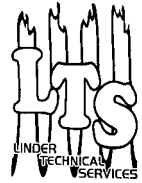


Networking

Newsletter



LTS Conference 2006 Sept. 8-10, 2006

The question has been asked several times recently, "Are you having a conference this year?" The answer is **YES!** We are currently putting together the final list of speakers and topics, but so far we have confirmed that John Thornton, Scot Manna, Wayne Colonna and Craig VanBatenburg will be speaking this year. By popular demand, we are working on adding a Saturday management seminar and hope to have more details soon. We are really excited to have such a great line-up of speakers with more additions to be announced soon. Updates will be announced here in our newsletter and also online at: www.lindertech.com

CONTEST.....CONTEST.....CONTEST.....CONTEST.....CONTEST.....

This idea was brought to us by Ryan Kooiman, a conference attendee from last year. He is a member of a group that meets on a monthly basis for training. He wanted to have a contest to see which "group" could get the most members to attend our conference. We decided that was a GREAT IDEA. Here are the rules:

1. To be considered a "group", you must meet on a regular basis (monthly, bi-monthly or quarterly)
2. Your group must be registered with Michele IN ADVANCE
3. When your members sign up for the conference, they must make a notation on their registration form that they are with your group. No last-minute additions after registration
4. To win, your group must have a minimum of 10 attendees at our conference this year
5. The group with the most attendees (over 10) wins!
6. The winner will be announced on Saturday night during our conference

So, what do you win? The winning group will receive a FREE one-night (4 hour) seminar by either Jim Linder or Doug Garriott (your choice) in their home town. Seminar fees, travel expenses and handouts all included! Don't forget to register your group with Michele. She can be reached at: michele347@juno.com or 888-809-3835. Example of a group would be: PMTA (Professional Master Technician Association in Lexington, KY), WAT (Wisconsin Automotive Technicians). Don't forget, if your group wishes to participate in this contest, you MUST register your group in advance with Michele!

CONTEST.....CONTEST.....CONTEST.....CONTEST.....CONTEST.....

For every SET of injectors purchased between June 1st and August 1st, you will receive a raffle ticket good for a chance to win a free seat at our upcoming technician conference on Sept. 9-11, 2005. This is a \$349 value! Fill out the ticket and return it with your injector cores to enter. All entries must be received by Aug. 15 to be eligible. We will draw one winner for every 100 tickets that are returned, so your chances to win are good!

****Offer good ONLY on SETS (4, 6, 8 or 10) of injectors or GM CSFI and CPI units. Throttle body injectors, service kits and other fuel-injection related products do not qualify.***

*****Hotel and any travel expenses are not included.***

From the “Sleuth”, Michele Winn



This month’s case study is a 1996 Pontiac Sunfire w/ 2.2L engine and 165K miles on the odometer. The customer was referred to me from a local garage who had looked at the car and decided the PCM needed to be reprogrammed. Before I get too far into the story, let’s start at the beginning.

The customer took her vehicle into a local shop because it idled rough and died at times. The local shop checked it out, replaced plugs and wires (and possibly other items) and decided from the scrambled scan data that the computer needed to be flashed. The local shop referred the customer to me to reprogram the PCM. I believe they really referred her to me simply to get rid of her! Maybe because they didn’t know what was wrong with the car, or maybe because she was just one of those customers you don’t want to continue to deal with. Either way, she ended up calling me. She explained her complaint and wanted to know the cost of PCM reprogramming. I quoted her my normal price for PCM reprogramming (\$50), but made sure to give the disclaimer that I was not responsible for the car if that didn’t fix her problem. She sounded stunned to hear that she had already paid the local shop \$60 to look at her car and I implied a PCM reflash might not fix the car. Keeping in mind her description of scrambled scan data, rough running and stalling problems, I did a search on Alldata for TSB’s with similar complaint just to make sure there wasn’t a TSB calling for a reflash to fix this problem. As you might have already guessed, I found nothing. Long story short, she agreed to pay my regular fee of \$90 for me to take a look at the car. And so it begins..... I quizzed her when she dropped off the car:

Q: Is the MIL on?

