



An Extended Guide · No. 1597

A Simple Load-Planning Worksheet

A fill-in-the-blanks
page for your own numbers

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! Read this first — size for safety, not just comfort

Getting the size right is not only about comfort — it is about safety, too. An undersized unit gets overloaded and pushed harder than it should be: it runs hot, it strains, and a motor that can't get the surge it needs can hum, overheat, and be damaged. So take the size seriously and always leave yourself a margin — a little extra room — rather than sizing right to the edge. And one safety rule never changes: any fuel-burning generator gives off carbon monoxide, an invisible, deadly gas, so it runs **OUTDOORS ONLY**, well away from the house (the safety agencies say at least 20 feet), never in a garage or on a porch even with the door open. A battery or power station makes no exhaust and is safe to use indoors. This worksheet is where your safety margin gets written down — fill it in honestly and the number you shop with already has a little breathing room built in.

One page, filled in at your kitchen table

Sizing backup power comes down to a short list of your own numbers, added up in order. This guide hands you a simple worksheet to do exactly that — no math degree, no guessing, just a few blanks to fill in from the labels on your own appliances.

I'm Bill. Folks tell me the whole watts business feels overwhelming until they see it as a single page with a few lines on it. That's really all it is: write down each thing you'd want running, look up its numbers, and add them the right way. Do it once, keep the page, and you're set.

This guide is the hands-on companion to the rest of the sizing series. Our running-watts-versus-starting-watts guide explains the two numbers you'll be writing down, and our guide on reading a nameplate shows you exactly where to find them. Here, we just put pencil to paper.

★ Rather fill it in together?

Print the worksheet on the next few pages, jot down what you can, and call or text me at (330) 200-8042. We'll finish it side by side — free, with nothing to sell you.

The whole method, on one page

If you remember only this page, you already know how the worksheet works.

- ❑ List every thing you'd want running during an outage — one line each.
- ❑ Look up each item's running watts from its nameplate, and note whether it has a motor.
- ❑ For anything with a motor, jot its starting (surge) watts too.
- ❑ Add up the whole running-watts column — that's your steady total.
- ❑ Find the single biggest surge and add just that one on top.
- ❑ Add a comfortable margin, and you have the number to shop with.

✓ It's addition, done in order

There's no tricky math here — just a column to add up, one surge to pick out, and a little cushion on top. Take it one line at a time and it stays calm.

Why a worksheet beats doing it in your head

You could try to hold all this in your head. A single sheet of paper does it better, and gives you something to keep.

Writing each item on its own line keeps you from double-counting, forgetting the freezer out in the garage, or losing track of which things have a motor. It also turns a vague worry — 'will it be big enough?' — into a concrete number you can trust and double-check.

Best of all, the filled-in page becomes a record. Tape it inside a cupboard door or tuck it in with your home papers, and next time the question comes up — a new appliance, a longer outage, a salesperson's pitch — you're not starting from scratch.

✓ Pencil, not pen

Appliances come and go, and you may want to try a few different lists — essentials only, or essentials plus a few comforts. Pencil lets you adjust without starting the page over.

Step one: gather your numbers before you sit down

The worksheet fills itself in quickly once you have the numbers in hand. So gather them first, in one lap around the house.

Take your phone and photograph the little label — the nameplate — on each thing you'd want to run: the fridge, the freezer, the furnace or boiler, the well or sump pump, and so on. It's usually on the back, the bottom, or inside a door. Our guide on reading a nameplate shows you where each one hides and what the markings mean.

Having the photos means you can sit down comfortably and read them off one at a time, rather than crouching behind the fridge with a pencil. If a label lists only volts and amps, don't worry — multiplying the two gives you the watts, and that's the only arithmetic this asks of you.

★ Send me the photos

If the labels are faded, cramped, or confusing, snap them anyway and text them to me at (330) 200-8042. Reading nameplates is one of my favorite things to help with — and it's free.

The four columns, and what each one means

The worksheet has just four columns. Here's what goes in each, so no blank feels mysterious.

- **Item:** the name of the thing you'd want running — one per line.
- **Running watts:** the steady power it draws once it's going, straight off the nameplate (or volts times amps).
- **Has a motor?:** a simple yes or no. If it moves air, water, or parts, the answer is yes.
- **Starting watts (if so):** only for the motors — the brief surge it needs to get going, often several times its running watts.

That's the whole form. The first two columns you fill in for everything; the last two matter only for things with a motor. Our running-watts-versus-starting-watts guide goes deeper on why those two numbers differ so much.

