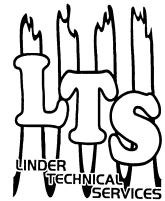


Networking

Newsletter



Jim Linder
The Injector “Guru”

FIRST QUARTER REPORT FROM THE “GURU”

WOW is all I can say for the first quarter this year! Just putting together a review of our first quarter wears me down a little more. Here is a brief first quarter review of LTS activities:

- We were told in January that we could finally take over the rest of our building. After ten years in one third of the building we were more than happy to say yes, let's do it. Many hours of cleaning and painting took place to get the building in shape. We even had 225 people over for dinner during our March Ignition workshop. We have now begun to settle down and get adjusted. *If you haven't seen our latest addition, feel free to stop by for a tour.*
- Gasoline Alley training classes took off in February with a sold out crowd and included Michele (our latest instructor) taking a group. Our day time sessions filled up almost overnight. Amazing how something I once couldn't give away has become popular overnight. Just imagine a well-rested technician in a classroom for 6-7 hours during the day time (normal working) hours. Effective? You bet it is!
- A new Saturday class session was added for the PMTA (Professional Master Technicians Association). This is a year-long class using our existing DATA center curriculum and requires a commitment for the group to drive up (from Lexington, Kentucky), spend the night in a hotel and attend classes at our facility. I salute their commitment!!
- Our on the road seminars started with a bang at the “Florida days of Thunder” convention held in Orlando, Florida and sponsored by AVI (Automotive Video Inc.). After the Orlando conference we attended the ASA Vision show held in Kansas City, AASP training in Minnesota (lots of snow), Auto Value in Ohio, ASC South show in Ontario, California and classes in Raleigh N.C. That's six states and many thousand miles in less than 60 days.
- Also at this time we have completed three one-week “Guru” classes (the boot camp for serious technicians), including a special class for BMW service technicians. These three sessions consumed 144 hours of hand to hand technician training.
- Our first annual “workshop” for service technicians was held March 10th and 11th at Lincoln Technical Institute here in Indianapolis. (Thanks LTI). The response was overwhelming with 230 technicians attending from all over the U.S. (there were more techs from Canada than from Indiana). This ignition workshop had the best presenters, the best food and the best technicians in attendance.
- In our building expansion plans we added two new fuel injector flow benches to handle the increased demand for LTS fuel injectors and moved Doug Garriott (the injector wizard) to a larger work area and injector lab.
- One of my hobbies has been moved into our new building as “the teardrop trailer” shop. This location will build and restore Antique Teardrop Campers. At present we are three orders behind and making these little trailers as time permits.

Again WOW is my only thought after living through the last 90 days!

I will be gone most of the month of May on vacation in the Smokey's looking for more junk for “Bubba's garage and living in my '47 teardrop trailer pulled by my '56 VW beetle. Kind of cool going very low tech after this years start-up for a change. Just imagine..... no gas gauge, manual transmission, no ac, only two indicator lamps (oil and charging) and that almost Harley sound coming from 1600 cc's of air cooled power!

Analysis from the “Sleuth”, Michele Winn



When we left off last month, we were still in the disassembly process. The O2 had been installed and several sensors had been ordered. Almost everything was gone from the top of the engine including radiator and heater hoses, alternator, alternator bracket and belt, throttle linkabe and spring, ignition coil, distributor cap and wires and lastly the distributor. While I was taking things apart under the hood, Jim was inside the cab of the truck. This is where this month’s issue begins.....

- Jim got out the hole saw and cut a hole in the firewall. This is where the wiring harness will run through from the cab of the truck.

He drilled the hole and ran the harness in a little more than five minutes. Since I was still working under the hood, I think he felt guilty. So, he decided to do a little work on the fuel lines. The fuel tank on a 1966 Chevy Truck is located behind the seat.

- Remove the fuel sender located in the tank.
- We needed to add a fuel return line to the existing system, so he drilled a hole in the top of the fuel sending unit.
- Bend a tube to fit thru the freshly made hole in the top of the unit.
- Two-part epoxy was used to hold the return line in place.

The fuel sending unit (complete with pressure AND return line) was then placed back in the fuel tank.

- The next issue was to cut a small hole in the floorboard of the truck to run the return line. A rubber grommet will be added later.
- Then, on to fuel pump and inlet filter assembly.
- He assembled the fuel pump, inlet filter and small pressure hose on the bench.
- Next, he soldered connectors on the ground wire and power wire from the computer. Notice the type of soldering iron he is using. The tip of the iron is like a pair of scissors. You place the wire inside the open tip of the iron and squeeze the “hot lips” down on the wire to heat it up.
- We used shrink fit hose clamps to secure the red pressure hose to the pump. These clamps are easy to use and look really slick!
- Back under the vehicle to mount the fuel pump assembly to the frame.
- Drilled four small holes in the frame so we could mount the pump.



