

Linder Technical Services Networking Newsletter



June 2007

The 2nd annual Lindertech North Conference



The 2nd annual Lindertech North Conference was held during the weekend of April 27-29, 2007 in Toronto, Canada at the Buck Creek Pioneer Village. Over 100 technicians attended from all over Canada to hear who we consider to be the best technical trainers in the business.

The conference kicked off early on Friday morning with a special session taught by Bruce Amacker on Ford Powerstroke Diesel. After lunch, John Thornton took over with his class on Electronic Throttle Control (ETC) systems. After a quick break, Glenn McNally finished out the evening with his class on Tire Pressure Monitoring Systems (TPMS). After dinner, the trade show was open for a few hours to give everyone a chance to meet the vendors. Saturday morning began with Luis Ruiz of Mechanic's Education Association (MEA) and his class on VW Drivability. After lunch, Craig VanBatenburg "plugged in" for his class about Hybrid Help, Hype and Hindsight. Saturday night's dinner included giveaways from all the vendors. The vendors deserve a great big THANK YOU for not only donating some great door prizes, but for



supporting our industry and being at events like these. After dinner and giveaways, it was time for the evening's entertainment. This year the event was held in conjunction with Canadian Technician Magazine's "Technician of the Year Award". The finalists for the award were on hand for training throughout the weekend and the winner was announced Saturday night. After the award ceremony was over, a hilarious 3-man comedy team took over and had the crowd in stitches for a couple of hours. John Thornton had the tough job of being Sunday morning's speaker after a full night of food, prizes and entertainment. But, as always, John was able to capture the crowd's attention for the full 3-hour class on Key off EVAP Systems. John Cochrane and Jim Linder closed the conference with an update on the U.S.'s NASTF (National Automotive Service Task Force) and the Right to Repair Act as it relates to technicians in Canada.



This year, everyone who attended the Lindertech North Conference was from Canada. Next year we hope that especially those of you who live in the Northeast part of the U.S. will consider this a must-do event for 2008. Plans are already being made for next year. We are in the process of confirming dates and speakers, but I can tell you that Linder Tech's own Jim Linder, Doug Garriott and Michele Winn will all be teaching next year. We will update you in our newsletter as more details become available. You can also check our website at: www.lindertech.com or go directly to the conference website at: www.lindertechnorth.ca

Analysis from the “Sleuth”

This month’s case study is on a 1995 Buick Riviera 3.8L w/ super-charger. This car actually came in a year ago. Normally I don’t work on cars over 10 years old, but for some reason when she called that particular day, I decided to bend my own rules. The complaint at the time was lack of power and rough idle. There were stored codes for fuel trim at lean limit, oxygen sensor voltage low and QDM#1. Fuel pressure and volume were both low (contributing to the fuel trim lean code) so I recommended the fuel pump be replaced. There was an exhaust leak in front of the oxygen sensor (possibly contributing to the low oxygen sensor voltage), so I recommended the exhaust be repaired. There was antifreeze in the bay, the overflow tank was empty and I could see a leak in the radiator, so I recommended the radiator be replaced and the cooling system be checked for any other leaks. There was also tranny fluid in the bay from leaking cooler lines which I also recommended be replaced. Lastly, I recommended amperage testing at the PCM to check for shorted solenoids or a bad PCM which was setting the QDM#1 code. With such a long list, I gave her the option of further diagnosis of the QDM code (and more \$\$) or to simply take the car. She opted to take the car. I was certain I would be rid of it for good. There was no way she would put that kind of money into fixing that old car. Or so I thought.....



Fast-forward to a few weeks ago. Phone rings, customer says I looked at her car last year and she is still “having trouble”. I asked for her name and put her on hold so I could check her customer history. Would you believe, it was the same lady with the 1995 Riviera! I saw the list of notes I had made from her previous visit, so when I got back on the phone, I asked if any of the suggested repairs had been made since last year. Would you believe the radiator and tranny lines had been replaced, exhaust repaired and a new fuel pump had been installed! I then asked if anyone had done amperage testing or checked any solenoids (thinking she wouldn’t know what I meant), but in fact she said yes, someone had replaced at least one solenoid, but it didn’t help and the check engine light was still on. Since I looked at the car last year, I didn’t feel like I could tell her no, so I scheduled an appointment for the next day. When she arrived, she said the complaint now was that the car lacks power and the check engine light is on.

A test drive confirmed a lack of power, and the check engine light was on. Back in the bay, a quick scan with the Tech-2 showed only one code: P1640: QDM#1 circuit. Great. The scammer showed pids for QDM1, QDM2 and QDM3 and each said either “low” or “high”. I needed more information, so I consulted motorall-data.com. The description was a little confusing: **“When the PCM is commanding a component ON, the voltage potential of the circuit will be LOW or near 0 volts. When the PCM is commanding the output circuit to a component OFF, the voltage potential of the circuit will be HIGH or near battery voltage”**. OK, so the display on the scan tool should switch from low to high depending on whether or not the circuit is being commanded on or off. Easy enough. Good thing I kept reading and found this: **“Each QDM has a fault line which is monitored by the PCM. The fault line signal is available on the data stream. If the QDM#1 fault detection circuit senses a voltage other than the accepted value, the fault line will go from a LOW signal on the data stream to a HIGH signal and the DTC will set”**. Good thing I kept reading! Looking back at the Tech2, here’s what I found:

QDM1 HIGH
QDM2 LOW
QDM3 LOW

Analysis from the “Sleuth” (Cont.)

