

# 958.2 Cayenne DIY: S-Hybrid eHybrid Clutch Fluid Change and Adaptation

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chiapet15, 08-21-2018 12:23 AM #1 Instructor

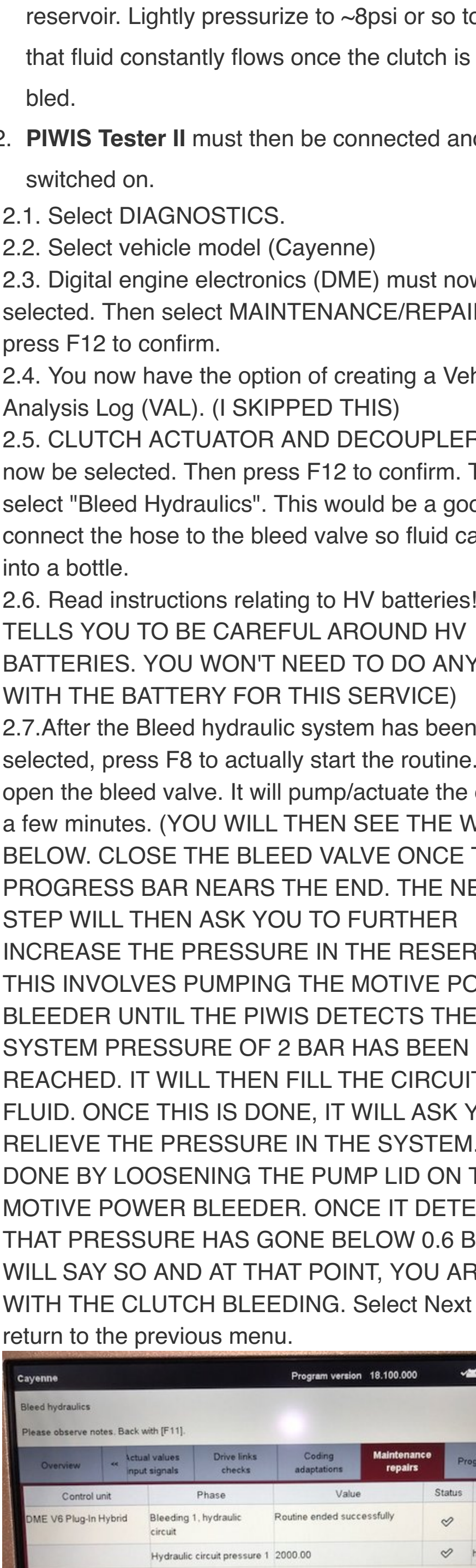
For the Cayenne S Hybrid (up to 2014) and Cayenne S eHybrid (2015-2018), it is recommended to replace the hybrid clutch fluid and perform a clutch adaptation every 2yrs or 20Kmi. In my particular instance, I replaced the clutch fluid at 20Kmi, and was surprised to find it so dirty. As a result, I will start doing this every 10-15Kmi just because it's simple to do with a PIWIS II. I was quoted by local dealers (SF bay area) between \$275 for the clutch fluid change/adaption alone to \$600 for both the clutch fluid change/adaptation AND brake fluid bleed. The variance comes from dealers having different opinions on whether the brakes must also be bled in conjunction with this clutch service, since the fluid for both the brakes and hybrid clutch comes from the same reservoir. To be on the safe side, I do a brake bleed following the hybrid clutch fluid replacement just so that both systems have the same fresh fluid. For what it's worth, alldatadiy says nothing about whether brakes need to be bled along with the performing the clutch fluid service.

