

## Electrical Plug/Outlet and Voltage Information for Democratic Republic of Congo (Zaire)



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- Voltage: 220-240 Volts (U.S./Canada are 110-120 Volts)
- Primary Socket Type: Europlug, Schuko  
Others sometimes found: Indian
- Multi-voltage appliances (laptops, etc.): Plug adapter  
Click socket type links to view adapter for that type
- 110-120V electronics: Plug adapter + step-down transformer
- Hair dryers, curling irons, etc.: Plug adapter + voltage converter

For the most part, electrical sockets (outlets) in the Democratic Republic of Congo (Zaire) are one of the two European standard electrical socket types: The "Type C" Europlug and the "Type E" and Type F" Schuko. Also reported to be in use is the "Type D" Indian socket. If your appliance's plug doesn't match the shape of these sockets, you will need a travel plug adapter in order to plug in. Travel plug adapters simply change the shape of your appliance's plug to match whatever type of socket you need to plug into. If it's crucial to be able to plug in no matter what, bring an adapter for all three types.

- Adapter for "Type C" European CEE 7/16 Europlug
- Adapter for "Type E/F" European CEE 7/4 or CEE 7/5 Schuko
- Adapter for "Type D" Indian BS-546 (5 amp "small" version)



### But the shape of the socket is only half the story!

Electrical sockets (outlets) in the Democratic Republic of Congo (Zaire) usually supply electricity at between 220 and 240 volts AC. If you're plugging in an appliance that was built for 220-240 volt electrical input, or an appliance that is compatible with multiple voltages, then an adapter is all you need.

But travel plug adapters *do not change the voltage*, so the electricity coming through the adapter will still be the same 220-240 volts the socket is supplying. North American sockets supply electricity at between 110 and 120 volts, far lower than in most of the rest of the world. Consequently, North American appliances are generally built for 110-120 volts.

**But that doesn't mean that your specific appliance isn't already compatible with the higher voltage -- it may very well be.**

### So how do I know whether or not my appliance is compatible with 220-240 volts?

Short answer: **The only way to know is to check, and there's absolutely no getting around that crucial step.** Electricity is nothing to mess around with, and assuming can be bad news. If you're wrong, you could "fry" your appliance, or worse yet, start a fire.

That being said, generally speaking, most modern "digital-age" appliances (especially ones that run on batteries) are being built to be compatible with all worldwide voltages, from 100 volts in Japan to 240 volts in the United Kingdom. This usually includes things like laptops, PDAs, cell phones, digital cameras, digital camcorders, many portable video game devices, digital music players, etc. More and more personal grooming items like hair dryers curling irons, shavers (especially cordless ones) and such are being built to be compatible with multiple voltages as well, but most of them aren't.

"Conventional appliances" like kitchen items, audio/video equipment, vacuum cleaners, lamps and lights, and most bath appliances are **not** compatible with multiple voltages. Again, **the only way to know is to check.** A common misconception is that there's any such thing as a "standard" electrical input for appliances. There's not. They're all different.

<p>(交流适配器) AC Adapter (型号) Series HST (中国制造) Product of China 0415B19180 For use with HP notebook products only. HP Part No.: 344500-003 Replacement Part No.: Spare: 300165-001 (INPUT: 100-240V ~ 2.9A(2.9A) · 50-60Hz (额定输入功率) 19.0V(19.0V) — 9.5A(9.5A) 180W</p>	<p>Facsimile Model No. <b>KX-FPG379</b> Power Source :120 V~ 60 Hz 1.0 A 60 W Part 15 of the FCC Rules. Operation is subject to the following conditions: 1) This device may not cause harmful interference, and 2) any interference received, including interference from other authorized digital devices, may not be ensured when using this phone.</p>
<p><b>Example 1: Laptop power supply (charger, ac adapter)</b> "100-240V" indicates that the laptop is already compatible with any standard household voltage worldwide. The only issue is changing the shape of the plug with a simple plug adapter. This is true of most, if not all, laptops.</p>	<p><b>Example 2: Label on rear of fax machine</b> "120V" indicates that the fax machine is only compatible with 120 volt North American electricity. A plug adapter by itself won't work if the foreign socket is 220-240 volts. The voltage needs to be changed from 220-240 volts to 120 volts.</p>

**Okay, so how do I find this info for my specific appliance?**

The electrical input specifications will appear on a label on the appliance itself, or on its charger or AC adapter if it uses one, near where the brand name and model number appear. Look for the word "input." As a last resort, you could check the back of the manual, but 99 times out of 100, it will be on the appliance's or charger's label. The input voltage is usually abbreviated to "V" and it should look something like this:

**Input: ~100-240V 50/60Hz 65W** -- This means the appliance is compatible with multiple voltages. This item can be brought just about anywhere in the world, and any difference in voltage is basically irrelevant. The appliance (or charger) adjusts itself to whatever voltage it receives. The only issue is whether or not the plug can physically interface with the socket. The appropriate travel plug adapter is all that's needed.

---or--- **Input: 115/230V 50/60Hz 200W** -- This means that the appliance can be switched between 110-120 volts in North America, and 220-240 volts in other parts of the world. This is common of desktop computers and some hair dryers/curling irons/etc. You probably have to physically flip a switch somewhere, but as long as that switch is in the proper position and you have the appropriate plug adapter, you're fine.