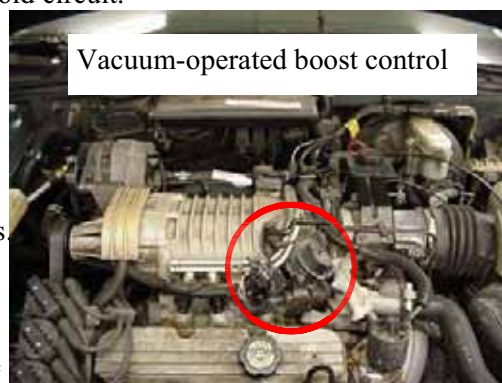
I decided to read a little further and find out what systems were involved. It appeared that the EVAP purge solenoid, the TCC apply solenoid and the boost control solenoids were all controlled by the QDM#1. According to the flow chart, I was instructed to disconnect the PCM connector, turn key “on” and check amperages in 3 different places:

1. EVAP purge to ground: .437amps
2. TCC apply to ground: .497 amps
3. Boost control to ground: 0 amps

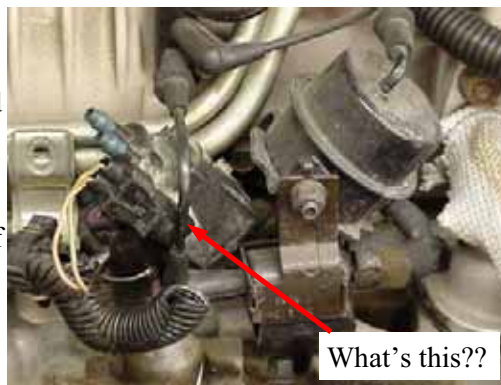
The spec said they should all read over .4 amps. As you can see from the above readings, I had confirmation that the problem was most likely limited to the boost control solenoid circuit.

It was time to pop the hood and look around. I noticed a new EVAP purge solenoid, so that must be the one the customer said had already been replaced. As I started looking for the boost solenoid, here’s what I found: (see pictures)

There was a solenoid hanging loose right next to the boost controls. The electrical connector was still plugged in, but it appeared there should be 2 vacuum lines going to it that weren’t there. What was going on? After looking at it for a few seconds, I realized it was, in fact, an EVAP purge solenoid (probably the old one). Someone decided that they could just plug the old EVAP solenoid into the electrical connector for the boost control solenoid (in fact it fit) to test the system. The actual boost control solenoid was still mounted in it’s original position with the vacuum line still plugged in. At the time, I wasn’t sure why they didn’t opt to purchase a boost control solenoid and actually fix the car. However, after spending a lot of time on the phone trying to locate one, I could understand. My first 2 calls were to local parts stores. Neither of them “showed any listing”. Next I called the dealer. I was told they also “do not show any listing”. Matter of fact, the dealership parts guy told me there was no such thing. I hung up the phone and wondered if I was just having a “blonde moment”. So I went back to motoralldata.com and confirmed that the part I was chasing was called a boost control solenoid. Feeling more confident, I called the dealership parts guy back. I explained the location of the solenoid was directly underneath the large, black vacuum-operated bypass actuator valve. After more searching, he found nothing. However, he offered to fax over an exploded parts view of the engine compartment. What a joke! Could they make those parts any smaller? And then to try to read them after it had been faxed, well that was nearly impossible. A third call to the same guy (you can bet he was happy to hear from me again) found a supercharger bypass valve kit. I asked what was included in the kit, but he “wasn’t sure”. I really didn’t think the bypass valve kit was what I needed, since the solenoid was clearly a separate piece. I hung up the phone, grabbed my digital camera and took pictures of the engine compartment along with close-up shots of the part I needed. Then, I sat down at my computer and printed the pictures from motoralldata.com that clearly labeled the part as a boost control solenoid.



Vacuum-operated boost control



What's this??

Continued next month.....

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CONTEST!!!

FREE LTS training class to the GROUP who has the most technicians attend our September conference. Last year it was a close race between David DeCoursey's group from Massachusetts and the Professional Master Technician Association (PMTA) from Kentucky. We expect another close race again this year as the SAT group had a strong showing as well.

Here are the rules:

1. Your group **MUST** be registered in advance with Michele by calling 888-809-3835 or sending an e-mail to: michele347@juno.com You may **NOT** show up the day of the conference and register your group.
2. As your people register for our conference, **MAKE SURE** they fill in the blank on the registration form for "group affiliation" so they will be counted with your group.
3. **Note: If you register online, you will need to put your group name in the "comments" section of the online registration form.**
4. The totals will be counted in advance, so make sure you follow the above rules so everyone gets counted!

The winning group will receive a FREE LTS class of their choice in their hometown.

GOOD LUCK!