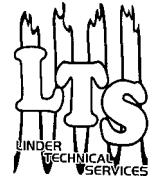


Networking

Newsletter



Tech Training

News from: National Automotive Service Task Force

Press Release: April 4, 2003
For Immediate Release

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Auto Manufacturer Service Websites Launched

Arlington, VA. All auto manufacturers are now offering service information via the Internet. In the next few days, all OEM service websites will be listed on the NASTF website, and links to them will be provided there, too. The OEM websites are:

Acura – www.ServiceExpress.Honda.com
Audi – <http://erwin.audi.de>
Chrysler/Dodge/Eagle/Jeep/Plymouth – www.techauthority.com
Ford/Lincoln/Mercury – www.motorcraft.com
General Motors – Buick/Cadillac/Chevy/Geo/GMC/Hummer/Olds/Pontiac/Saturn – www.gmtechenfo.com
Honda – www.ServiceExpress.Honda.com
Hyundai – www.hmaservice.com
Infiniti – www.infinititechenfo.com
Isuzu – www.isuzutechenfo.com
Jaguar – www.jaguartechenfo.com
Kia – www.kiatechenfo.com
Land Rover – www.landrovertechenfo.com
Lexus – www.techinfo.lexus.com
Mazda – www.mazdatechenfo.com
Mercedes Benz – www.startekinfo.com
Mitsubishi – www.mitsubishitechenfo.com
Nissan – www.nissantechenfo.com
Porsche – <http://techinfo.porsche.com>
Saab – www.saabtechenfo.com
Subaru – www.subaru.com, click on “home” and then “technical information”
Suzuki – www.suzukitechenfo.com
Toyota – www.techinfo.toyota.com
Volkswagen – www.erwin.vw.com
Volvo – www.volvotechenfo.com



The National Automotive Service Task Force was established in 2000 to facilitate: (1) the identification and correction of gaps in the availability and accessibility of OEM automotive service information; (2) technology training for technicians; (3) availability of both OEM and generic diagnostic tools and equipment; and (4) communication outreach to automotive service professionals. Go to www.nastf.org for details.

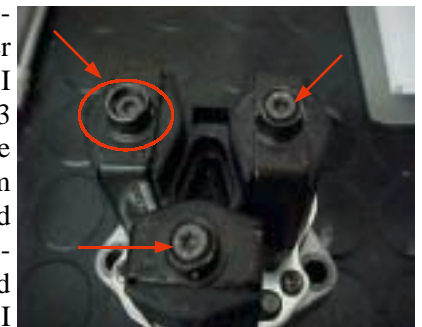
Analysis from the “Sleuth”, Michele Winn



Before I begin a new cast study, I would like to briefly go back to the vehicle we talked about last month. It was a 1993 Chevy Lumina w/ a 3.1L engine with MIL on and stored code 32. To refresh your memory, the flow chart quickly guided me to a faulty EGR valve which had 2 of the 3 solenoids were stuck open. I slammed a new one on, cleared the codes and took the vehicle for a brief test drive (this will come back to haunt me). The customer drove it over the weekend, the MIL came back on and the vehicle was running very poorly. A quick scan showed another Code 32 What now?! The only way I could figure the Code 32 would cause the vehicle to run badly is if one or more of the solenoids were stuck open again. I pulled the valve back off and found all 3 were seated. The EGR system on this vehicle isn't that complicated, so I must have overlooked something. I went back and checked the EGR passages for a second time and found no problems. I decided to put the valve back on, grab the Tech-2 and use the bi-directional functions to activate each solenoid and watch for an rpm change. I checked all 3 at 2000 rpm. #1 & #3 showed an rpm change, but nothing happened when I switched on #2. I looked at all 3 when I had the valve off earlier and they all appeared to be seated. So, was #2 stuck closed? With the valve in my hand, I manually opened each solenoid. #1 and #3 opened with very little force. With lots of pressure behind #2, I could just barely get it to raise off its seat. I had never seen a problem quite like this before, but I went ahead and got a new valve. This time, there was noticeable change when I exercised all 3 solenoids with the Tech-2. Yippee! I'm finally done with this car, but I forgot, it runs bad too. The customer thought it ran worse when it was hot, so I pulled it outside and let it warm up for a while. When I went outside to take it for a drive, I could hear the distinct sound of spark jumping under the hood. Could I really get that lucky? I popped the hood and sprayed down the wires. The car almost died and I could see spark jumping in several places. No need for a test drive until the spark plug wires were replaced. When the customer returned to pick up the car, they mentioned that they had just replaced those wires over the weekend with Brand X (name left out to protect the innocent) and the car had been running badly ever since. OK. Let's go back to the EGR valve. I was trying to figure out what caused the #2 solenoid to only barely open while the others functions properly. Was there a piece of carbon stuck behind it not allowing it to open fully? Let's look. The picture on the left shows the top removed from the valve. Noth-



ing binding or sticking. In fact, with the top removed, it seems to be working perfectly. After reassembly, I still had the same problem. As I was looking at the valve, I wondered what the 3 torx head bolts were for (see picture to the right). Even more, I wondered why two of them seemed to be level with the top of the valve and one seemed recessed. Oddly enough the recessed torx was the one connected to solenoid #2. Just for grins, I thought I would see if I



could turn it. Not only did it turn, but unlike the others, it was loose. I turned it until it was about even with the others and AHA! Now the #2 solenoid opens just as far as the others! Turns out this was improperly adjusted from the factory.



