



An Extended Guide · No. 1594

How to Read an Appliance Nameplate

Finding your real numbers
on the little label

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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. Reading your own nameplates is how you trade guesses for real numbers — and a unit sized from real numbers is a safe one, never quietly overloaded or strained.

The little label that holds your real numbers

Somewhere on every appliance — the back, the bottom, inside a door, on the motor — is a small label with the true numbers on it. Once you can find it and read it, sizing stops being guesswork.

I'm Bill. A worry I hear all the time is, 'I don't know what any of my appliances use.' That's completely normal, and the good news is you don't have to know it from memory. The appliance already knows, and it tells you right there on its nameplate.

This guide is a plain, patient tour of that little label: where it hides, what the markings mean, and how to turn them into the numbers you'll use to size a generator or battery. No math beyond a single multiplication — and I'll walk you through even that.

★ Can't find a label or read a marking?

Snap a photo of it and text it to me at (330) 200-8042. I'll help you find the nameplate and read the numbers off it — free, with nothing to sell you.

The whole idea, on one page

If you remember only this page, you can already read a nameplate well enough to size with confidence.

- ❑ The nameplate is a small label on the back, bottom, inside a door, or on the motor.
- ❑ Look for watts first — that's the running power, ready to use.
- ❑ No watts? Find volts and amps and multiply them together for the running watts.
- ❑ A motor may also show LRA (locked-rotor amps) or a starting figure — that's your surge clue.
- ❑ 120V is ordinary plug-in power; 240V is a big, hardwired load like a well pump.
- ❑ Photograph every label before you shop, and never guess a number.

✓ The one-sentence version

Find the label, read the watts (or multiply volts by amps), note whether it's a motor, and photograph it — do that for each thing on your list and you're ready to add them up.

What a nameplate is, and why it's the truth

Before we go hunting for it, it helps to know what you're looking at and why it beats every guess.

The nameplate is a small metal or plastic label the maker fixes to the appliance itself. Unlike an ad or a rule of thumb, it lists the real figures for that exact machine — the power it's built to draw. It's the one source that actually knows your appliance.

Just about anything that plugs in or wires in has one. A motor-driven thing sometimes has two labels: one for the appliance and one on the motor itself, which is where the surge clue often lives.

✓ The plate beats any rule of thumb

You may have seen charts that claim a 'typical' fridge or pump uses such and such. Yours may be quite different. When the plate and a chart disagree, believe the plate every time.

Where the label likes to hide

Half the battle is simply knowing where to look. Here's where each kind of appliance tends to keep its plate.

- **Refrigerator and freezer:** inside, on a side wall near the top, or on the back.
- **Furnace or boiler:** inside the access panel, and a second label right on the blower or circulator motor.
- **Window air conditioner:** on the side, the back, or behind the front filter.
- **Sump pump:** on the pump housing or its motor, sometimes on the cord tag.
- **Well pump:** the pump is down the well, so look at the well cap, the pressure tank, the control box, or the breaker.
- **Lamps, chargers, electronics:** a tiny label on the base, the underside, or the power brick.

✓ Bring a flashlight and your reading glasses

These labels are small and often in dim corners. A flashlight, a phone camera to zoom in, and a little patience beat squinting every time.

What the markings mean

A plate can look busy, but only a few markings matter for sizing. Here are the everyday ones.

Marking	What it means	What to do
W / watts	The steady running power	Use it directly
V / volts	The voltage it needs	Note 120V or 240V
A / amps	The current it draws	Multiply by the volts
Hz / hertz	The electrical frequency	Note it and move on

Watts, or volts and amps, give you the running number. The voltage tells you how it's wired. Hz (hertz) is the electrical frequency — in North America it's a standard value you don't size around, so you can note it and move on.

✓ **You need fewer numbers than the plate shows**

A crowded plate can be intimidating, but for sizing you only ever need a handful: the running power, the voltage, and — for a motor — the starting clue. The rest you can politely ignore.

The one bit of arithmetic: volts times amps

When a plate lists volts and amps but no watts, one small multiplication gives you the running number.

