Factory EV switch install instructions using harness

Disclaimer:
This modification is done at your own risk. Despite being moderately easy to remove with practically no evidence, this install may void your hybrid warranty. You may experience a decrease in MPG with improper use of this function. And injury to yourself or damage to your vehicle during or after installation is the sole responsibility of the installer/vehicle owner. Stringent precautions are taken in these instructions to avoid any damage to your vehicle and yourself. *Please read over all of the instructions before attempting the install.*

This kit includes:
1 EV wiring harness with all necessary pins attached and wires labeled
1 Scotch-lok for making illumination connection
Accompanying online photo guide at Yahoo photos: http://photos.yahoo.com/blueblewaway
Tech support: blueblewaway@yahoo.com or call xxxxxxxxxx (8am-9pm EST please), if no answer leave message- he might be under a car at the time. ☺

You provide:
1 EV button
1 EV housing (button and housing should come together in a kit)
Phillips screwdriver
Thin blade flathead screwdriver
Paperclip
10mm socket, ratchet, 3-inch extension
Pliers
Wire hanger

Steps you will take:
Disconnect 12v battery
Attach harness to EV housing
Disassemble dash
Install EV button in dash panel
Thread EV+ wire through dash
Connect harness to ECU
Ground 2 wires
Install EV housing
Reassemble dash

We recommend disconnecting the 12v battery before doing any of this. It may be superstition or extreme precaution, but ECUs are not cheap so we definitely don't want to take any chances here. Go to the back of the hatch and disconnect the negative terminal on the 12v battery. This can be done by removing the small panel on the passenger side and removing the non-battery end of the black terminal wire. It is connected by a 10mm bolt to the rear wall of the hatch area. There are pictures in the photo guide of how to do this.

Attaching harness to EV housing:

Your harness consists of 4 wires- on one end each wire has a pin. On the other end only the long wire has a pin, and two of the short wires are ended together in a hook. The fourth wire has no connector on the end of it. Each wire has a label. "I" is the illumination + wire, "E" is the EV + wire that plugs into the ECU, and the two (interchangeable) ground wires are labeled "G."

For the 04/05 harness, hold the white connector with the pin holes facing you on the top. The order in which they go (from left to right) is 1: illumination+ 2: one of the grounds 3: EV+ (long wire) 4: the other ground. They go right in. Listen for the click. **For the 06,** hold the gray connector with the pin holes facing you on the bottom. They go as follows: 1: one of the grounds 2: the other ground 3: illumination+ 4: EV+. You have to pop the terminal retainer up (goes up 1-2 mm, do not remove) and then slide the pins in. Then listen for the click. Push the retainer back down.

For both types of switch, make sure the pins fit tightly in the housing. Now you have a whole connector assembly instead of an empty housing.

Dash removal:

We have documented the steps to doing this in the photo guide to help you visually.

We'll start on the driver's side. First you need to remove the gray vent closest to the door. Insert a thin flathead screwdriver in the notch between the top of the gray vent and the upper dash. Pull straight toward you. This will require some force (and a little wiggling side to side for the bottom clips), but keep pulling straight out from the dash toward you.

Once that's out you can pull off the panel that is connected around and under the steering wheel that contains the dimmer switch and the EV blank. There are 2 screws holding this in, along with 4 claws and 5 clips. The screws are both located toward the bottom on the left side. One is directly underneath where the bottom of the gray vent was. The other one is directly above the hood release. The clips and claws are located around the outer edges of the panel, pull it out gently. Unplug the dimmer switch and the key slot.

Once that dash panel is out, remove the blank where your EV button will go and leave the whole thing hanging. Save the button blank in case you need to remove your EV button- we keep ours in the upper glovebox. Push the EV button (just the button here) into the blank spot from the front until it clicks.

Don't plug the connector into the back of it just yet.

Now move over to the passenger side. Open both gloveboxes. You want to remove the gray vent closest to the door again, so repeat the process you used on the driver's side. You will see a small black shock on the right side of the lower glovebox, pull it away from the tab that holds it to the glovebox. Now find the tabs on the sides that hold the lower glovebox in place. Squeeze the sides of the box in that area and the box will drop down. Pull straight out toward you and the box is out. (side note: this is also how you access the cabin air filter- it's in that white box back there)

Threading harness through dash:

Best way to do this is to grab a wire coat hanger and straighten it out. Thread the hanger through the dash, starting in the lower glovebox, through the lower part of the dash (underneath the under-stereo storage box), all the way through underneath the steering column. Do this carefully, poke around slowly to be sure you are not disturbing anything that is already in there. Use a flashlight shining from the opposite side to help you find a clear path through the guts of the dash.

Go back to the driver's side and find the end of the hanger. Tape the end of the long wire to the hanger and pull the whole thing gently back through to the HV ECU area. Your harness should now have the long wire running all the way through the dash, with the ECU pin hanging out in the

glovebox area. The housing and 3 short wires should be to the left of the steering wheel near the button opening.

Making the positive connections:
Use the "I" wire to connect to the gray wire from the back of the dimmer switch. We have included a Scotch-lok to make the connection. Insert the "I" wire into inside the part of the lok that has a plug in it. The outside (no plug) path is for the gray dimmer switch wire. Once both wires are lined up correctly and the "I" wire is fully inserted up to the plug, use a pliers to clamp the metal tap down. Once the tap is all the way down, cover it with the small plastic tab. Make sure it clicks. This is the only thing that will leave evidence of the EV install in the case you should choose to remove it.
The ECU pin goes into hole 27 of the H14 (bottom) plug on the HV ECU. *Please become familiar with the enclosed diagram before moving ahead with this part of the install.*
Remove the H14 plug and lift the white retainer clip that goes across the plug. A paper clip or other small tool will work here. Be *absolutely sure* you know *which hole to insert the harness pin into* and that you *have the orientation right*- the diagram shows the connector flipped 180º horizontally from how it should go in- make sure the indent in the pin is facing the retainer clip! then press it in firmly until you hear a click. Push the retainer clip back down to secure the pins. Double check everything and put the plug back into the HV ECU.

