

A Pictorial Guide to Charging at The Shops at Mauna Lani

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I have compiled a short pictorial step-by-step guide to the use of DC Fast Charge stations for us mortals who are unfamiliar with the antics required to use an Electric Vehicle DC Fast Charger and cling to the hopeless belief that instructions on the use of unfamiliar equipment can be useful.

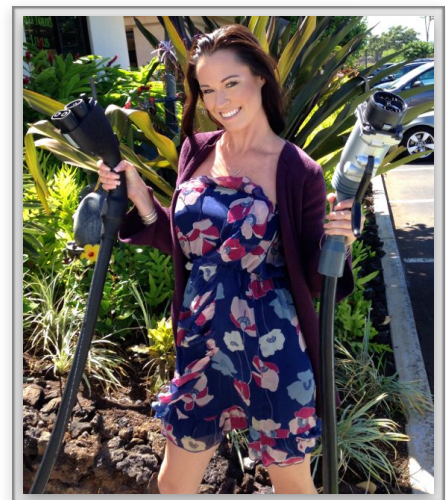
First you notice, uh-oh, running out of juice...



You pull up to the DC Fast Charger:



There are two charge ports on this DC Fast Charger. The one on Lauren's right is the SAE Combo port - for European and American cars, and the other is the CHAdeMO¹ port - for the Nissan LEAF.



¹ CHAdeMO is a joke in Japanese: cha = tea, de = of, MO = time... Charge in the time it takes to drink a cup of tea...

For LEAF owners, take the CHAdEMO plug, port 1:

Plug it in to the DC Fast Charge port on your LEAF. It is the one to your left with the black cover:

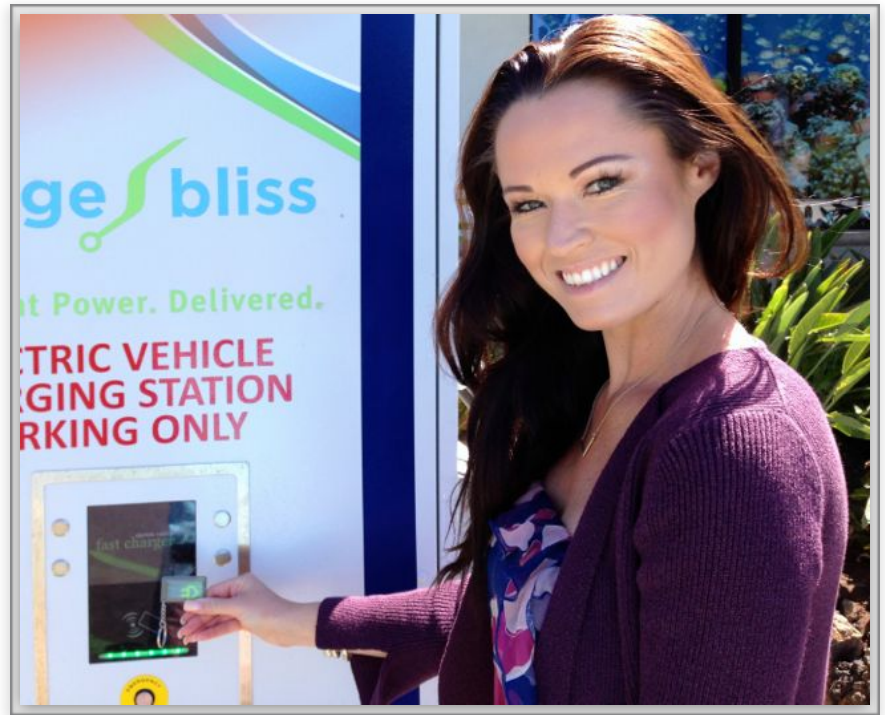


Push the CHAdemo plug into the port on your LEAF and pull the lever under the nozzle. This is very important.

The bellows will collapse when it is seated properly and you will hear it click in to place.