Watts are, near enough, the volts multiplied by the amps. So if the label shows the voltage it runs on and the amps it draws, multiply the two and you have that appliance's running watts. That's the only arithmetic this whole task asks of you.

It's an estimate, not a laboratory measurement, so round up rather than down when the numbers aren't tidy. A little extra here just feeds the comfortable margin you'll add at the end anyway.

✓ Keep the pair together

Always multiply the amps by the voltage printed on the same line. Mixing a 120-volt figure from one spot with a 240-volt figure from another is how a good number goes wrong.

When the amps get a little fussy

Motor plates in particular can list more than one current figure. Here's how to tell them apart.

You may see a running (or full-load) amp figure and a second, much larger starting or locked-rotor figure. Use the running one for your steady total, and treat the larger one as the clue to the surge — the brief jolt when the motor kicks on.

If a plate shows figures at more than one voltage, match each amp reading to its own voltage before you multiply. When it all starts to feel like a puzzle, that's a fine moment to photograph it and let me help you sort the running number from the surge.

✓ Bigger current figure equals the surge clue

A motor's largest listed current is almost always its starting gulp, not its steady draw. Our running-watts-vs-starting guide explains why that brief number matters so much for sizing.

Reading a motor's plate — the surge clue

Motors are the loads that surge, and their plates carry an extra number that warns you about it.

Look for **LRA** — locked-rotor amps — or a figure labeled starting or inrush. It's much larger than the running number and lasts only a second or two, at the instant the motor breaks free from a dead stop. That's your signal that this load needs surge headroom, not just steady power.

You don't have to do anything fancy with it here — just note that the motor surges and roughly how big the clue is. Our running-watts-vs-starting guide shows how you use only the single biggest surge across your whole list.

✓ If it has a motor, assume it surges

Even when a plate prints only one number, treat anything with a motor or compressor as a surging load. Assuming a surge that isn't there costs nothing; missing a real one causes trouble.

When the plate only shows horsepower

Some motors — older ones especially, and many well pumps — list horsepower (HP) instead of watts. Here's the safe way to handle that.

It's tempting to grab a horsepower-to-watts factor off the internet and multiply. Please don't. The real draw depends on the specific motor, its efficiency, and its starting behavior, so a generic factor can lead you well astray — usually toward undersizing.

Instead, ask the maker with the model number, or — for a well pump — ask your well company for the running and starting figures. When you can't get them, stay general and leave generous headroom rather than committing to a guessed number.

★ Horsepower-only plate? Let's get the real figures

Tell me the model number, or your well company's name, and I'll help you track down the running and starting numbers the honest way. Call or text me at (330) 200-8042.

What 120V and 240V tell you

The voltage on a plate does more than fill a blank — it tells you how the appliance connects, which shapes your whole plan.

Most everyday plug-in items — lamps, the fridge, a television, a window air conditioner — run on 120-volt power. The big loads often run on 240 volts: a well pump, central air, an electric water heater, an electric range or dryer.

That matters because a 240-volt load can't run off a plain extension cord. It needs a transfer switch or interlock at the panel, installed by a licensed electrician, and a unit with a 240-volt outlet. Our guides on transfer-switch circuits and on the well pump pick up that thread.

✓ Circle the voltage on every big load

For anything hardwired or heavy, write down whether it's 120V or 240V right next to its watts. That one note tells you and your electrician how it has to be connected.

Two kinds of homes, two sets of needs

Finding nameplates looks a little different depending on where you live — and out on a well, the single most important plate is also the hardest one to reach.

If you live in town or the suburbs

In town or a tighter suburban lot, the plates you need are the everyday ones, and they're mostly within easy reach. City water keeps flowing, so there's no pump plate to chase — your list is fridge, freezer, furnace blower, and maybe a window air conditioner.

- The fridge's plate is usually inside near the top; the freezer's is similar.
- The furnace blower's plate is inside the access panel, or on the motor itself.
- A window air conditioner lists its numbers on the side, the back, or behind the filter.
- Most of these show watts, or volts and amps you can multiply — easy wins for your list.

If you are out in the country on a well

Out in the country on a private well, the plate that matters most belongs to the well pump — and the pump is down the well, out of sight. Its numbers live at the surface, or with the company that installed it, and its starting surge is very likely your biggest number.

