, often with a gift card, a payment app or cryptocurrency. Utilities don't demand payment that way. Hang up and call the number on your bill.

SCAM ALERT

### The "you need a generator inspection" visit

Someone shows up claiming your generator must be inspected or "certified" by them, for a fee. Your own installer or dealer handles service. Don't let strangers into your home or backyard; call your dealer to check.

SCAM ALERT

### Too-good-to-be-true online sellers

Websites and social media ads offering name-brand generators far below normal prices, especially during a shortage, may be fakes that never ship. Buy from stores and sites you know.

SCAM ALERT

### The cord-and-plug "hack"

Videos and posts selling or showing a cord to power your house through an outlet aren't a bargain. They're dangerous and can kill (Chapter 9).

## If you think you've been scammed

1. Stop paying. Don't send more money to "fix" it.
2. Call your bank or card company using the number on your card.
3. Report it to the Ohio Attorney General's Consumer Protection Section and to the FTC at **ReportFraud.ftc.gov**.
4. Tell family. Scammers count on embarrassment to keep people quiet.

WHAT THIS DOES FOR YOU

### What this does for you

Knowing the common tricks lets you slow down, say no, and hire the right person for the job.

PART 8

# When to Call Bill & Your Cheat-Sheet

An honest word about what I can help with (and what needs an electrician), and a one-page summary to keep with your generator.

CHAPTER 24

# When to Call Bill

I've written this guide so you can handle most generator questions on your own. But part of being helpful is being honest about where I fit, and where I don't.

## What I can help with

- **Talking through the choice**: battery, portable, inverter or standby, using your must-run list (Chapter 5).
- **Setting up the generator app**, connecting the generator to Wi-Fi, and making sure alerts reach your phone, or a family member's phone (Chapter 19).
- **Fixing Wi-Fi that won't reach** the generator at the side of the house.
- **Battery backups and power stations** for the modem, router, phone and CPAP, so the important electronics ride through the switchover.
- **Smart CO and smoke alarms** and utility outage alerts on your phone.
- **Reading quotes and manuals with you**, so you know what questions to ask the electrician.

## What I don't do

I'm not an electrician, and I don't install generators, transfer switches, interlocks or inlets, or work on gas lines. That work belongs to a **licensed electrician** and qualified gas contractor, with permits and inspection. I'll always tell you honestly when something is their job, not mine.

## What working with me is like

I work at your pace: no rushing, no talking down, no jargon. I explain what I'm doing in plain words, and I'll tell you honestly when something isn't worth the money. Home visits are here in Portage County, Ohio; remote help reaches you wherever you are. I've been doing this work for more than 30 years.

FROM BILL

### How to reach me

Call **(330) 200-8042**, or book a time at **billshometech.com/book**. My help is **$49 remote · $99 in your home**. This guide is free to read and share.

GOOD TO KNOW

### You may be greeted by Sophie

When you call or visit billshometech.com, you might first meet **Sophie**, my AI receptionist. She can answer quick questions and help you book a time. The actual help always comes from me.

Stay safe, stay warm, and keep that generator 20 feet out.

***— Bill***

CHAPTER 25

# Your Generator Cheat-Sheet

Keep a copy of this page with your generator, and one by the phone. The whole guide, boiled down.

## The safety essentials

| Topic | Rule |
|---|---|
| **Where it runs** | Outdoors only, **20+ feet** from the house, exhaust pointed away from windows, doors, vents |
| **Never** | Inside, garage, basement, shed, porch or carport, even with doors open |
| **CO alarms** | On every level and outside sleeping areas; test monthly |
| **CO alarm sounds** | Everyone outside, then call **911** |
| **Connecting to the house** | Only through a transfer switch installed by a **licensed electrician**; never a wall outlet |
| **Refueling** | Off, cooled down, outdoors, no spills |
| **Cords** | Outdoor-rated, grounded three-prong, heavy duty, undamaged |

## Write it down once

| Keep handy | |
|---|---|
| **Generator brand & model** | _____ |
| **Serial number** | _____ |
| **Running watts / starting watts** | _____ / _____ |
| **Fuel & oil type** | _____ |
| **Running spot (20+ feet out)** | _____ |
| **Installing electrician & license no.** | _____ |
| **Service dealer & phone** | _____ |
| **Last service date** | _____ |
| **Utility account number** | _____ |

## When something's wrong, in order

1. CO alarm, headache or dizziness: **get outside** and call 911.
2. Power line down: stay far away and call 911.
3. Power out: report it to your utility, then decide whether you need the generator.
4. Portable won't start: switch on, fuel valve open, fresh fuel, oil level, choke, nothing plugged in (Chapter 22).
5. Standby shows a warning: write down the message, check the app, call your dealer.
6. Anything electrical, scorched, humming or hot at the panel or transfer switch: call the licensed electrician.
7. App or Wi-Fi trouble: call Bill at **(330) 200-8042**.