BILL'S HOME TECH

Home & Small Business Tech Solutions

An Extended Guide · No. 1696

# What It Really Takes to Run a Well Pump on Backup

The honest overview,
before you spend a dollar

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**! 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. The most common way to bring your water back in an outage is a generator running outside the house — so this warning comes first, because the very machine that saves your water has to live outdoors, well away from the house, every single time you run it.

# What it really takes — the honest overview

Before you spend a single dollar, it helps to see the whole picture at once: what it actually takes to run a well pump on backup power, laid out plainly, with no surprises waiting for you later.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. Backing up a well pump comes up in a great many of my rural visits, and folks are often surprised by what it involves — and, just as often, relieved to find it is very doable once it is broken into plain steps.

Think of this guide as the map. It does not teach every detail itself — the sizing math, the wiring, and the fine print each have their own guide. What it does is show you the four things every well-pump backup needs, honestly, so you know what you are getting into before you start comparing machines.

Here is the short version of the whole thing: it takes 240-volt power, room for a big starting surge, a safe and legal hookup, and real numbers instead of guesses — plus the right kind of backup source and a test before you ever need it. We will walk through each one.

**★ Rather just talk it through first?**

There is no silly question, and a phone call costs you nothing. Call or text me at (330) 200-8042 and we can talk through your well and your home before you spend a dime — no obligation, no sales pitch.

# The whole guide, in about a minute

If you remember only these things, you already understand what running a well pump on backup power really takes.

- ❑ Most well pumps run on 240 volts, so your backup source needs true 240-volt output — not just a standard outlet.
- ❑ A well pump needs a big jolt to start, often around three times its running power — your setup has to have room for that surge.
- ❑ The hookup must be safe and legal — a transfer switch or interlock at the panel, installed by a licensed electrician.
- ❑ You need your pump's real numbers, from its nameplate or your well company — never a guess.
- ❑ You need the right-size source — big enough for the pump, but not the biggest machine on the lot.
- ❑ And you need to test the whole thing on a calm day, long before an actual outage.

> **! The worst time to find out is during the outage**
> Every one of these is easy to sort out on a quiet afternoon. Leave them to the day of the storm, and a small gap becomes a real problem. This guide is how you get ahead of it.

# The four things every well-pump backup needs

Strip away the details and every well-pump backup plan comes down to the same four requirements. Miss one, and the plan will let you down at the worst possible moment.

- **1. 240-volt power.** Most well pumps are wired for 240 volts, so your backup source has to deliver it.
- **2. Surge headroom.** The pump asks for a big jolt to start — often around three times its running power — and your setup must have room to spare for it.
- **3. A safe, legal hookup.** A transfer switch or interlock at your panel, installed by a licensed electrician — never a cord.
- **4. Real numbers.** Your pump's actual details, from its nameplate or your well company, so the whole plan is built on fact, not a guess.

The rest of this guide takes these one at a time, then shows which backup sources can meet all four, what it does not take, and how the pieces fit into a calm plan and a budget. Each requirement also has a deeper guide of its own, which I will point you to as we go.

> **✔ Four for four, or it will not work**
> These are not a wish list to pick from — they are four boxes that all have to be checked. The good news is that each one is straightforward once you know it is there.

# Requirement 1 — true 240-volt power

The first requirement rules out a lot of smaller machines right away, so it is worth understanding up front.

Most modern home wells use a submersible pump — the motor sits down in the well, out of sight — and it is almost always wired for 240 volts on its own dedicated circuit, straight from your panel. (Some small shallow-well pumps run on 120 volts, but the 240-volt submersible is by far the most common out here. Our guide on how a well pump works explains the difference.)

What that means for backup is simple: your source has to actually produce 240 volts. On a portable generator, that means a true 240-volt outlet — not just the ordinary household-style outlets on the front. Plenty of smaller, quieter units only offer 120 volts, and those cannot run a 240-volt pump at all.

> **✔ Look for a 240-volt outlet**
> When you look at a generator, look for a larger, round 240-volt outlet, usually noted on the spec sheet. If a unit only has the familiar flat household outlets, it is not a candidate for a 240-volt well pump, no matter how powerful it sounds.