- Check the well cap, the pressure tank, and the pump's control box for a label or the original paperwork.
- The breaker for a 240-volt pump confirms the voltage — note it for the hookup and your electrician.
- No plate to be found? Ask your well company for the pump's horsepower and its running and starting figures.
- The pump's surge likely sets your whole size — our guide on sizing for a well pump goes deeper.

★ The well pump's numbers are worth chasing down

The hardest plate to find is usually the most important one. Tell me what you can see at the well cap, tank, or breaker — or your well company's name — and I'll help you get the pump's real figures. Call or text me at (330) 200-8042.

Photograph every label

Your phone turns nameplate-hunting from a chore you repeat into a job you do once.

As you find each plate, take a clear, close photo — steady the phone, turn on the flash, and zoom in afterward if the print is tiny. Gather them into one album or folder so they're all in a single place.

Why bother? Labels fade, spots are awkward, and a photo lets you, me, or a salesperson read the numbers later without you crawling behind the fridge a second time. It also captures the model number for anything you have to look up.

★ Text me the photos

Snap the nameplates on your must-run list and text them to me at (330) 200-8042. I'll read the two numbers off each one and help you line them up for the worksheet — free.

When a label is hard to reach or gone

Some plates are tucked behind heavy appliances, faded to nothing, or on equipment you shouldn't be opening. There's a safe way through.

When the plate is unreadable or missing, the manual and the maker's website — searched with the model number — usually list the same figures. For a well or septic pump, the installer's paperwork or the well company can fill the gap.

! Don't get hurt hunting for a number

Please don't drag a heavy fridge or range out on your own, open sealed or hardwired equipment, or reach into an electrical panel. A wattage isn't worth a strained back or a shock. Ask someone for a hand, or let a licensed pro get it safely.

As a last resort for anything wired in, a licensed electrician can measure the real draw with a clamp meter — often the surest answer when a plate is long gone.

Reading a busy plate, line by line

A motor plate can be crowded with markings. Here's the short list of what to actually grab.

- **The running power:** the watts, or the volts and amps you'll multiply.
- **The surge clue:** an LRA or starting figure, if the plate shows one.
- **The voltage:** 120V or 240V, especially for the big loads.
- **The model number:** handy for looking up anything the plate leaves out.
- **Everything else** — serial numbers, safety marks, phase, temperature ratings — you can pass over for sizing.

✓ Grab a few, ignore the rest

You're not decoding the whole plate, just harvesting three or four useful numbers. If you're unsure which is which, a photo lets us sort it out together.

Common misreadings to avoid

A few easy mix-ups trip people up. Now you'll spot them coming.

- Grabbing the starting or LRA figure as if it were the running number — they do different jobs.
- Multiplying amps by the wrong voltage instead of the one on the same line.
- Reading a generator's or battery's advertised peak instead of your appliance's own plate.
- Assuming a motor doesn't surge just because its plate prints only one number.
- Copying a figure from a similar model instead of your own — yours is the one that counts.

! When two readings disagree, go conservative

If a plate, a manual, and a website don't quite match, use the larger running figure and leave extra headroom. Sizing a touch high is a minor cost; sizing low strains the motor and the unit both.

Turning labels into a plan

Once you've read the plates, you're holding exactly what you need to add it all up.

For each item you now have a running number (watts, or volts times amps) and a note on whether it's a motor with a surge. That's the raw material for the whole calculation — nothing more to gather.

Our worksheet guide gives you a fill-in-the-blanks page to lay these out, and our running-watts-vs-starting guide shows how your running total and the single biggest surge come together into a size.

★ I'll help you add them up

Send me your photographed plates at (330) 200-8042 and we'll turn them into a running total and a surge number you can shop with — calmly, at your pace.

A quick nameplate self-check

Run through these before you close everything back up.

- ☐ Did I find a label — or the maker's figures — for every item on my list?
- ☐ Do I have watts, or volts and amps to multiply, for each one?
- ☐ Did I note which items are motors, and their starting or LRA clue?
- ☐ Did I write down 120V or 240V for the big loads?
- ☐ Did I photograph every plate before putting things back?

