2010 43QGP Allegro Bus

10/6/2015

128 - FYI – <u>DREADED CUMMINS WARRANTY SERVICE.</u> After being on the road for 8 weeks we were driving thru Louisville in construction traffic and torrential rain, when we heard a BING from the dash instrumentation and an Amber "Check Engine Light" was illuminated.
At that point we were in construction traffic as we were driving between two parallel lines of New Jersey concrete barriers with NO place to pull over. Over the next few minutes the "Check Engine Light" would go out only to come back on a little while later with the BING. Finally able to pull off the road, the fault code was checked which turned out to be **SPN 3361**, **FMI 5**, The code told me there is a problem in the DEF system. The following is a Quote from the manual.

> After treatment Diesel Exhaust Fluid dosing unit – Current below normal or open circuit. Open circuit at the after treatment Diesel Exhaust Fluid dosing unit.

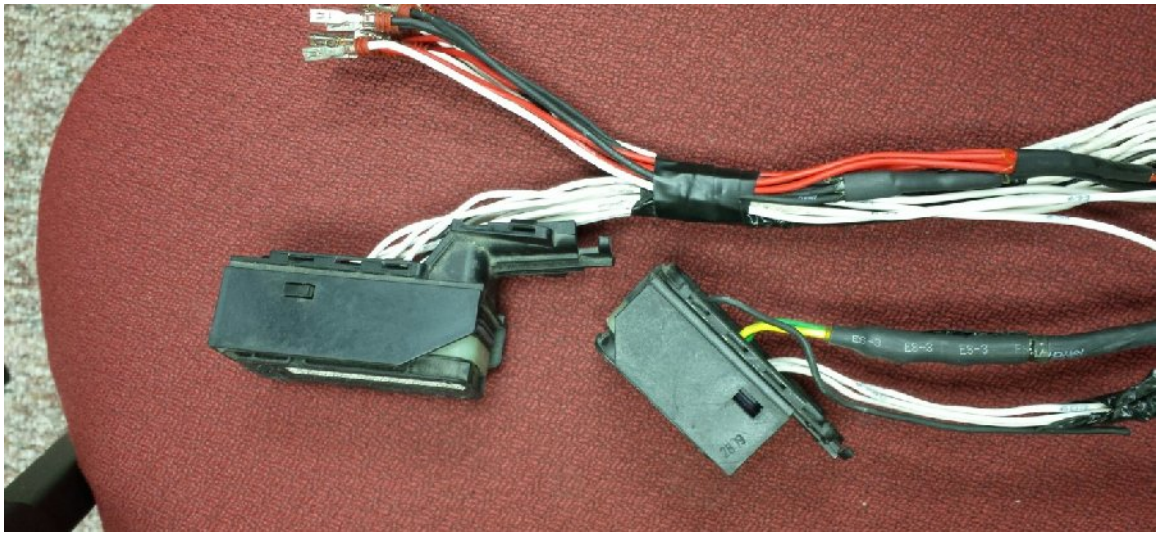
Okay now I know what the fault code says however what does it mean? Of course this event took place during a weekend. The fault code was displayed intermittently so after a short powwow between Cathey and me, we kept on driving to our next destination which was a campground near Frankfort, KY. Monday morning I was able to contact Gary Harris to see what he had to say about the intermittent DEF problem. He felt the situation was probably corroded pins in the DEF dosing unit. As the system had not de-rated the engine or shut the engine down the system was probably working well enough for us to continue driving, however at the same time we may end up stopped on the side of the road.
Following another family discussion we headed south on I-75 toward Knoxville, TN planning on stopping at the Cummins center there. After we continued down the road most of the time the "Check Engine Light" was not displayed, but every time the code occurred we heard the BING and the icon displayed often enough to let us know it was still a problem. When we got into Knoxville I just keep driving as we had reservations at River Plantation about 15 miles down the road.
After getting setup at River Plantation I continued researching the situation using the Internet and several manuals carried in the coach. Checked the two wire harness at the DEF doser, tested the resistance of the doser finding the