# Requirement 2 — room for the big starting surge

This is the requirement people underestimate most, and it is usually the one that decides how big a machine you need.

Like any motor, a well pump needs a brief, much larger jolt of power to start than it uses once it is running — it has to overcome the weight and pressure of standing water. That surge is often around three times the pump's steady running power, for just a second or two, before it settles down.

So your backup source cannot simply match the pump's running draw — it has to have real headroom on top, enough to cover that surge with room to spare. Size right to the edge and the pump may hum, strain, or refuse to start, and repeated failed starts are hard on the motor. Our guide on the startup surge and soft starters goes into exactly why the surge is so large and how to plan for it.

> **! This is not the place to guess low**
> Of everything on a rural must-run list, the well pump is the one most worth sizing generously for. An undersized source and a straining pump motor is a bad combination for both machines.

# Requirement 3 — a safe, legal hookup

A well pump is hardwired at 240 volts, with no plug to reach. That single fact decides how it must be connected.

Because there is no plug, you cannot feed a well pump with an extension cord the way you would a fridge. The safe, legal path is a transfer switch or an interlock kit at your panel, installed by a licensed electrician — usually with a permit and inspection. A transfer switch is the cleanest option; an interlock is a lower-cost, code-approved alternative. Either one keeps your generator's power fully separated from the utility's lines, which is what the code (NEC 702.5) requires.

This guide only gives you the shape of it. Our guide on connecting backup power walks through transfer switches versus interlocks in full — what each asks of you in convenience and cost, and why the choice is worth making with your electrician rather than guessing.

> **! Never a suicide cord, never a backfeed**
> Do not let anyone talk you into a so-called 'suicide cord' (male-to-male) or backfeeding through a dryer or range outlet. It can put deadly voltage on the power lines outside and kill a lineman working to restore your power, and it exposes live prongs. It is unsafe, against code, and never worth it — this is licensed-electrician territory, every single time.

# Requirement 4 — real numbers, not guesses

The whole plan is built on one thing: knowing your pump's actual numbers. Guess here, and every step after it is a guess too.

Every pump has real, specific numbers. Look for a small metal nameplate on the pump's control box or the pressure-tank setup, or in any paperwork from when the well was drilled or the pump was last replaced. It should list the pump's horsepower, and often its voltage and running amps.

No luck finding a tag? Call the company that drilled or services your well and ask — they usually have your pump's details on file. A licensed electrician can also confirm them when they come to install your hookup. Once you have those numbers, our sizing guide walks through turning them into the right-size source, step by step — that is the math this guide deliberately leaves to it.

> **★ I don't guess, and neither should you**
> I will never hand you a made-up number for your pump. Bring me whatever you find — a nameplate photo, a horsepower figure, or just your well company's name — and I will help you make sense of it, honestly. Call or text (330) 200-8042.

# Which backup sources can actually do it

Not every kind of backup power can run a well pump. Here is the honest answer for each, before you fall for a tempting ad.

| Backup source | The honest answer |
|---|---|
| Portable generator | Yes — with a 240-volt outlet, surge headroom, and a proper hookup. |
| Standby generator | Yes — a permanent, automatic unit, sized and wired for the home. |
| Power station (battery box) | Usually not — most are 120-volt only and lack the surge. |
| Whole-home battery | Depends — it must be verified against your pump's real surge. |

Each of these has a guide of its own, so you can dig into the one that fits you: our guide on running a well pump with a portable generator, our standby-generator guide, our guide on power stations and batteries, and our whole-home battery guide. I do not sell any of them, so what you get from me is just honest advice.

> **! Be careful with battery claims**
> A battery or power station that promises to run 'any appliance' may still fall short on a 240-volt pump's big surge. Never take a claim on faith — verify it against your pump's real numbers first.

# What it does not take

Just as important as what you need is what you don't — because a lot of worry, and a lot of spending, comes from aiming too high.

It does not take the biggest, loudest machine on the lot. Once a source clears the pump's surge with a comfortable cushion and covers the other things you want running, more capacity past that mostly means more money, more fuel, and more noise for no real gain.