### Equipment Needed:

1. Same as what's required for bleeding brakes. A motive power bleeder was used in my example.
2. PIWIS Tester II, version 18.1 or newer. I purchased this from xcar360.com with the CF-31 laptop option.
3. 1qt DOT4 brake fluid. (Note that if you are also bleeding your brakes, you would need a total of 2qts of brake fluid to have enough for both jobs)

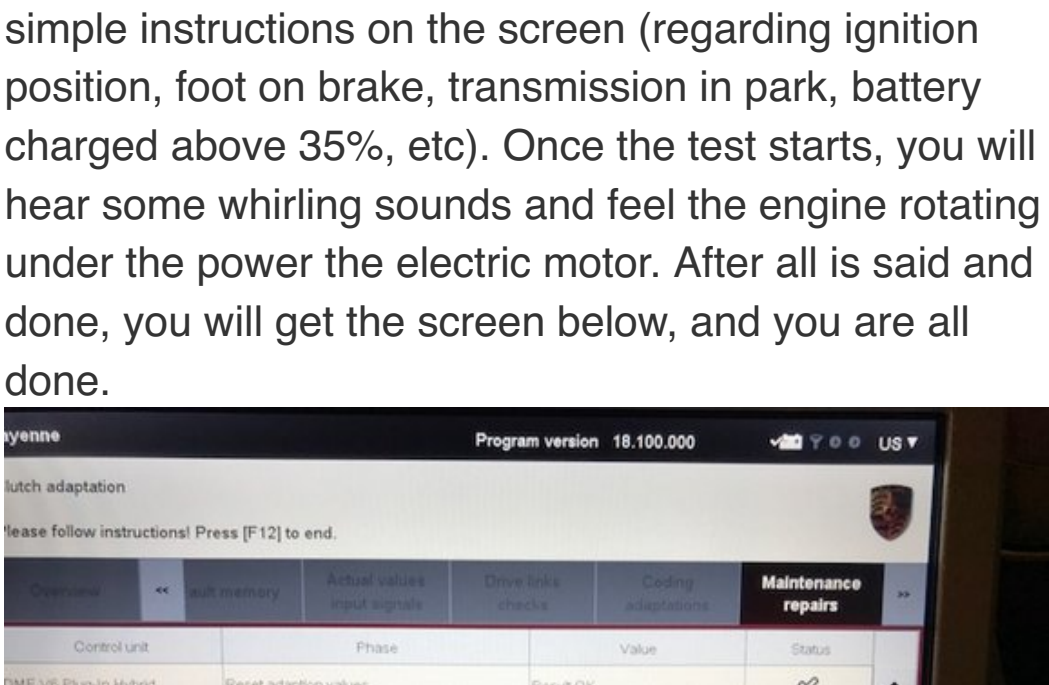
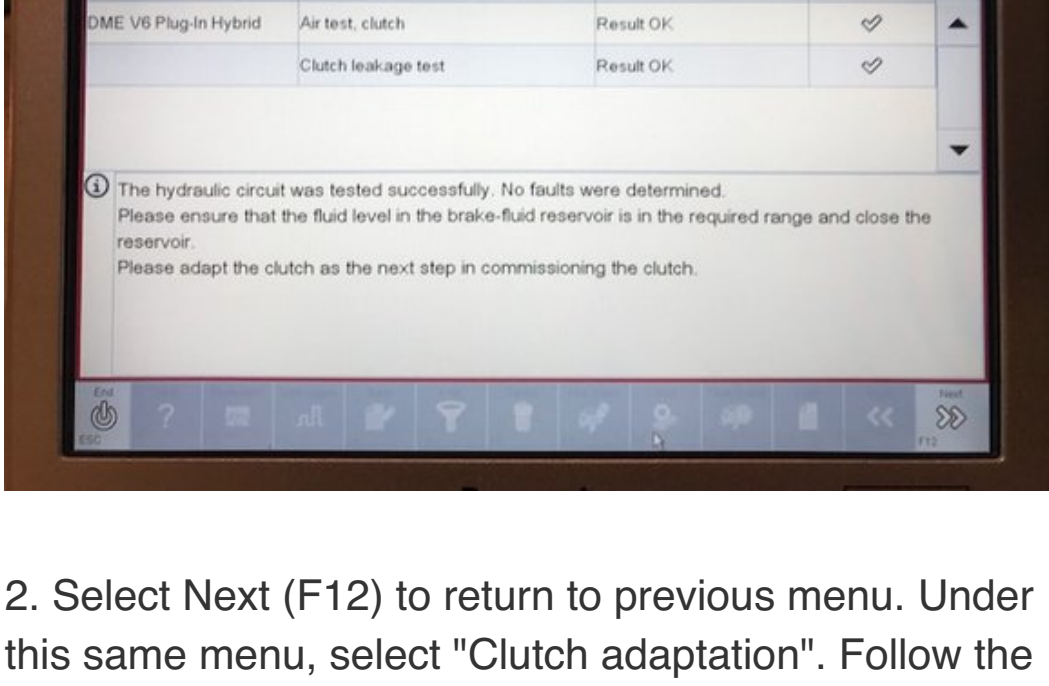
**Time Required:** ~40min at a leisurely pace. Computer does most of the work.