resistance within specification. Another call was made to Gary Harris, Gary still suspected the wiring harness at the DEF pump or DEF controller had one or more corroded pins causing the pump to not be able to supply DEF in the quantity needed.
Another family discussion as we were ONLY planning to travel another 100 miles south the next morning we decided to hit the road, the "Check Engine Light" was still intermittent mostly staying OFF longer then it was staying ON. We made the 100 mile trip without any additional problems. Our travel plans had us camping in Franklin, NC for a month, hopefully giving me plenty of time to ponder and plan what needed to be done to correct or repair whatever the DEF problem turned out to be.
The good news, our five year Cummins warranty is still in effect until February 1, 2016. The bad news I do not TRUST most service facilities to make the quality repairs I am capable of making. After checking everything possible without actually disconnecting any of the DEF system wiring harnesses, additional phone calls were made to Gary Harris. Gary told me he had a good working relationship with the service manager (Bill Thomas) at Cummins Power South in Atlanta.
We decided to check the Cummins Power South service center located in Gainesville, GA about 100 miles down the road. While taking Cathey for a day of shopping in Commerce, GA we took a side trip over to the Gainesville, GA Cummins shop. After discussing the problem with two techs and the service manager they suggested we have the coach taken to the south Atlanta shop as they are a Coach Care Facility where the Gainesville shop was not. Another call to Gary Harris telling him what we had been told, he recommended I call Bill Thomas ASAP as their facility was always booked at least two weeks out. So I called Bill Thomas telling him our problem and we needed to make an appointment about three weeks down the road. At this point I get the standard warranty disclaimer if we drive the coach to Atlanta there may be damage that Cummins will not cover, what else is new.
See at this point everyone reading this file is ASSUMING the complete repair would be covered by Cummins, however I already knew better. Cummins SUPPLIED Tiffin with the DEF DOSER, DEF PUMP and DEF CONTROLLER those components are covered by Cummins FIVE year warranty. HOWEVER Tiffin SUPPLIED ALL connectors, wiring and wiring harnesses between the units, that Tiffin chassis warranty was THREE years which expired on February 1, 2014.
Bill Thomas told me to call him back the week before our appointment, I did call him back making sure our appointment was set, Bill gave me the gate

code so we could pull into their secure facility the day before the appointment. Bill Thomas also told me he would be on vacation that week but there would be personal to take care of us.
In an effort to shorten this story I'll try to be brief as this saga carries out over four days.
MONDAY morning, 8:00 AM. Shortly thereafter the coach was pulled into one of their service bays. One of their service techs hooked up the engine to the Cummins computer software to run diagnostics to determine the reason for the fault code. After running the diagnostic program I was told the DEF PUMP was bad, they ordered, received and replaced the DEF pump. After waiting an hour for the coach to be test-driven we were told everything was working properly, no fault codes and sent on our way south.
25 miles down I-75 the first fault code popped up with its BING. I asked Cathey to call James at Cummins Power South (Atlanta) to tell him we were turning around and driving back. Upon arrival James told us the tech would be leaving shortly they would look at it again the next morning.
TUESDAY morning, 7:30 AM. I was at the door when they opened, James and the tech (name not disclosed) as I do not wish to name him in this file. Asked me what had happened, after explaining the events, I turned to the tech and asked him the following question. When you checked the DEF system yesterday did you check each of the connectors, pins and wiring harnesses between the Doser, Pump and Controller, to make sure they were not the problem, he (tech) replied that he had checked all of them.
10:00 AM, two hours after speaking to the tech I took the following photos.