✓ Leave the surge blank for lights and heaters

A lamp, a charger, a space heater, a television — no motor, no surge. Fill in their running watts and write 'n/a' in the motor and starting columns. The surge conversation is really about motors.

The worksheet — copy this onto paper

Here's the page itself. Copy it onto a sheet of paper, or print this one, and fill in the blanks from your nameplates.

Item	Running watts	Has a motor?	Starting watts (if so)
Refrigerator	_____	_____	_____
Freezer	_____	_____	_____
Furnace or boiler blower	_____	_____	_____
Well or sump pump	_____	_____	_____
Lights (total)	_____	n/a	n/a
Phones, TV, internet	_____	n/a	n/a

Add your own lines for anything else on your must-run list — a medical device, a window air conditioner, a garage freezer. Our must-run list guide helps you decide what earns a spot in the first place.

✓ **Add blank lines for your own extras**

Every home is different. If it matters to you during an outage, give it a line — you can always cross it off later if the total climbs higher than you'd like.

Filling in a single row, start to finish

Let's walk one line across the page so all the rest feel easy.

Take the refrigerator. Find its running watts on the nameplate and write them in the second column. Then ask: does it have a motor? A fridge has a compressor, so yes — write 'yes' in the third column. Because it has a motor, it surges, so find its starting figure (you may see a starting or 'LRA' marking) and write that in the fourth column.

Now the lights. Write your best total for the bulbs you'd keep on. Do they have a motor? No — so write 'n/a' in the last two columns and move on. That's the whole rhythm: two columns for everything, four columns only for the motors.

! Don't leave a motor's surge blank

The one box you must not skip is a motor's starting watts. That surge is what trips up most sizing, and a blank there is how folks end up with a unit that will run the fridge but can't start it.

Adding it up, part one: the running column

With the rows filled in, the tally is three small steps. Here's the first.

Add up the entire running-watts column — every line, motors and non-motors alike. This total is the steady power your unit has to supply the whole time everything on your list is running at once. Write it at the bottom of the column and label it your running total.

This is usually the pleasant surprise: the steady total is often more modest than folks feared. It's the surge, coming up next, that does the heavy lifting in sizing — not the steady draw.

✓ Only count what runs at the same time

If two things would never be on together, you can add only the larger of the two to your running total. But when in doubt, add both — a slightly generous total is the safe direction to be wrong in.

Adding it up, part two: the single biggest surge

This is the step that keeps your number sensible instead of sky-high.

Look down your starting-watts column — the motors only. Find the single largest surge among them, and set the others aside. You add only that one biggest surge on top of your running total, not every motor's surge stacked together.

Why just one? Because motors almost never start at the very same instant. You switch things on one at a time, and each motor kicks in when it happens to need to. Our running-watts-versus-starting-watts guide explains this in full — for the worksheet, just circle the biggest surge.

✓ Circle the winner

Draw a circle around the largest number in your starting column. On most rural lists it's the well pump; in town it's often the fridge or an air conditioner. That circled number is the only surge you carry forward.

Adding it up, part three: your margin and your number

Two numbers become one, plus a cushion, and you're done.

Add your circled surge to your running total. That sum is the raw number your unit has to clear. Now add a comfortable margin on top — a little extra room so nothing runs right at the edge. The result is the number you carry into the store or the conversation with me.

How much margin? Enough that a stray lamp or a second motor cycling on doesn't push you over the top. Our guide on margin and headroom explains just how much cushion is sensible — generous, but not so much that you overpay for a giant machine you'll never fully load.

★ That final number is what we shop with

Once you have it, our guide on sizing a portable generator helps match it to a size class. Or send me the finished worksheet at (330) 200-8042 and I'll help you turn your number into the right unit.

Two kinds of homes, two sets of needs

The blank worksheet fills in differently depending on where you live — and the rural version has one row that dominates the whole surge column: the well pump.

If you live in town or the suburbs

In town or the suburbs, your skeleton is short. City water keeps flowing no matter what the power does, so there's no pump to plan around, and your biggest surge is usually the fridge or a window air conditioner.

- Start with four lines: fridge, lights, the internet box, and the furnace blower.
- Only the fridge and blower are motors, so only they get a starting-watts figure.
- Your biggest surge is likely the fridge or the blower — circle whichever is larger.
- Add a few more lines only for what you'd truly want; keep the skeleton lean.