✓ A blank just points to your next move

If any answer is 'not yet,' that's fine — it simply tells you which appliance to revisit, or when to reach for the phone and ask me.

When it's a pro's number to find

A few plates aren't yours to chase — and that's exactly as it should be.

Hardwired 240-volt loads, sealed equipment, and a pump down a well are places where a licensed electrician or your well company should get the numbers safely. An electrician can also measure the real draw with a clamp meter, which settles any doubt a faded plate leaves behind.

I'm a tech helper, not an electrician, so I help you gather every plate you can reach and then coordinate the licensed pro for the rest. Our guide on getting a professional load calculation covers when to make that call.

★ I'll coordinate the pro

Once you've gathered what you safely can, call or text me at (330) 200-8042. I'll help line up a trustworthy licensed electrician for the numbers that need one.

Questions worth asking about a plate

When a plate has you second-guessing, these questions get you to the right number.

Q: Which figure is the running watts?

The steady one — often marked W or watts, or found by multiplying volts by amps. A larger LRA or starting figure is the surge, not the steady draw.

Q: Do I use the watts, or the volts and amps?

If watts are printed, use them. If not, multiply volts by amps. You don't need both — either path gives you the same running number.

Q: What if there's more than one current figure?

Use the lower, running figure for your steady total, and treat the higher starting or locked-rotor figure as your surge clue.

Q: Is the model number worth writing down too?

Yes. With it, the maker or well company can supply figures the plate leaves off — especially a motor's surge or a pump's horsepower.

✓ There's no silly question

If a marking still has you stumped, that's normal — send me a photo at (330) 200-8042 and we'll read it together.

Common Questions

The nameplate questions I hear most, answered plainly.

Q: Can I just look my appliance up online instead of finding the plate?

The maker's page for your exact model is a fine backup. But your own plate is the surest source — online listings sometimes mix up models or show a different year.

Q: The plate looks foreign or is in odd units — is it useless?

Not at all. Watts are watts, volts are volts, and amps are amps the world over. Photograph it and we'll read it together.

Q: Do lights and chargers even have useful plates?

They do — usually a tiny one on the base or the power brick. They're steady loads with no surge, so you just note the watts (or volts and amps) and move on.

Q: How exact do these numbers have to be?

Close is fine, and rounding up is safer than rounding down. The plate gets you honest numbers; the margin you add on top absorbs the small stuff.

★ Still squinting at a label?

Send me a clear photo at (330) 200-8042 and I'll tell you which number is which and what to write on your worksheet — free, no obligation.

Bringing it all together

You can now find any plate, read the watts (or multiply volts by amps), spot a motor's surge clue, and tell 120V from 240V. That's the whole skill.

Nameplates are where guessing ends and honest sizing begins. Every real number in your plan traces back to one of these little labels, which is why it's worth doing patiently and photographing as you go.

From here, our worksheet guide gives you a page to add the numbers up, our running-watts-vs-starting guide shows how the surge fits in, and our well-pump guide takes on the trickiest plate of all.

★ Let's read them together

If the labels still feel like a foreign language, that's exactly what I'm here for. Text me your photos at (330) 200-8042 and we'll turn them into numbers you can trust — 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 finding and reading your appliance nameplates feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

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

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

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

What the Markings Mean

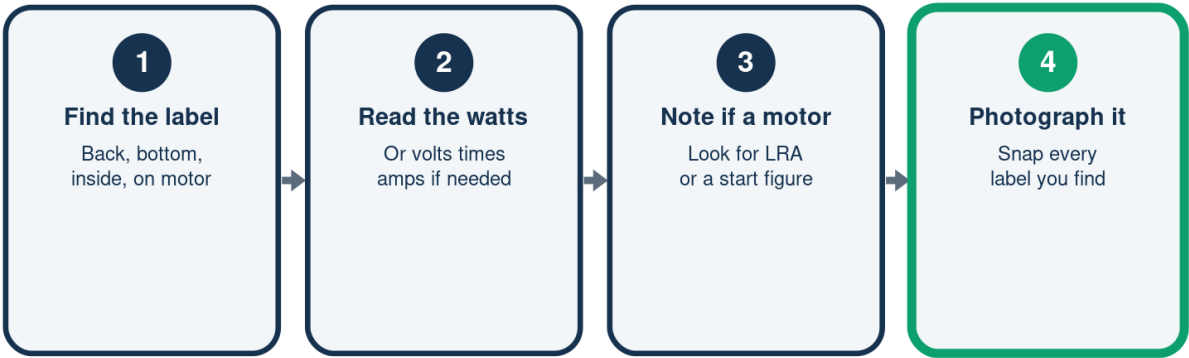
The handful of nameplate codes that matter for sizing