It was obvious to me SEVEN of the larger pins had either rust and/or corrosion on them. Cummins spent the rest of the day looking for and purchasing a pin removal tool because the shop did not have the tool.
I made a point of telling them if they could not work on the problem there was no point in the coach sitting in the bay with the meter running. They

agreed, moved the coach out of the bay waiting until they had the pin removal tool in hand.
WEDNESDAY morning, 7:30 AM, after checking with the office, I was told they would not have the tool until after 10:00 AM as the tool had to go to their receiving department (next door) then someone would walk over to pick up the tool from the shop.
10:45, with the pin removal tool in hand the coach was moved into a bay to begin working on removing the rusted and corroded pins.
12:00, the tech came into the office stating he had been unable to remove **ANY** of the damaged pins from the connector and he felt he might break the connector if he were to pull any harder.
A conference call was made to Gary Harris, everyone was listening and involved in the discussion. Gary stated he could over-night a couple of DEF controller pigtails that had been salvaged from two damaged chassis harnesses. That would supply both a 53 pin and 86 pin connector and pigtail wires for Cummins to use if needed.
While on the phone with Gary Harris, Gary e-mailed photos of the four connectors to James and to my phone. We chose two connectors to be shipped by UPS next day air, they are shown below. Gary Harris explained the tech needed to be aggressive when pulling on the wire with the pin extraction tool in place. Gary pointed out he had extracted the pins from the harness shown in the photo below.



Gary closed the call by stating once the pigtails had been received they (Cummins Power South) would have a backup set of connectors in the event the OEM coach DEF connector was damaged when the corroded connector wire was aggressively pulled to remove the pins. Nothing else was done for

the rest of the day as we were waiting receipt of the above harnesses. The coach was moved out of the bay to wait for delivery of the DEF pigtails the next day.
AUGUST 13, 2015, Thursday, 9:00 AM, waiting in the Cummins Power South service office for the DEF controller pigtails to arrive by UPS next day air.
9:58, DEF controller pigtail package arrived at Cummins Power South receiving department.
10:30, Asked James when the parts would arrive James told me they had already been received, they just needed to send someone over to pick the parts up in the building next door.
10:45, coach moved into service bay.
11:30, Tech came into service office, reporting he had been unable to remove a **SINGLE** pin from the just received Tiffin supplied 86 pin DEF controller connector.
When I heard his statement, I blew a gasket. I stated to both James and the tech, the tech had just spent 45 minutes attempting to remove 29 pins from the coach DEF controller connectors then he would need to remove 29 pins from the coach DEF controller connectors he would never get all of the pins removed as one or more pins would not be able to be removed.
I stated it had been my request **TWICE** on Wednesday and **ONCE** by Gary Harris and we understood the tech was going to aggressively attempt to remove the corroded pins from the coach DEF controller connector **AFTER** the two DEF connectors had been received from Tiffin as those pigtails were backups just in case. Instead another 45 minutes was wasted working on removing pins from the Tiffin supplied DEF controller pigtails.
After my outburst the tech, replied “Okay, he would work on removing the coach DEF controller pins UNTIL he was told to do something different”.
At which point I stated if the tech would make an honest attempt and was unable to remove the corroded pins I would be satisfied and he could perform the repair his way.
12:00, Lunch break
12:30, Lunch over I asked the tech what was the status, he replied he was making good progress with removing the seven (7) corroded pins.
13:15, Tech came into customer lounge to tell us the DEF repairs had been completed. After testing, no fault codes were found, the DEF pump was delivering pressure over 100 PSI, the coach was parked outside ready to be test driven.