OK, on to this month's new case study. As promised, this is a 1996 Chevy 1500 Truck with a 4.3L engine, manual transmission and lots of miles. Customer complaint: Extreme lack of power on hard acceleration. The fuel pump was replaced about 1 yr. ago. The MIL was on with a stored codes PO171 and PO174 (lean fuel trim both banks). Test drive confirmed a severe lack of power and both front O2's would bottom out at 0mV and remain there for several seconds (hence the codes). The quickest thing to do was hook up a pressure gauge.

Continued bottom of next page

Fuel Injection Service Update from the “Wizard”



At our last training session, a technician asked if we had the o-ring for the 3100 “M” engine fuel rail crossover tube. While I was looking at the piece of one that he had brought in, he asked if other technicians were having problems with the crossover tube o-ring when installing injectors. His comment was that sometimes the rail developed a leak after injectors were installed. I hadn’t been asked for the o-ring before so I was unaware if the problem was happening to any one else.

Just about a week after that conversation, Michele scheduled a car into the shop for a fuel leak. The vehicle was a 1995 Chevrolet Beretta 3100 “M” engine. The customer had purchased a set of our “Reconditioned” injectors and installed them himself. He stated the front and back injectors on the right side were leaking. Within a few minutes of getting the car in, Michele confirmed the fuel leak. It did appear it was the injectors on the right side of the engine. She pulled the rail and found that the leak was coming from the crossover tube. (The pictures at the right show the bottom side of the fuel rail where the crossover tube fits into the rear part of the fuel rail) It also appeared that the crossover tube was not fully seated in the rail. Searching our “rail farm” we discovered that the customer had left off the retainer that holds the crossover tube into the fuel rail. We robbed a retainer, installed it on the rail and reinstalled the rail in the vehicle. Michele pressurized the system and the leak had ceased.

These two situations made me think that I had better get some o-rings in stock! So, LTS now has the O-ring for the 3100”M” crossover tube. The next time you order a set of injectors for the 3100 “M” engine, you might want to get an O-ring or two, just in case.



Bottom side of the rear portion of the fuel rail where the crossover tube fits.



View with crossover tube removed and o-ring exposed

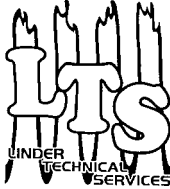
Analysis from the “Sleuth (cont. from page 2)

KOEO pressure was 56psi. Not great, but within specs. At idle, the pressure went down to around 52psi. The symptom made me think I might have a bad fuel pump, but since the pressure was good and the customer said it was a fairly new pump, I wasn’t ready to condemn it. I decided to take *another* test drive with the pressure gauge installed to see if the pressure would drop off under the lack of power situation. To my surprise, the pressure remained constant! At this point I had wasted about 1/2 hour and hadn’t proved anything! Sometimes the “right” tool for the job isn’t always the “easiest” to use. In this case I wasted more time trying to avoid hooking up the volume meter than it would have actually taken to hook it up. I gave in and got out the CODA volume meter. Jim uncovered the dyno and we ran the truck under slight load to try and simulate the condition. At idle, the volume was around .45 US Gal/min which is good. Once a little load was applied, the volume started to drop off until it was down under .1 US Gal/min. So, it turns out I had a bad fuel pump. Not only did I waste time trying to avoid using the proper equipment, but I let the known past history of the truck influence my diagnosis. Sometimes it’s better NOT to know what’s been done to a vehicle before you start working on it.

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Stay tuned next month for an update on the AC Delco Technician of the Millennium Contest!

NASTF Report: (cont. from front page)

As you may have noticed on the opening page in this newsletter, all the OEM's have finally released their offerings of "service information" available via internet. We (LTS) will be testing each and every web site over the coming months and documenting our findings. We have already used some of the sites to help repair problem vehicles and use some of the information in our training sessions.

We have also purchased some of the training materials which are available in book form, on CD-rom, and also as actual instructor training packages from many of the sites.

Some of this material has been very useful and some hasn't lived up to our expectations. As the year progresses, we will use each and every site in an actual case study and put together a class with our findings. This class will be offered at the ASA (Automotive Service Association) CARS convention to be held in Las Vegas during the first week of November.

If you have had experience with any of these sites, whether it was good or bad, we would like to hear your stories. Please drop me an e-mail at: jimlinder@juno.com or give me a call toll free at: 888-809-3835. We value your input with regards to this project.

Jim Linder