Grounding wires:
Directly behind the recess where the switch mounts into the dash there are dash assembly brackets, and a 10mm nut can be found. Unscrew this nut a little, insert the hook underneath it, and tighten it back up. That's it.

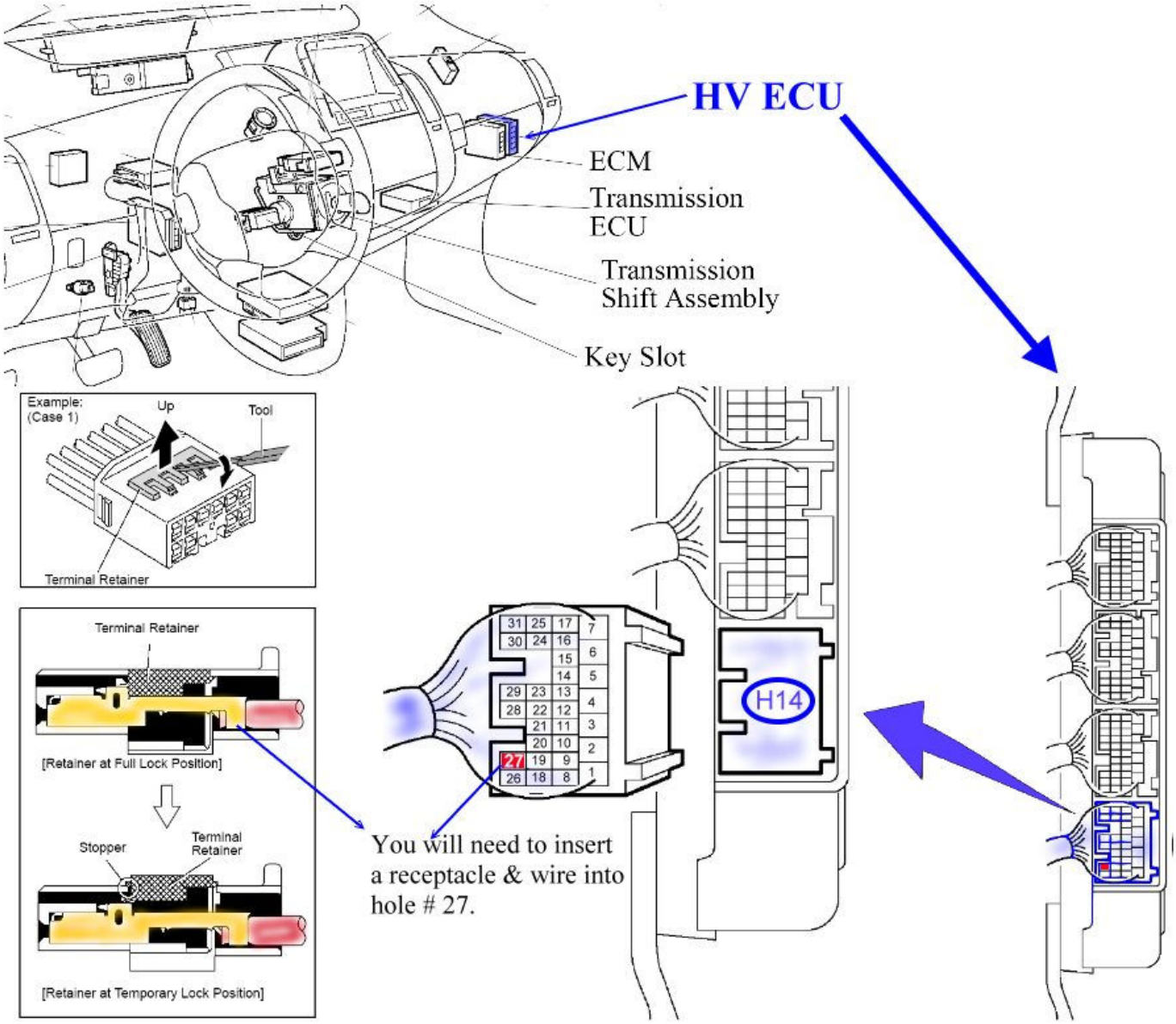
Plugging connector into button:
Now you can plug the connector (housing plus harness wires) into the back of the EV switch.

Reassembly:
Quite literally the opposite of removal. Be sure to plug the smart key button, key slot, and dimmer switch back into the steering wheel panel and to reinstall the small glovebox piston. Also be sure all HV ECU connections are tight. And finally, remember to reconnect the negative 12v battery terminal. (have your smartkey fob handy, the alarm will go off)

Try it out:
Turn on the car, wait until the startup screen is no longer showing. Be sure the info screen is on "consumption" as this makes the activation obvious. Press the EV button. The screen should switch from "consumption" to "energy." If it refuses to go into EV mode, you will hear 3 short beeps. (in the 06, there should be a message that pops up on the MFD)
Once the car is on, you have approximately 7 seconds to do all this before the engine starts. After this, the EV button will not work until the engine has completed warmup.
There are a number of conditions that will prevent the EV mode from working. Extreme heat or cold, incomplete engine warmup, speed above 34 mph or too strong acceleration. And there are times it just does not want to kick on. The "three-beep rejection sound" will let you know the system is working even if it does not want to kick into EV mode.

EV mode questions before or after installing? Email us at blueblewaway@yahoo.com. Thanks!

EV Button Modification for '04 Americas Prius



Please note that anyone attempting to do this modification is doing so at their own discretion and risk.