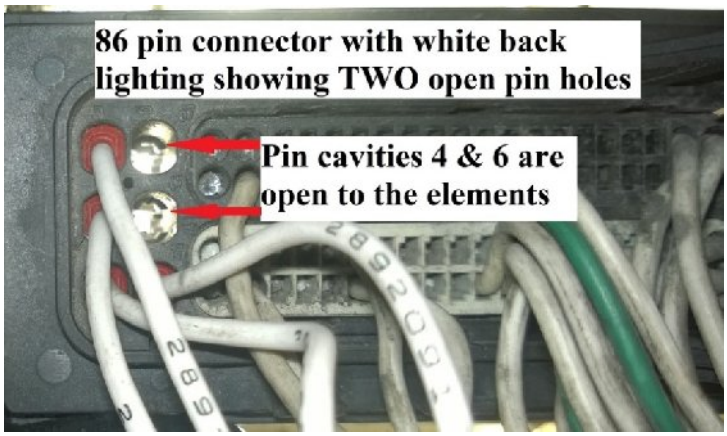
Tech reported when he started working on the system one of the connectors was not completely latched also the rubber seal on the second connector was twisted either problem could have caused the water damaged/corroded pins. 2:00 PM, we decided the test drive could occur while driving on our way south. The last hour of our drive toward our home was in heavy rain, arrived with no dash problem icons displayed.

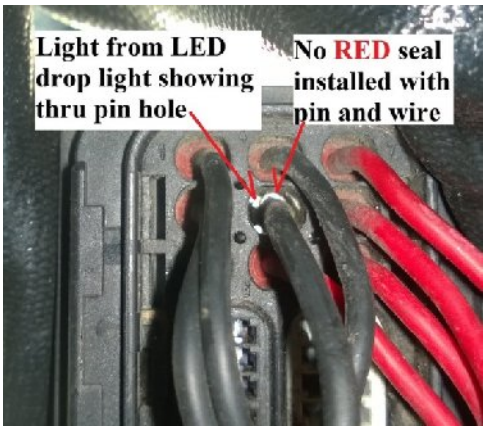
AUGUST 21, 2015, Friday, EIGHT days later, turned ON coach ignition to open driver side slides. Dash "Check Engine Light" illuminated, after checking the code it turned out to be **SPN 3361, FMI 5**.

Seeing the same fault code displayed, after spending the better part of a week in South Atlanta just a couple of miles from Atlanta's 24/7/365 airport I was not a happy camper. Before even taking a look at the DEF system, my mind had been made up whatever repairs were needed would be performed by ME in our RV garage.

Both DEF controller connectors were removed from the DEF controller to find items which made me very unhappy with Cummins Power South and the technician.

I'll let the following photos tell the story.





The photo on the left shows two **UNSEALED** pin cavities, this connector was mounted on the right side of the controller with the larger pins to the bottom, any moisture or water entering the connector will affect the voltage and ground pins preventing proper operation of the DEF system.

The photo to the right above, while the pin is inserted in the hole the **RED** cavity wire seal is missing. With a shop light back lighting the connector light shines thru any connectors where the cavity seal is missing.

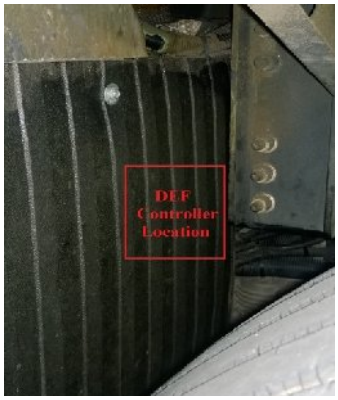
When voltage is affected, the pump does not operate as designed. When the tech installed the new DEF controller he mounted the controller tilted slightly counterclockwise, with a counterclockwise tilt water getting in thru

the open pin holes ran into the lower portion of both connectors where the voltage, ground and pump control pins are located.

As seen above right I remounted the DEF controller with its two connectors on the bottom of the DEF controller this position should prevent any moisture from entering the connectors. After purchasing cavity plugs from a local truck dealer the open wire cavities were plugged.
Previously a longer and wider mud flap had been fabricated and installed between the DEF controller and the tag axle tire.
Most of the headache could have been eliminated if ONLY the DEF pump and controller COULD have been supplied under warranty to ME the owner.

Before Additional Mud Flap

After additional Mud Flap



Gary Harris and Cummins Power South are aware of the owner's repair.