---or--- **Input: 120V 60Hz 2.8A** -- This means that the appliance is only compatible with a single voltage, in this case, 120 volts. If the socket is 220-240V, then an adapter by itself isn't enough, because travel plug adapters do not change the voltage supplied by the socket. Plugging it in with just an adapter can "fry" it (if you're lucky, that's all that will happen) because the voltage is too high for the appliance to handle. To use this appliance safely, the voltage needs to be changed from 220-240 volts to 110-120 volts by way of a voltage converter or transformer.

**Rules of Thumb for Appliance Voltage Compatibility**

It's important to understand that there's no such thing as a "standard" electrical input/output for electrical appliances. The information below is just a general guideline, and it may or may not be correct for your specific brand and model. The only way to know for your specific appliance is to check.

**Laptop computer:** Usually 100-240V, 50/60Hz, auto-switching. A travel plug adapter works just fine all by itself.

**Desktop computer:** Usually switchable between 110-120V and 220-240V via a small switch on the back of the computer, near the cooling fan. A travel plug adapter will work fine as long as the voltage switch is set to the proper position.

**Cell phone:** Usually comes with a charger that is 100-240V compatible, but that is by no means always the case. It's very important to check the charger. If it says "100-240V" then a plug adapter will work fine. If not, the easiest solution is probably to contact your cell phone provider and buy a new charger which is multi-voltage compatible, and attach the appropriate plug adapter to the multi-voltage charger.

**PDA/Blackberry/etc:** Almost always comes with a charger that is 100-240V compatible. Simply attach a plug adapter to the charger's plug.

**Digital camera:** Chargers are usually 100-240V compatible. A plug adapter is usually sufficient.

**Hair dryer/curling iron/flat iron/etc:** Most U.S. and Canadian hair care appliances are only compatible with 110-120V, though some higher-end models can be switched between voltages. If your brand/model has a voltage switch, then a plug adapter is sufficient. Otherwise, the appliance will require that the voltage be changed. Since hair dryers and other hair care appliances usually don't contain any electronic circuits, a voltage converter is usually more convenient than a step-down transformer.

**Electric shaver:** Most U.S. and Canadian corded electric shavers are only compatible with 110-120V. Cordless/rechargeable shavers often come with chargers that are 100-240V compatible.

**CPAP Machine:** 50/50 shot, there's no telling. A lot of CPAP machines are built with DC motors because they're quieter. DC motors plug into AC power sources, of course, through an AC adapter. Since AC adapters are converting an AC voltage to a smaller DC voltage anyway, the AC input voltage is often irrelevant. If the AC adapter says "100-240V" then a plug adapter will work just fine. But this is by no means true of all CPAP machines. Some brands/models use AC motors and are only compatible with 110-120V. If that's true of yours, then theoretically a voltage transformer + a plug adapter would at least allow it to power up. But in practice, the difference in frequency (Hz) may negatively affect the machine's performance. For most appliances, the effect is negligible. But for a CPAP machine, we've been told that the effect can be significant. The better solution may be to just buy a multi-voltage compatible CPAP machine, rather than to depend on a transformer.

**iPod:** You'll have to check the iPod's charger. There are so many different versions, it's impossible to keep up with what kind of charger ships with any particular model. If the iPod's charger says "100-240V" then a plug adapter is sufficient. Otherwise, if it says "120V" then you'll need a voltage transformer. Or you'll need to replace the iPod's charger with one that is 100-240V compatible.

**Audio/Video Equipment, including Televisions, Stereo Components, VCRs, DVD Players, Video game consoles (X-Box, Wii, Playstation, etc.):** Most equipment of this type is purposely manufactured to be localized to a particular country or geographic region. It's all part of the "war on piracy" and for the most part, it's not worth the trouble to bring this kind of item abroad. Even if you want to fight the battle of getting power to the device, there will probably be compatibility/standards issues related to the audio/video signals, scan rates, etc. These are beyond the scope of our business, and we don't claim to be authorities on those matters. Television broadcast standards are different (NTSC vs. PAL), audio broadcast standards are different, CD and DVD media are usually "region-locked" to a particular geographic area (i.e. European DVDs/game discs won't play on most North American DVD players/game consoles) and a host of other issues beyond simply getting power to the device. If you're dead set on bringing A/V equipment to another country, you'll want to consult an A/V specialist.

**Power Tools:** Most U.S. and Canadian power tools are built for 110-120 volts, and will require a step-down voltage transformer as well as a plug adapter. However, some cordless/rechargeable power tools ship with chargers which are 100-240V compatible. Check your charger. If it says "100-240V" then a plug adapter is sufficient.

**Air conditioners, refrigerators:** Appliances which contain a compressor require a special type of transformer called a "3-tap transformer" because in order for the compressor to function properly, the output voltage supplied by the transformer needs to be slightly adjusted up or down to compensate for the difference in frequency (Hz.)

**Clothes dryers and Electric ranges:** North American clothes dryers and ranges usually connect to a specialized 2-phase household electrical circuit. You'll want to consult an electrician.

**The Democratic Republic of Congo (Zaire) Adapters**

If your appliance is already compatible with 220-240 volt electrical input, one or more of the following travel plug adapters (depending on which type of outlet is installed in any given specific building) will allow you to plug in. Click the link to view the ordering page for that adapter.

- Adapter for "Type C" European CEE 7/16 Europlug

- Adapter for "Type E/F" European CEE 7/4 or CEE 7/5 Schuko
- Adapter for "Type D" Indian BS-546 (5 amp "small" version)

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