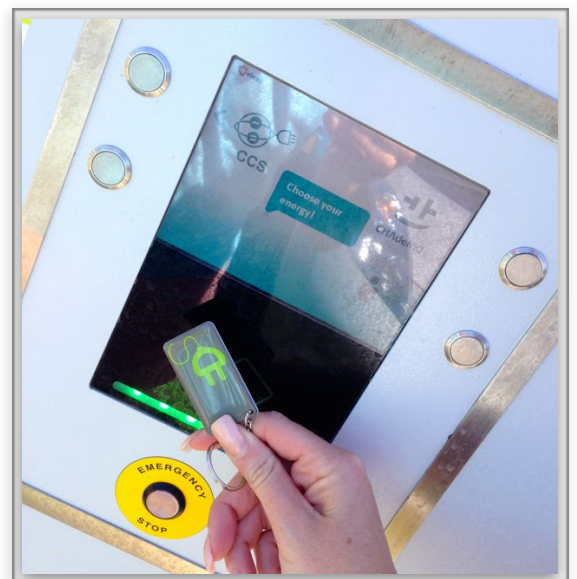


Now, go over to the front panel of the charge station:



and press your Greenlots RFID² on to that whizzy-looking concentric circles thing:

Note that the LEDs across the bottom are green. That means the charger station is working.

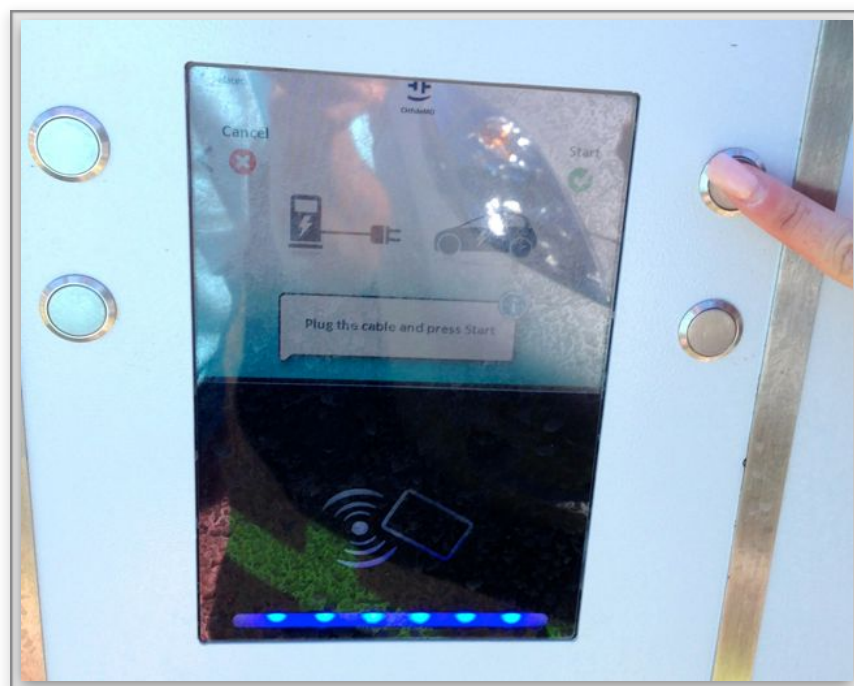


² Don't have an RFID, no worries, see next section...

The charge station then politely requests that you “**Choose your energy**”. Not clear to me what that means, but stay the course. LEAF owners press the top right button labelled CHAdeMO, the one with that weird looking smiley beside it.

Then the screen changes and the right button becomes “**start**” and the left button becomes “**stop**”.

Press “**start**”. Note that the LEDs along the bottom magically flash blue, and...





The red light on the CHAdeMO connector plugged in to your LEAF turns **RED**. This is **very important** - and has tripped up many a dear soul. **If it is not red you are not charging!** No red light means that the CHAdeMO connector is not seated properly. Go back and very carefully pull up on the lever while simultaneously pushing the CHAdeMO plug in to the LEAF connector.³

If it is red, whoohoo! Note also that **one** of those three big blue lights on your dash, depending on your state of charge, will be flashing. If the lights are sequencing then you have power but are **not** charging.

If all is well, you have but a few moments to wait while your car charges. The charge station will cut off at 80% of charge. It does this to conserve battery life. Note that the charger communicates with the LEAF to show percentage of battery charge yet to go.