**Clutch bleeder valve location:** The clutch bleeder valve is on the driver side of the transmission bell housing toward the front of the vehicle. If you remove both underbody panels and look up above the driver side of the transmission, you will see a valve with a blue cap on it as shown below. The bleeder screw is the same size as the one on the calipers. Remove the blue rubber cap and attach a tube/bottle to catch the brake fluid that is pumped out of the clutch.



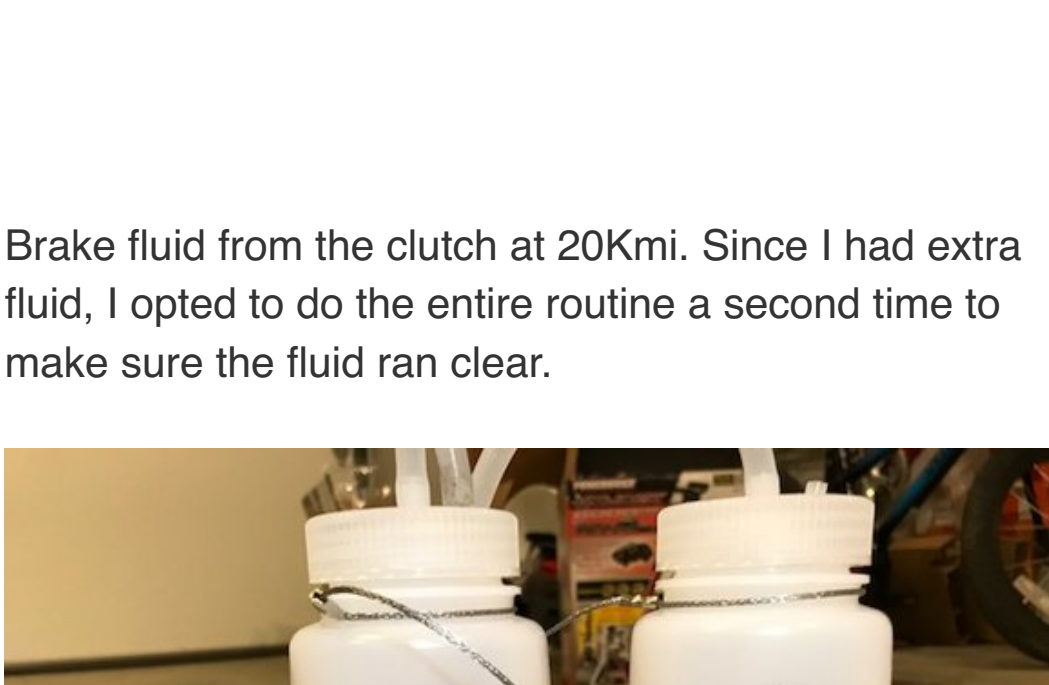
**Steps:** These are taken from the alldatadiy manual for the 2014 Cayenne S Hybrid. Everything remains the same for the 2015+ eHybrid. I performed these same steps on my 2016 Cayenne S eHybrid.