It also does not take a degree in electrical work, a fortune, or doing it all at once. It takes the right-size source for your pump, a proper hookup by a pro, and a little planning. Right-sized with a sensible cushion beats oversized every time.

> **✔ Aim for right-sized, not biggest**
> The goal is a source comfortably matched to your pump and your must-run list, with headroom for the surge — not the largest machine a salesperson can point you toward.

# Two kinds of homes, two sets of needs

This guide is written for well-water homes, but it is worth being clear about who needs all four requirements and who does not.

## If you live in town or the suburbs

If your water comes from the city or a municipal system, a power outage does not touch your water at all — so none of these four requirements apply to your water supply. Your backup planning can focus on the fridge, the furnace, lights, and comfort instead, which is usually a simpler and smaller job.

- No pump to run means no 240-volt requirement and no big surge to plan around for your water.
- A smaller, simpler generator, or even a battery, often covers comfort loads — see our sizing guide.
- You still want a safe, legal hookup for whatever you do power — that rule never changes.
- Some older or larger suburban lots have a private well too, so check a water bill if you are unsure.

## If you are out in the country on a well

If your water comes from a private well, all four requirements apply, and the well pump usually sets the whole plan — it is the biggest, most particular load out here.

- The pump's 240 volts and big surge decide the size class of your backup source more than anything else.
- A transfer switch or interlock by a licensed electrician is the only safe way to feed it.
- Get the pump's real numbers first — our sizing guide turns them into the right-size source.
- Rural outages often run longer, so keep stored water on hand as a backstop — see our storing-water guide.

> **★ Not sure how this applies to your home?**
> Tell me whether you are on a well or city water, and a little about your home, and we will sort out exactly which of these you need. Call or text (330) 200-8042.

# The role of soft starters

There is one honest tool that can lower the bar — sometimes enough to let a smaller source run a pump it otherwise could not.

A soft starter is a small device a pro wires into the pump's circuit. Instead of letting the motor slam to full speed all at once, it ramps it up gently — which can substantially cut that big starting surge. With the surge tamed, a somewhat smaller generator or, in some cases, a battery may be able to start a pump that would otherwise be out of reach.

It is not a cure-all, though. A soft starter reduces the surge; it does not erase the pump's running load, and it has to be matched to your specific pump by a professional. Whether it is worth it depends on your pump and your plans — our guide on the startup surge and soft starters covers when it helps and when it does not.

> **✔ Worth asking about — not a magic wand**
> If a smaller or quieter source is important to you, a soft starter is well worth raising with your well professional or electrician. Just go in knowing it lowers the bar rather than removing it.

# A realistic budget picture, in plain terms

I won't quote you dollar figures — prices change and every home is different — but I can show you honestly where the money goes, so nothing catches you off guard.

A well-pump backup is really three costs, not one. There is the machine itself — the generator, standby unit, or battery. There is the hookup — the transfer switch or interlock and the licensed electrician's labor to install it. And there are the accessories — things like proper cords, a cover, or fuel storage, depending on your setup.

People often budget for the machine and forget the hookup, which is a real and necessary cost done by a licensed electrician. I will never guess that figure for you — I will line you up with a trustworthy local electrician who can quote it properly for your panel.

> **★ You can build it in stages**
> You do not have to buy everything at once. Many families sort out the pump's numbers and the hookup plan first, then add the machine when the budget is ready. Call me at (330) 200-8042 and we will map out a sensible order for your home.

# What living with a portable setup actually looks like

A portable generator is the most common choice out here, so it helps to picture the real routine before you commit to it.

When the power goes out, a portable setup asks something of you. You head outside — often in the weather — to place and start the generator well away from the house, let it settle, then switch your panel over at the transfer switch or interlock. From there you choose which loads to run, and you top up the fuel every so often until the power returns.

None of that is hard, but it is hands-on, and it repeats for as long as the outage lasts. If bending, lifting, or going out in the cold is difficult, that is worth weighing honestly — it is one of the real trade-offs between a portable unit and an automatic standby one, which we compare on the next page.

> **✔ Practice the routine in daylight**
> The time to learn the steps is a calm afternoon, not a dark and stormy night. Running through it once, unhurried, makes the real thing far less stressful — and our testing guide walks you through it.