If you want to stop prematurely, press the “**stop**” button:



³ I noticed that you do not need to press “Timer Off” for a DC Fast charge (you do for a Level-II charge).

Then press the black button on the top of the CHAdeMO plug to release it. (Normally during charge it is locked in place). The bottom lever will extend out to unlocked position.



And you are charged!

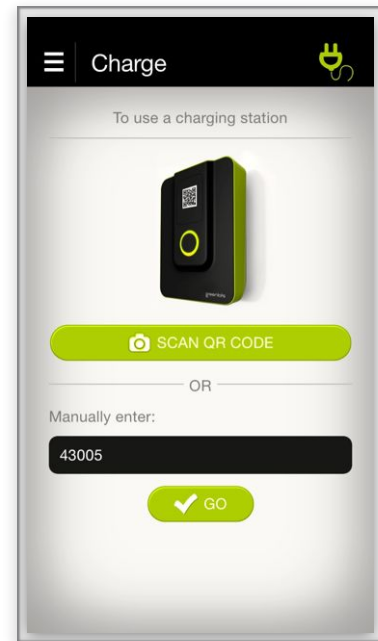


Put the CHAdeMO plug back in place and you are done!



A few more tricks...

1. You don't need an RFID key fob. You can use your Smartphone. Get the Greenlots App from the App store. Log in to your Greenlots account (it will stay logged in after the first time). It will look like this:

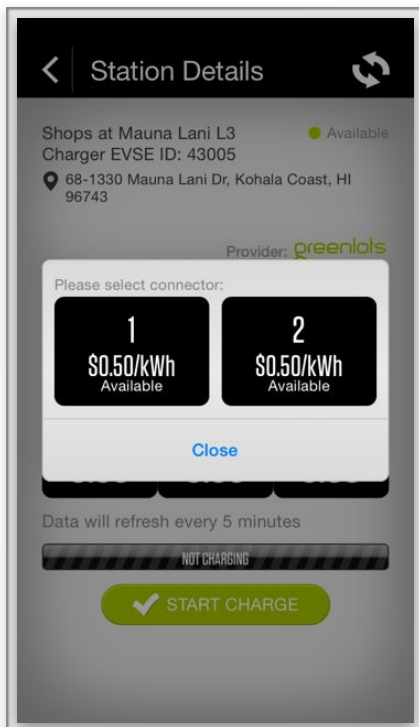
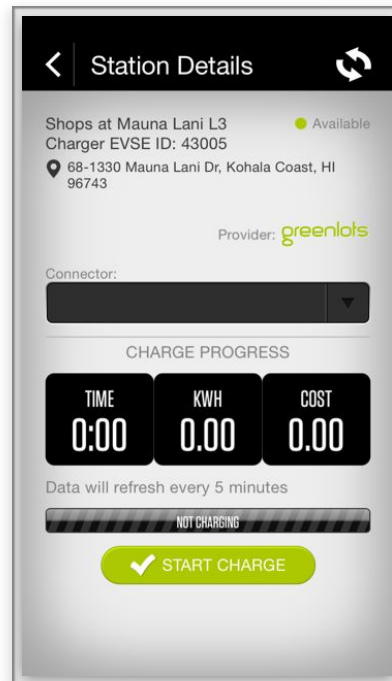


Then press on the “Scan QR Code” button and hold your phone up to the barcode on the station.



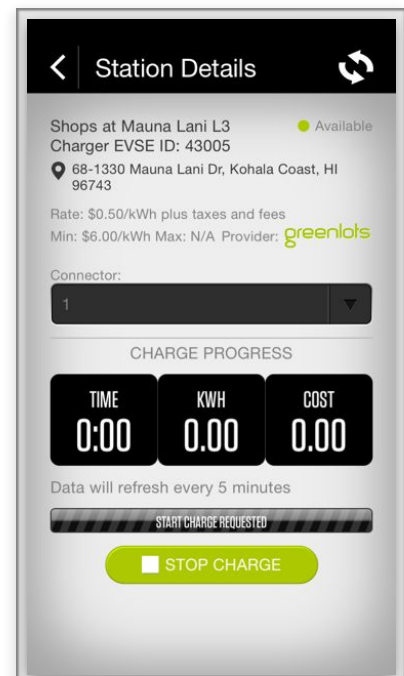
There is no button to push, it will go “*fwhoof*” when it recognizes the code. If it doesn't go “*fwoof*”, you can type in the code 43005.