1. Fill the Motive power bleeder with 1qt of brake fluid and connect the brake bleeder to the brake fluid reservoir. Lightly pressurize to ~8psi or so to ensure that fluid constantly flows once the clutch is being bled.
2. **PIWIS Tester II** must then be connected and switched on.
  - 2.1. Select **DIAGNOSTICS**.
  - 2.2. Select vehicle model (Cayenne)
  - 2.3. Digital engine electronics (DME) must now be selected. Then select **MAINTENANCE/REPAIRS** and press F12 to confirm.
  - 2.4. You now have the option of creating a Vehicle Analysis Log (VAL). (I SKIPPED THIS)
  - 2.5. **CLUTCH ACTUATOR AND DECOUPLER** must now be selected. Then press F12 to confirm. Then select "Bleed Hydraulics". This would be a good time to connect the hose to the bleed valve so fluid can drain into a bottle.
  - 2.6. Read instructions relating to HV batteries! (JUST TELLS YOU TO BE CAREFUL AROUND HV BATTERIES. YOU WON'T NEED TO DO ANYTHING WITH THE BATTERY FOR THIS SERVICE)
  - 2.7. After the Bleed hydraulic system has been selected, press F8 to actually start the routine. Then open the bleed valve. It will pump/actuate the clutch for a few minutes. (YOU WILL THEN SEE THE WINDOW BELOW. CLOSE THE BLEED VALVE ONCE THE PROGRESS BAR NEARS THE END. THE NEXT STEP WILL THEN ASK YOU TO FURTHER INCREASE THE PRESSURE IN THE RESERVOIR. THIS INVOLVES PUMPING THE MOTIVE POWER BLEEDER UNTIL THE PIWIS DETECTS THE SYSTEM PRESSURE OF 2 BAR HAS BEEN REACHED. IT WILL THEN FILL THE CIRCUIT WITH FLUID. ONCE THIS IS DONE, IT WILL ASK YOU TO RELIEVE THE PRESSURE IN THE SYSTEM. THIS IS DONE BY LOOSENING THE PUMP LID ON THE MOTIVE POWER BLEEDER. ONCE IT DETECTS THAT PRESSURE HAS GONE BELOW 0.6 BAR, IT WILL SAY SO AND AT THAT POINT, YOU ARE DONE WITH THE CLUTCH BLEEDING. Select Next (F12) to return to the previous menu.

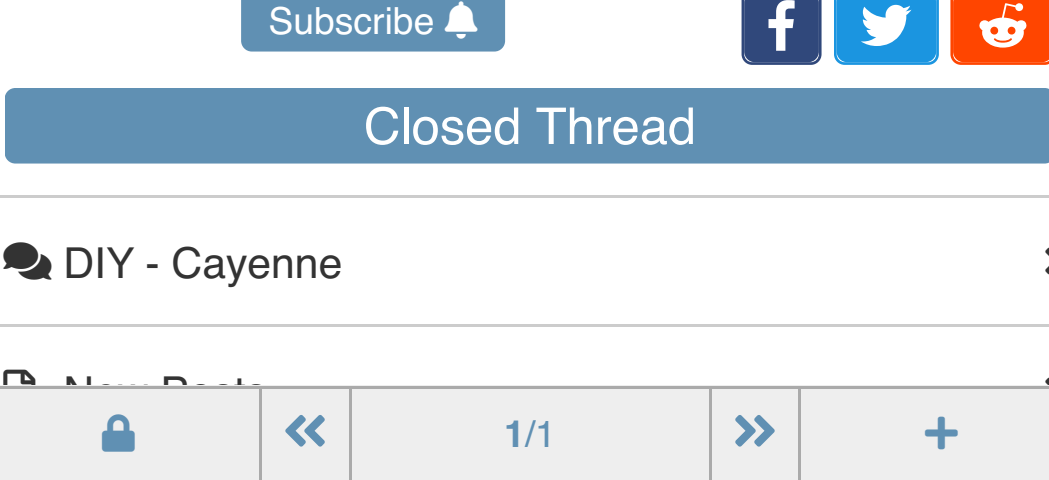


### Perform clutch air leak test

1. Select "Hydraulic air/leak test" under the same menu, below the "Bleed hydraulics" option. You will see the screen below after you follow some simple on-screen instructions and hear the clutch actuate.



2. Select Next (F12) to return to previous menu. Under this same menu, select "Clutch adaptation". Follow the simple instructions on the screen (regarding ignition position, foot on brake, transmission in park, battery charged above 35%, etc). Once the test starts, you will hear some whirling sounds and feel the engine rotating under the power the electric motor. After all is said and done, you will get the screen below, and you are all done.



Brake fluid from the clutch at 20Kmi. Since I had extra fluid, I opted to do the entire routine a second time to make sure the fluid ran clear.



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