# Setting honest expectations

A backup setup keeps your water going through an outage — but it helps to be realistic about what that looks like day to day.

A portable generator means hands-on work and taking turns: because your pressure tank stores a reserve of water under pressure, you can run the pump for a while to fill it, then switch the generator's attention to the fridge or furnace, rather than running everything at once. Our pressure-tank guide explains how to make the most of that cushion.

A standby generator is the other end of the scale — permanent, automatic, and sized to carry the home without you lifting a finger, for a higher up-front cost. Neither is right or wrong; it is a trade-off between effort and expense, and our portable-generator and standby-generator guides lay out both honestly.

> **✔ Keep stored water underneath it all**
> Even the best setup deserves a backstop. Keep a few days of stored drinking water on hand in case fuel runs low or something needs a repair mid-outage — our storing-water guide covers how much and how.

# The safety non-negotiables

Almost everything about a well-pump backup is flexible. These three things are not.

- **Run any generator outdoors only.** Its exhaust carries carbon monoxide, an invisible gas that can kill in minutes — never in a garage, shed, or porch, even with a door open.
- **Never backfeed.** No suicide cords, and no feeding power through a dryer or range outlet — it can kill a lineman and start a fire.
- **Leave the 240-volt work to a pro.** The panel hookup is a licensed electrician's job, every time — not a weekend project.

These are not Bill being overly cautious — they are the hard-won rules that safety agencies like the CPSC stress every storm season. A newer generator that meets the PGMA G300 or UL 2201 safety standard will shut itself off if carbon monoxide builds up, which is a feature well worth looking for — but it never replaces running the machine outside.

> **! When in doubt, choose the safe path**
> If a shortcut ever feels tempting — to save time, money, or a trip outside — stop and call a professional instead. No amount of convenience is worth a life. And if an alarm ever sounds, get everyone into fresh air first and ask questions later.

# A simple readiness checklist

Work through this once, calmly, and you will know exactly where you stand — and what is left to do.

- ❑ I know my pump's real numbers, from its nameplate or my well company.
- ❑ My backup source has true 240-volt output and comfortable surge headroom.
- ❑ A licensed electrician has installed a transfer switch or interlock at my panel.
- ❑ I have picked a source that fits my pump and must-run list — right-sized, not oversized.
- ❑ I have tested the whole setup before an actual outage.
- ❑ I keep a few days of stored drinking water on hand as a backstop.

> **★ Missing a few boxes? That is normal**
> Most folks start this list with two or three boxes checked, not all six. Call or text me at (330) 200-8042 and we will work through the rest, one piece at a time.

# What I help with — and what the pros handle

I want to be plain about my role, because honesty is the whole point of these guides.

- **What I do:** help you understand your setup, get your pump's numbers together, choose a right-size source, line up the right pros, and be there for the first test — all at your pace.
- **A licensed electrician does** the panel work — the transfer switch or interlock, and anything 240-volt. That is their trade, and it usually needs a permit and inspection.
- **A well or pump professional does** the pump, the pressure tank, and any soft starter — and can tell you your pump's real numbers.

I am a tech helper with 30-plus years of patient experience, not a licensed electrician, plumber, or well contractor — and I will never pretend otherwise. What I am is the person who helps you make sense of it all and coordinates the folks who do the licensed work. Our guide on choosing the right pros goes deeper.

> **★ One friendly point of contact**
> Think of me as the person in your corner who helps you ask the right questions and lines up the right pros. Call or text (330) 200-8042.

# Questions to ask before you buy

A few good questions now save a great deal of regret later. Ask these before any money changes hands.

**Q: What are my well pump's real numbers?**
Get its horsepower, voltage, and running amps from the nameplate or your well company before you shop for anything — everything else depends on them.

**Q: Does this source truly put out 240 volts, with room for the surge?**
Confirm a real 240-volt outlet and generous headroom above the pump's surge — not just enough to match its running draw.

**Q: What will the hookup cost, installed by a licensed electrician?**
The machine is only part of the bill. Ask an electrician to quote the transfer switch or interlock and the labor for your panel.