Then it will invite you to start charging:



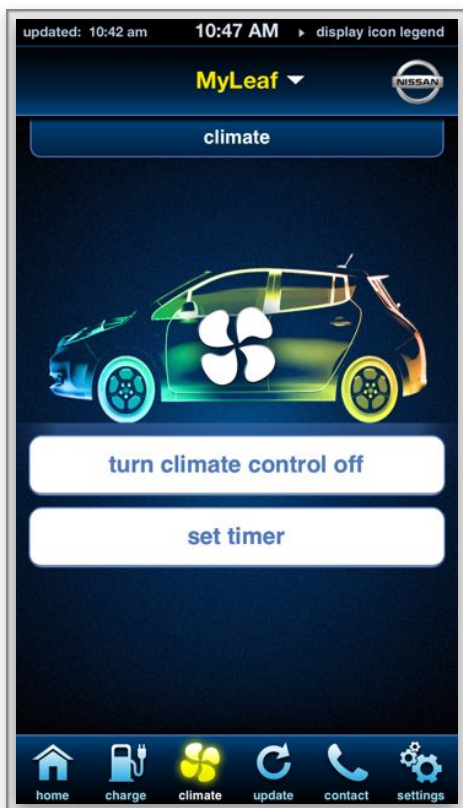
You choose the port... In the case of the LEAF it is Port 1.

The charge will start, and you can monitor the time, cost and KWH of charge that have been delivered. You can also stop the charge early by pressing "STOP CHARGE".



2. The Nissan LEAF App is pretty cool too.

You can check your state of charge at any time while sipping your tea... (quick charge in progress):

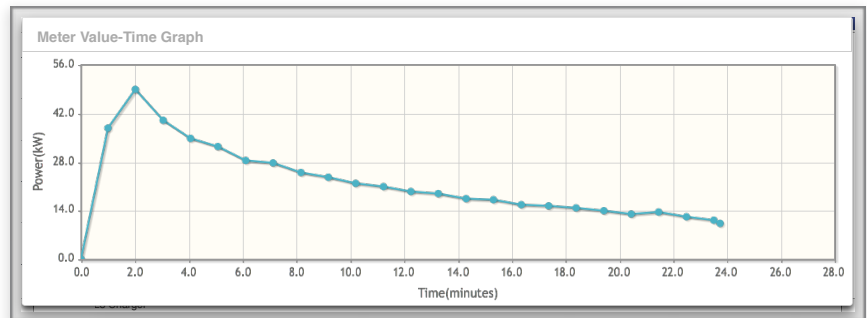


And my favorite - you can turn on the A/C remotely so your car is cool by the time your charge is done and you are ready to rock'n'roll.

Some more details:

Here is a typical charge graph for a LEAF:

Note that it goes up to nearly 50kW within a few minutes and then tapers off. This strategy is in place to be kind to your batteries and preserve battery life.



The DC fast chargers (CHAdeMO-type) raise a car's State of Charge (SOC) to 80% in 30 minutes regardless of initial State Of Charge. In other words, identical vehicles that arrive at 0% or 70% will both make it to 80% in 30 minutes.

The charger display will display a percentage of charge delivered. This means if the charger delivers sufficient energy for the car to reach 80% SOC it will display "100%". This confuses new users who interpret this to mean their car is at 100%.

If the car owner plugs in a second time, having delivered 100%, the device will deliver power at a pace that is very similar to Level II devices (3.3-6.6 kW per hour).

Both Dave Bliss and I have repetitively fast charged our LEAFs without issue. More importantly, UC Davis has studied repetitive fast charging and reported no ill-effect.

Super thanks to Dave Bliss and Doug March of Charge Bliss for their continued support and to Michael of the Shops at Mauna Lani and Lauren for being a great sport for the "photo shoot". Of course all errors and omissions are mine alone...

Doug