If you are out in the country on a well

Out on a well, your skeleton picks up two more lines — and one of them changes everything. A 240-volt well pump has a large starting surge, usually the single biggest number on the whole page, and no water flows without it.

- Add a well-pump row and a sump-pump row to the town skeleton.
- The well pump's surge almost always wins the 'biggest surge' circle — size around it.
- A 240-volt pump can't go on a plain cord; it needs an electrician's transfer switch and a unit with a 240-volt outlet.
- Get the pump's real numbers from its nameplate or your well company — never guess a pump.

★ The well-pump row is the one to get right

On a rural worksheet, the well pump usually decides the whole number. Tell me its nameplate or horsepower and your other rows, and I'll help you fill in that line with confidence. Call (330) 200-8042 — and see our well-pump sizing guide for the deep dive.

A full walk-through, no real numbers needed

Here's the whole worksheet in motion, using stand-in labels instead of made-up watts — because your real numbers come from your own plates.

Picture a filled-in page with a fridge, some lights, the internet box, and a furnace blower. You add every running figure down the column for your steady total. Then you look at the two motors — the fridge and the blower — compare their two surges, and circle the larger one.

You add that one circled surge to your running total, add a margin, and write the result at the bottom. Notice what you did not do: you did not stack both motors' surges together, and you did not need a single invented number to follow the steps. Swap in your own nameplate figures and the same page gives you your real answer.

✓ The logic works before the numbers do

If you can follow the steps with stand-in labels, you can follow them with your real figures. The worksheet is a recipe — your nameplates are just the ingredients.

Handling the rows that stump people

A few rows give folks pause. Here's what to do instead of guessing.

- **No nameplate you can find?** Check the manual or the maker's website with the model number, or ask the installer.
- **Not sure it has a motor?** If it moves air, water, or parts, treat it as a motor and give it a surge figure.
- **Only horsepower listed on a pump?** Don't convert it yourself — ask the well company or a pro for the numbers.
- **A 240-volt, hardwired load?** Write it down and flag it; that row brings a wiring question, covered next.

✓ A blank is a question, not a failure

Every stumped row is just a note to follow up on — a call to the maker, a text to me, a question for the well company. Leave it blank for now and keep moving down the page.

When a row means it's time for an electrician

Some rows can't be handled with a plug and a cord, no matter how the worksheet turns out.

Anything wired straight into your panel — a 240-volt well pump, central air, an electric water heater — can't simply plug into a generator. Those rows call for a transfer switch or interlock installed by a licensed electrician, and a unit with a 240-volt outlet and enough surge headroom to start them. Our guide on transfer-switch circuits explains how the count of backed-up circuits shapes your sizing.

I'm a tech helper, not a licensed electrician, so I don't do the panel work myself. What I do is help you build the worksheet, understand the numbers, and line up a trustworthy licensed electrician for the wiring — so it all comes together as one plan.

★ I'll coordinate the electrician

Once your worksheet flags a hardwired row, call or text me at (330) 200-8042. I'll help you plan the hookup and the size together, and bring in the licensed pro for the parts that need one.

Keep the page, and refresh it now and then

A worksheet is worth far more when it lives somewhere you can find it, and gets a look now and then.

Your must-run list shifts with the seasons — the furnace blower matters most in an Ohio January, a window air conditioner in July. It also shifts when you replace an appliance or add one. A quick glance twice a year keeps your number honest.

Store the filled-in page with your home papers, or photograph it so it's on your phone when you're standing in a store. Our must-run list guide has more on thinking through the seasonal must-haves versus the nice-to-haves.

✓ Date the page

Write the date in the corner when you fill it in. A year from now you'll know at a glance whether it still matches the appliances you actually own.

Common mistakes on the worksheet

A handful of slip-ups account for most worksheet trouble. Now you'll spot them coming.

- **Guessing a number** instead of reading the nameplate, on the hope that 'it's probably fine.'
- **Leaving a motor's surge blank**, then sizing only to the steady total.
- **Stacking every surge together** instead of circling just the single biggest one.
- **Forgetting a load** — the garage freezer, the sump pump, the medical device — because it wasn't in front of you.
- **Leaving off the margin**, so the number sits right at the edge with nothing in reserve.

! Guessing low is the costly mistake

An undersized number strains the motor that won't start and the unit straining to start it. When a figure won't come, leave extra margin rather than guess low — it's the safe direction to lean.

A quick self-check before you call it done

Run down these questions and you'll know your worksheet is ready to shop with.