**Q: Could a soft starter let me use a smaller source?**
Ask your well professional — sometimes it can lower the bar enough to matter, though it is not a cure-all.

> **✔ Write the answers down**
> Keep the answers with your other home papers, alongside any manuals. Future-you, mid-outage, will be very glad you did.

# Common Questions

The questions I hear most from folks weighing a well-pump backup, answered plainly.

**Q: Can a small, quiet generator run my well pump?**
Almost never — most small units are 120-volt only and lack the surge a 240-volt pump needs. This is usually a job for a larger generator, or a smaller one paired with a soft starter.

**Q: Do I really need an electrician, or can I do the hookup myself?**
You really do need one. A well pump is hardwired at 240 volts; the transfer switch or interlock is a licensed electrician's job, every time — never a cord or a backfeed.

**Q: How do I find my pump's numbers without digging through paperwork?**
Call the company that drilled or services your well — they usually have your pump's details on file, even if you cannot find a nameplate.

**Q: Is a battery or power station enough on its own?**
Usually not for a 240-volt pump — most lack the surge, and a pump can drain a small battery fast. A shallow-well 120-volt pump is a better candidate, but always verify first.

> **★ Still working it out? That is what I am here for**
> There is no silly question. Call or text me at (330) 200-8042 and we will talk through your well and your options, with no obligation.

# The most common wrong turns

Most well-pump backup regret comes down to a handful of avoidable slip-ups. Here they are, briefly, so you can steer clear.

- **Guessing the pump's numbers** instead of checking the nameplate or asking the well company.
- **Buying for the running watts only** and forgetting the big starting surge.
- **Assuming a small 120-volt unit will do it** — most cannot run a 240-volt pump at all.
- **Trying to use a cord or backfeed** instead of a proper electrician-installed hookup.
- **Never testing the setup** until the day of a real outage.

Our common-mistakes guide covers each of these in detail. The good news is that every one is easy to avoid once you know it is coming — and this whole guide has been quietly steering you around them.

> **! The pump is not the place to cut corners**
> Water is too important out here to leave to guesswork. Get real numbers, size with headroom, and have the hookup done by a licensed electrician — the rest falls into place.

# Bringing it all together — the four, in order

If this guide did its job, the path ahead feels clear. Here are the four requirements again, in the order to tackle them.

- ❑ **First, real numbers.** Get your pump's details from its nameplate or well company — everything else builds on them.
- ❑ **Then, size with surge headroom.** Match the pump's running draw plus its big surge, with a cushion — our sizing guide shows how.
- ❑ **Then, a safe 240-volt hookup.** A licensed electrician fits a transfer switch or interlock — see our guide on connecting backup power.
- ❑ **Finally, test it.** Try the whole thing on a calm day, long before you need it — our testing guide walks you through it.

None of this requires guessing at a number or cutting a corner. It takes a little homework up front, the right pros for the licensed work, and then a setup you can trust the next time the power goes out.

> **★ Let's plan your water, together**
> Backing up a well pump is exactly the kind of project I love helping rural families with. Call or text me at (330) 200-8042, and let's make sure the water keeps flowing.

# 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 backing up your well pump 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