	Stands for	What to do
W or watts	The running power	Use it directly
V and A	Volts and amps	Multiply for watts
LRA / start	Locked-rotor amps	Your surge clue
HP	Motor horsepower	Ask the maker

Voltage (120V or 240V) tells you how it's wired.

Read a Nameplate in Four Steps

The same steps for every appliance on your list



Do this once for each thing on your must-run list.

Where Labels Hide

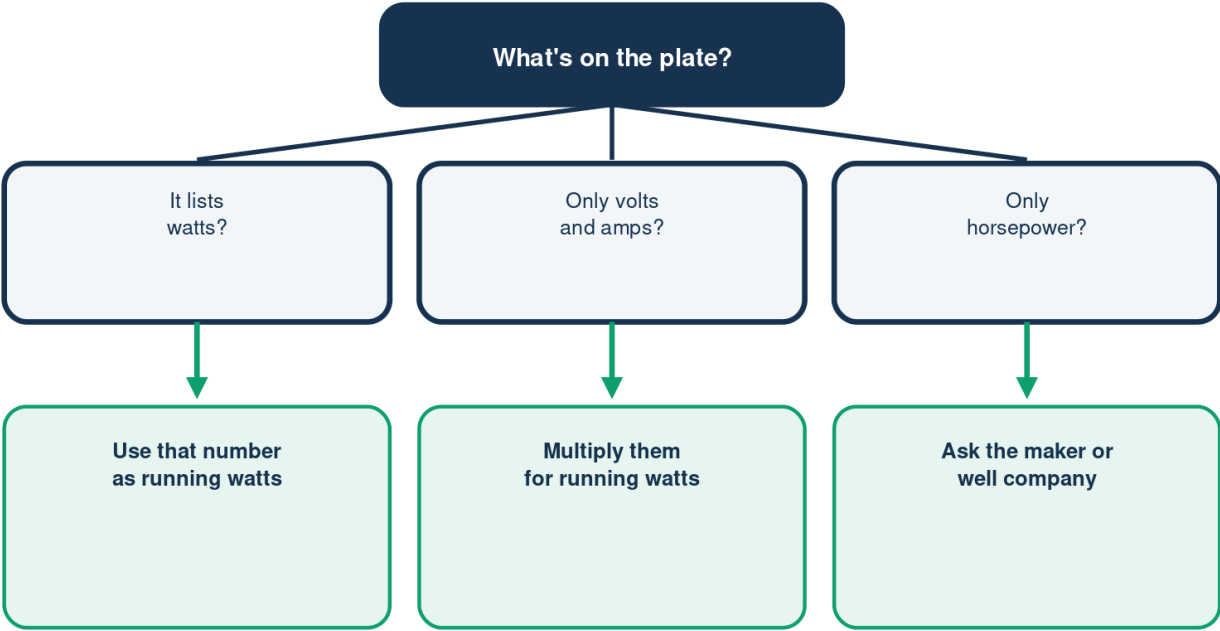
The usual spots to check on common appliances

	Usually look	Also check
Fridge / freezer	Inside the door	Back or top
Furnace / blower	Inside the panel	On the motor
Window AC	Side or back	Behind filter
Well pump	Well cap or tank	The breaker

No plate? Ask the maker or well company for the figures.

What Does the Plate Show?

Follow the branch that matches your label



Never turn horsepower into watts with a guessed factor.

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



Need a Real Person?

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



A Note From Bill

A quick note from Bill.

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

— *Bill*



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