A: Yes, but it’s been on for at least 6 months

Q: How often does it stall?

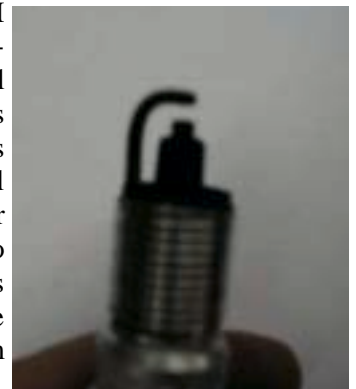
A: Well, I live about 5 miles away and it cut off 3 times, but it always starts right back up

Q: Do you have any warning before it stalls?

A: No, not really, sometimes it shakes a little

Off I went into the parking lot for a test drive.....crank, crank, crank, no start. Hmmmmm. She just said that even when it stalls, it starts right back up. Let’s see.....crank, crank, crank, no start. Strange. She didn’t mention anything about it being hard to start. Just for kicks, I held pedal to the floor and cranked the engine. Would you believe it started right up! However, the engine was shaking so violently that it looked like the car had been equipped with hydraulics and I was purposely bouncing it up and down. I decided that a test drive (even just around the block) was a bad idea, so I pulled it into the shop.

The first thing I did was pop the hood and look around. As badly as it was running, I thought it was a good possibility that I might find a dangling plug wire. My visual inspection didn’t show anything but a few new parts. Since I felt that the vehicle was running very rich, I wanted to take a look at the injectors and spark plugs. The injectors on this 2.2L engine are known for leaking externally and I wondered if some of that extra fuel might be draining down into the cylinders. After pulling off all the injector electrical connectors and taking another good visual inspection, I didn’t notice any sign of leakage. While I had the injector harnesses removed, I decided to also check the resistance of the injectors. It is much less common to see one of these type of injectors short out, but still a possibility. All were 12.2 or 12.3 ohms except #1 which was 11.6 ohms. Yes, according to our spec of 12 ohms, this was a problem, but was it THE ONLY problem? I decided to pull spark plugs to see their condition. If the #1 plug was the only one that was wet, I would pursue the injector issue. If they were all wet, then I would make note of the injector problem and continue with diagnosis. As it turns out, none of them were actually wet with fuel, but all were black, sooty and smelled of gas.



From the “Sleuth”, (Cont. from page 2)

My next step was to grab the Tech2 and check scan data. I was curious about the customer’s comment about the “scrambled data”. The first thing I found was 4 stored codes:

P0106: MAP sensor performance

P0107: MAP Sensor Circuit Voltage low

P0121: TPS Circuit Insufficient Activity

P1171: Fuel System Lean During Acceleration

I noted that all had passed & failed since codes were last cleared, the P0107 had passed this current ignition cycle and the other 3 had not been checked. I wrote down the codes and moved on to the scan data itself. I didn’t want to concentrate on these codes right away since I knew the P0107 had “passed” this cycle and the car was still running badly. Once again, that might be a problem, but was it THE problem?

I always make it a habit of looking at scan data KOEO. That probably started back in the late 80’s and early 90’s when you would sometimes find a bad ECT sensor on a GM product just by looking at KOEO data. I still do that today, but truthfully, I rarely see anything that sticks out. However, on this day I noticed that my ECT and IAT sensors were reading about 80 degrees apart. She only drove 5 miles, it’s cold outside (40 or below) and all I did was start it up and drive into the building. Maybe the engine isn’t completely cold, but it’s cold enough that I expected the 2 sensors to be closer in temp. than they were. I also noticed that my MAP voltage was 3.54V and also showed 77kpa. Now I’m able to remember a lot of specs, but it seems like almost every time I look at data with KOEO, 99kpa seems to stick in my mind. I wasn’t positive what the MAP voltage should be with KOEO, but I would have felt better about seeing closer to 5V. What’s next? Well, I did what I always did when I thought I might have a bad ECT. I unplugged it to see if the PCM recognized it. With the ECT unplugged, it now showed -40 degrees on the scanner, so I felt pretty confident that it was a problem with the sensor or wiring, not with the PCM. I also noticed that with the ECT unplugged, the MAP readings went to 0V and 10kpa. I was really confused. Why did unplugging the ECT sensor effect the MAP readings? At that point, I decided to do 2 things:

1. Check Alldata again for TSB’s regarding rough idle, MIL on and these stored codes
2. Get a wiring diagram

My TSB search found something interesting. Recall# 99088A:

Complaint: Check Engine Light on, Engine Runs Rough.

Correction: Inspect, Clean / Replace and Seal PCM & Install Protective PCM Shield Assembly.

Vehicles Affected: 1995 & 1996 Sunfires located in 15 High-Corrosion States (CT, IL, IN, MA, ME, MI, MN, NH, NJ, NY, OH, PA, RI, VT)

Service Procedure: (I have condensed the procedure) Disconnect PCM harness and inspect green weather-pack seal. Visually inspect PCM for signs of corrosion or debris. If corrosion is present, replace PCM and install PCM shield assembly.

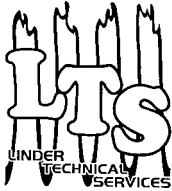
After reading the TSB, I was curious about the condition of the PCM. If the PCM connectors were corroded, and some of the corrosion from road salt & grime had even gotten inside the PCM, it could definitely cause problems. I decided to take a look. The Alldata component locator showed it was located in front of the right front tire assembly (approx. 12” from the ground). I’d like to know what engineer thought that was a good idea! I had to remove the right front wheel well splash shield along with some of the splash shield underneath the front of the vehicle. The outside of the PCM looked fairly clean, but when I removed the first connector, a lot of white, powdery corrosion fell out onto the shop floor. AHA! Maybe this car does need a PCM! I had a pretty good idea that when I called the local parts store, they would want me to give them the service # off the PCM, so I decided to go ahead and remove it. As I “gently” tugged on the remaining 2 PCM harness connectors, I noticed a couple of unusual things.

Continued next month.....

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You can find us at: www.lindertech.com. Have you explored the **FUEL INJECTOR SERVICE** section? Are you looking for information that can keep you up-to-date with fuel injector issues and fixes? Go there and scroll to the bottom of the page where you will find a download for the Injector Information Packet. It has the latest information about problem injectors and fixes. It also explains our reconditioning process and gives an in depth procedure for doing an On Car Fuel Injection Service. There are tech tips regarding GM CPI and CSFI systems. There's a page with pictures to help you identify injectors by their manufacturer. Another page gives you a formula to use if you are trying to find the correct size of injectors for an engine. We also included Fuelish Tips From the "GURU", you know, all those little bits of info that we have heard before but sometimes forget. This makes good reading for the seasoned tech and is excellent material for the new tech also. So download your copy today!

Looking for something you read in a past newsletter? Go to the "newsletter" link from the homepage and then click on the "archives" link. You can scroll through month-by-month and see what topics were discussed in each issue. Then a simple click and you can download and print the issue you need or just view it on screen.

For the latest "Linder Manual", click on the "manuals, software and video" link on the homepage. Then click on the "manual" link. Scroll down to see a picture and get more information on Jim's latest collaboration with Jim Halderman. This Prentice Hall publication is a great reference for any shop. It covers all topics related to fuel and emission control systems and is correlated to the ASE and NATEF Tasks Lists for the Engine Performance test (A8) and advanced-level Engine Performance test (L1). It also includes numerous 'tech tips' and 'guru tips' that break up the text material.