# Four Things a Well-Pump Backup Needs

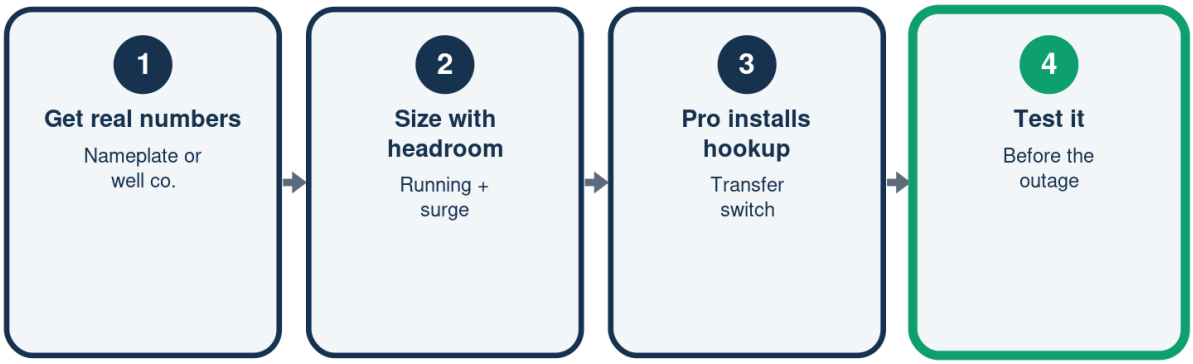
The honest requirements

| | What it needs | Why |
|---|---|---|
| **240-volt power** | Most pumps | are 240V |
| **Surge headroom** | Starts hard, | often ~3x |
| **A safe hookup** | Transfer switch, | electrician |
| **Real numbers** | Nameplate or | well company |

Miss one and the plan won't work when you need it.

## The Honest Path, in Order

Do these in this order




In order, the day of the outage holds no surprises.

# Can This Source Run a Well Pump?

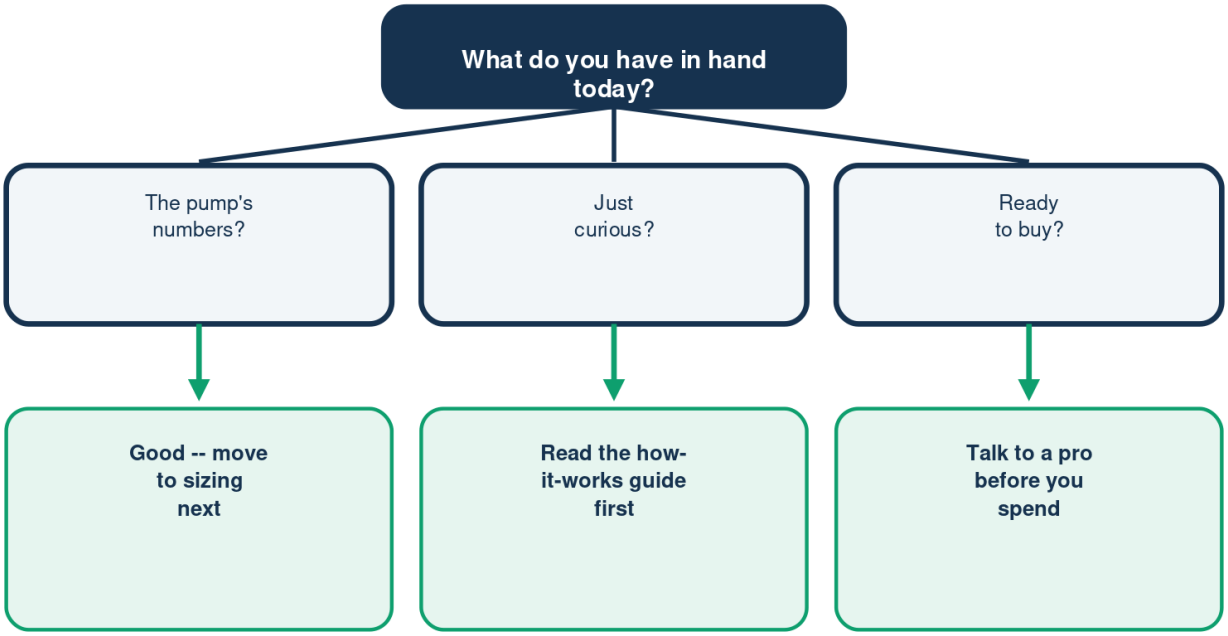
An honest answer for each

| | Source | Honest answer |
|---|---|---|
| **Portable generator** | Yes -- right unit | and a hookup |
| **Standby generator** | Yes -- automatic | |
| **Power station** | Usually not | 240V + surge |
| **Whole-home battery** | Depends -- | verify |

Verify any battery claim against your pump's real surge.

## Where Do You Start?

Meet yourself where you are




Never guess the pump's numbers -- everything else builds on them.

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

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# 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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If you are not 100% happy with a visit, I will make it right -- or refund it. No awkwardness, no fine print. That is how I would want to be treated.

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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.

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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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