Now we have the fuel pump mounted, pressure line run from the tank to pump, return line connected, feed wire attached to the pump, ground wire secured to the pump and inlet filter installed. Now let’s take another look under the truck!

I stood on the passenger side of the truck and Jim fed the pressure and return lines up to me. We’ve got plenty of room and lots of extra hose to spare. So far, so good.



Analysis from the “Sleuth”, Michele Winn (cont.)

Day Four:

Now that we have the fuel pump hooked up and the lines plumbed, it's time to make sure everything is working. We connected our New Age fuel pressure/volume meter to the lines, grounded the pump to the alternator case and gave it power from a loose battery we laid next to the truck. I can hear it humming.....yep! We've got about .5 GPM (gallons per minute) of fuel. After consulting our latest fuel injection specification manual “The Wizard Book”, we found this to be within specifications. The “Wizard Book” comes complete with fuel pressure, volume and resistance specifications and is available on our website at www.lindertech.com.

Now we know that our wiring and connections are good. How about a quick leak check “Bubba” style.....A quick crimp on the return line sends pressure to almost 90psi. We said earlier that the pump we are using has the max. pressure capability of 75-90psi. Looks like we have a strong pump. Jim is under the truck during this high pressure test looking for fuel leaks. A minute or two later, he came out dry and declared the system to be leak free.

Next step: remove the intake. I decided to step back and let the “wizard” and the “guru” lift the intake off. I would hate to break a nail at this stage in the game ☺

During the flurry of activity around the truck, Doug (the injector “wizard”) has been diligently working in the injector lab. His job was to find us the appropriate size throttle body unit and set of TBI injectors, recondition them and have them ready to go.

Ok, back to the truck.

- We laid the new intake down and started all of the bolts. We will be installing new stainless steel bolts from ARP Professional Quality Fasteners, Part #434-2001.
- Now it's time to remove the water neck from the old intake, wire brush it to clean it up a bit and then paint it.
- Jim found an adapter for the fitting in the intake so the ECT (Engine Coolant Temperature) sensor that we had would screw into the intake.
- The ECT and water neck have been installed and it's time to tighten all the intake bolts.
- I referred to Alldata for proper torque specification and sequence. It called for 35 ft. lbs. Torque and a criss-cross pattern beginning with the middle 4 bolts, working toward the rear and then to the front.
- While I am tightening the intake bolts, Jim is inside the truck doing some work with the ECM and it's location.



Well, we have created an interesting problem for ourselves. It appears that with the water neck installed, the ECT is too close and we will not be able to attach the upper radiator hose.

Well, Jim went back to the local parts store to purchase a water neck with a hose that comes out the center, not off to the side. While he was at the parts store, I bolted the alternator bracket back on to the intake. I also put the alternator belt back on and tightened it up. Jim was back from the parts store with a different water neck. This one works perfectly!

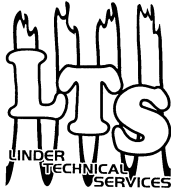


TBI Conversion will be continued next month.....

LINDER TECHNICAL SERVICES

4-D GASOLINE ALLEY
INDIANAPOLIS INDIANA 46222

Phone: (317) 487-9460
Fax: (317) 487-1868
Toll Free: (888) 809-FUEL (3835)
out of the (317) area code only



**AUTOMOTIVE
SOLUTIONS FOR
TODAYS TECHNICIANS !**

www.lindertech.com



GURU thoughts

It isn't often that I am willing to spend my day watching to a sales demo on a so-called "new" engine analyzer, but I agreed somewhat reluctantly to look at Bob Halfman's latest EAS (Engine Analysis System) from CODA.

The theory is that ALL mass entering a engine must exit the engine and by using that mass with some very creative software we could see any and all problems with the engine. Well, the demo lasted from 10:00 in the morning to a little after 5:00pm and I will admit to being somewhat hard on Bob, but when the smoke cleared and two cars were analyzed using this new method of looking at the engine, I have to admit, I was impressed!

The CODA EAS (Engine Analysis System) is the first tool of its kind to tie the Air/Fuel ratio of an engine to the output of the engine management system and then analyze the combustion efficiency of the air/fuel charge.

This blending of engine management analysis, ignition system integrity and engine mechanical condition diagnostics allows the service technician to quickly identify problem areas.

The ability to zoom in on a problem makes the tool a must for fast, accurate engine diagnostics and increased workshop profitability.

Best of all, this tool is available as a complete system or will interface with your existing gas bench.

Ours will be installed at the training center in the next couple of months. Stop in for a live car demo or call Bob Halfman at 1-815-741-8963.

Jim Linder