- ☐ Does every thing I'd want running have its own line?
- ☐ Did I read each running-watts figure from a nameplate, not a guess?
- ☐ Did I mark every motor and give it a starting-watts figure?
- ☐ Did I add the whole running column, then circle just the biggest surge?
- ☐ Did I add a comfortable margin on top of the total?

✓ Any 'not sure' is fine

A blank or a question mark is not a problem — it's exactly the kind of thing I'm glad to walk through with you. Call or text me at (330) 200-8042 whenever you'd like a second set of eyes.

From a finished worksheet to the right machine

Your number is the bridge between this page and the machine that fits your home.

That final figure — running total plus the biggest surge plus a margin — is what each kind of unit has to clear. From here, our guides on sizing a portable generator, an inverter generator, a battery or power station, and a standby unit each help match your number to that kind of machine, so you're comparing against your real list rather than an ad.

If your worksheet sits right on the line between two sizes, or leans heavily on a hardwired 240-volt load, that's a good moment for a pro. Our guide on getting a professional load calculation explains when a licensed electrician should measure and confirm the numbers.

★ Bring me the finished page

The worksheet is the hard part, and you've done it. Send it my way at (330) 200-8042 and we'll turn your number into the right unit and the right hookup — free, with nothing to sell you.

Questions worth asking as you fill it in

Whether you're talking to a salesperson or to me, these keep the worksheet honest.

Q: Is this figure the running watts or the starting watts?

Always ask which one a number is. The running (or 'rated') watts go in the second column; a motor's larger starting figure goes in the fourth.

Q: Does this item really have a motor?

If it moves air, water, or parts — a fan, a compressor, a pump — yes. If it only makes heat or light, no. When unsure, treat it as a motor.

Q: Should I fill in one worksheet, or a few?

A few can help — one for bare essentials, one with a comfort or two added. Comparing the totals shows you what each extra load really costs in size.

Q: Do I size for today or for someday?

Fill it in for your real, current list plus a comfortable margin. If your needs grow later, that's a fresh line on the page, not a reason to overbuy now.

✓ There's no silly question

If a row or a number still feels murky, that's completely normal — call or text me at (330) 200-8042 and we'll fill it in together.

Common Questions

The worksheet questions I hear most, answered plainly.

Q: Do I have to know exact numbers, or are ballpark okay?

Use your own appliances' real numbers from their nameplates, not ballparks from an ad. The whole point of the worksheet is to replace guessing with your own figures.

Q: What if two motors might start at the same moment?

It's rare, but if you're worried — say a well pump and a furnace blower in a cold snap — add both surges instead of just the larger one, for extra peace of mind.

Q: The internet box and the TV — one line or two?

Either works. Group the small, steady electronics on one 'Phones, TV, internet' line with a combined running figure, or give them separate lines. Neither has a motor, so no surge to worry about.

Q: Can I just skip the worksheet and buy the biggest unit?

You can, but you'll likely overpay, and a big unit run lightly loaded all the time isn't good for it. A few minutes with the worksheet lands you on a sensible size instead.

★ Still filling it in?

Send me your list and your nameplate photos at (330) 200-8042 and we'll finish the worksheet and land on your number together, at your pace.

Bringing it all together

You now have the whole method on one page: list your loads, read the watts, add the running column, circle the biggest surge, add a margin.

That final number is the heart of load planning, and the worksheet is simply the calm, orderly way to reach it. Fill it in once, keep it somewhere handy, and refresh it when your appliances or your seasons change.

From here, our guide on reading a nameplate helps you fill each row, the running-watts-versus-starting-watts guide explains the two figures, and the guides on each kind of unit help you match your number to the right machine.

★ Let's fill it in together

If you'd rather talk it through than puzzle it out on paper, that's exactly what I'm here for. Call or text me at (330) 200-8042 with your list, and we'll make quick, calm sense of it — free, with nothing to sell you.

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 filling in a load-planning worksheet 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.

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The Worksheet's Four Columns

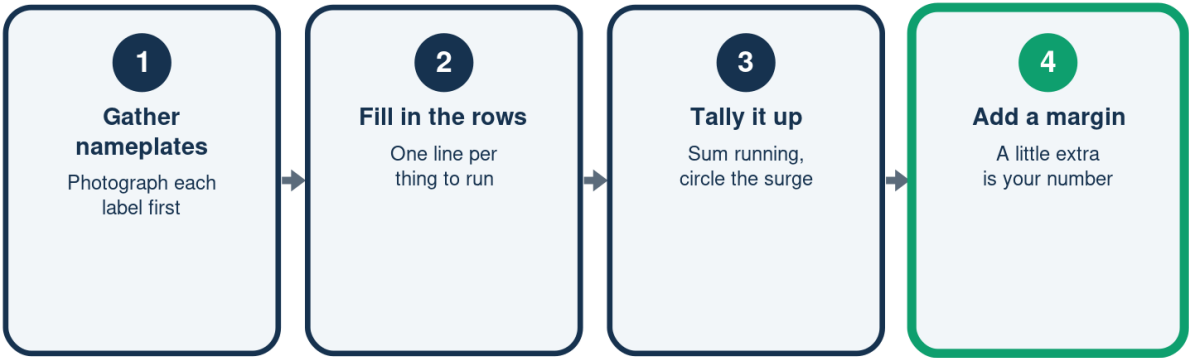
What goes in each blank, and where the number comes from

	What goes here	Where to find it
Item	A thing to run	Your must-run list
Running watts	Steady draw	The nameplate
Has a motor?	Does it move?	Yes or no
Starting watts	The surge	Plate or maker

Two columns for everything; the last two only for motors.

The Worksheet, Start to Finish

Gather, fill, tally, cushion



Do these in order and the arithmetic stays simple.

A Town Skeleton vs. a Rural One

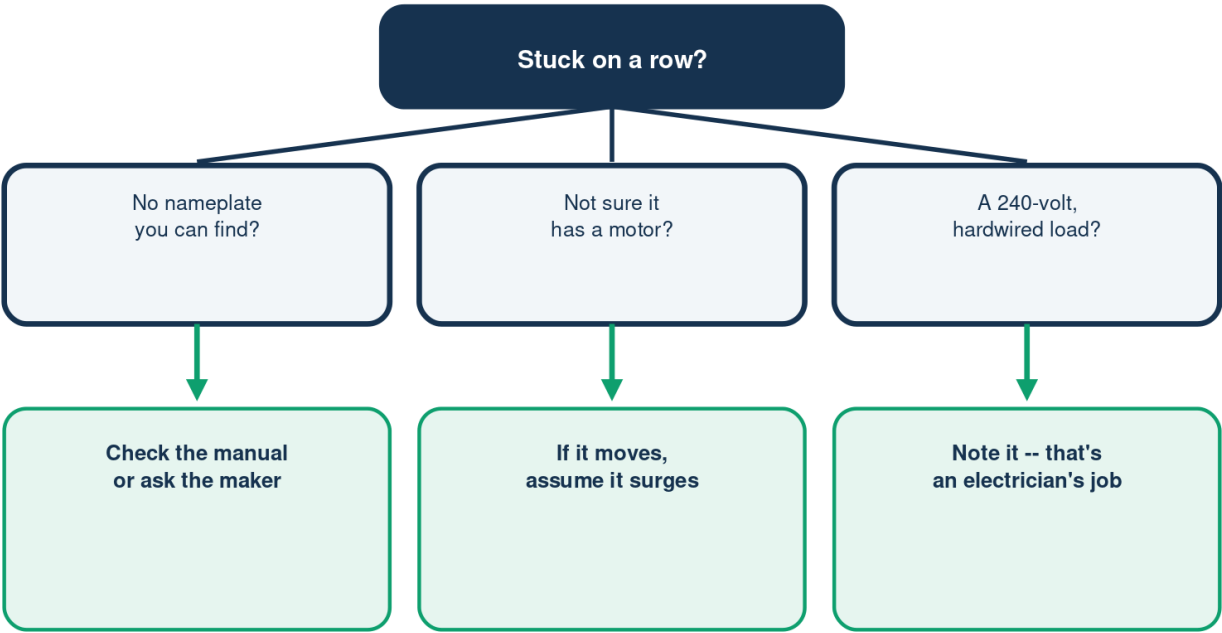
The same start, plus the rows that set a well home apart

	In town	On a well
Fridge, freezer	Yes	Yes
Lights, internet	Yes	Yes
Furnace blower	Yes	Yes
Well pump	Not needed	Yes -- big surge
Sump pump	Sometimes	Often yes

The well and sump rows are what set a rural number apart.

Stuck on a Worksheet Row?

What to do when a blank won't fill itself in



When a number won't come, leave extra margin -- guessing low is the costly mistake.

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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