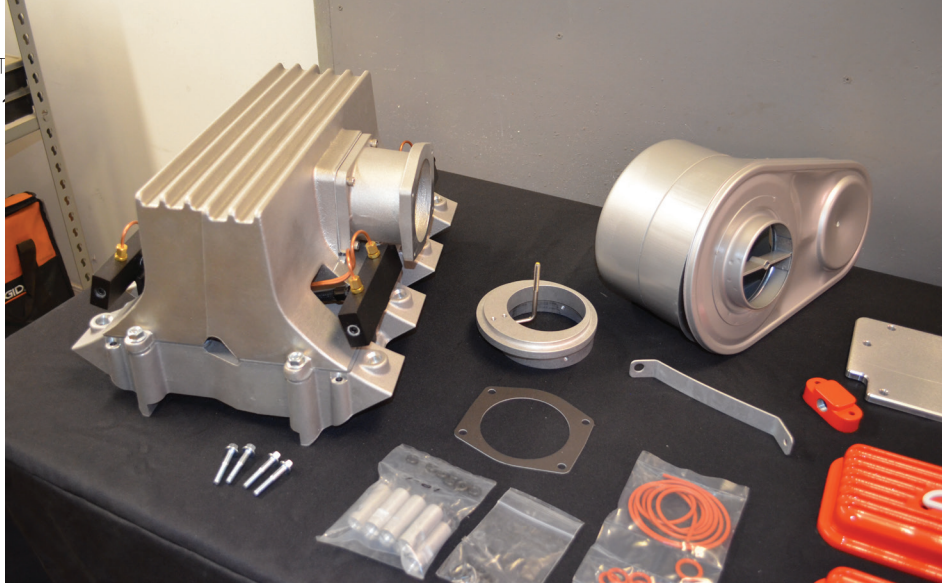
Tech Talk

NEW TO OLD
Part Two
By Ian Bowman

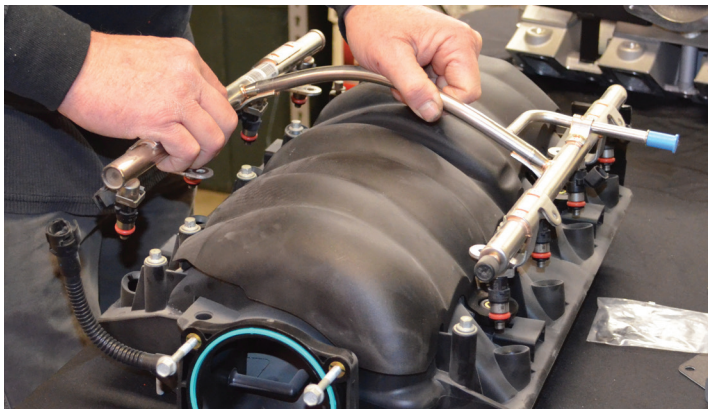


In our last article, we covered the first part of the install of the LS Classic dress up kit for the (now) 2021 Danchuk Tri Five Nationals Golden Star Giveaway car's LS3 crate engine. For those who followed the first article, a keen eye will have noticed that the plastic intake manifold was discarded in the last photo. And to be perfectly honest, the LS Classic intake really is the crown jewel of this setup.

LS Classic wanted to take it to the next level by offering intake setups with a retro look, but fully functional at the same time without any cheesy covers or gimmicky dress up pieces. Their cast aluminum Fuelie intake shown in this article is a work of art in itself, a masterpiece of engineering that combines performance, appearance, and function in a package that doesn't look like it belongs under the hood of a new Camaro or Corvette. And this '57 Fuelie intake isn't the only one they've got to offer, there are units made to mimic a '62 slick-top fuelie, a '63 "crossed flags" unit, a single four barrel "classic" combo, and even a twin throttle body equipped intake meant to mimic a tri-power big block intake! If you're looking to make it appear old, these guys have every base covered, without sacrificing performance, or drivability. On top of that, they even offer a "correct" air cleaner to complete the look you're after!

So, let's see just how easy this sucker is to install....

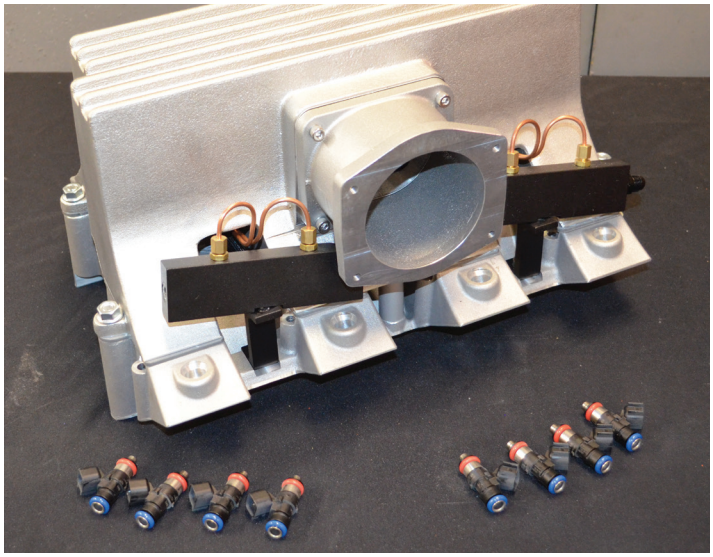
Since we removed the intake in the last article, that's where we'll start. The LS Classic Intake and air cleaner comes with everything you see here. You'll only need to reuse a few parts from your original intake, which brings us to our first step.



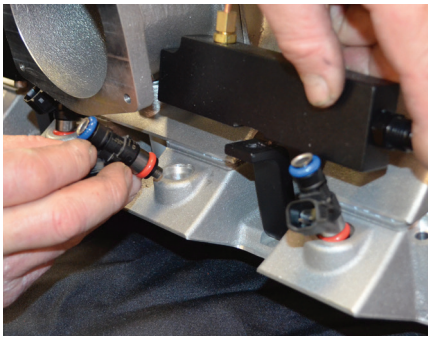
Go ahead and remove the throttle body and the fuel rails/injectors. Unless you're doing significant engine upgrades at the time of the intake manifold, the stock injectors and throttle body supplied with your engine, such as our 376/480 crate motor, will be just fine.

With the rails removed, you can remove the retainer clips that hold your injectors in, and remove them from the rail itself.

You'll need to unbolt the fuel rails on the LS classic intake in order to install your injectors. LS classic went through quite a bit of trouble to make these billet aluminum pieces look like the factory injector blocks. Note the copper faux injector lines, completing the look.

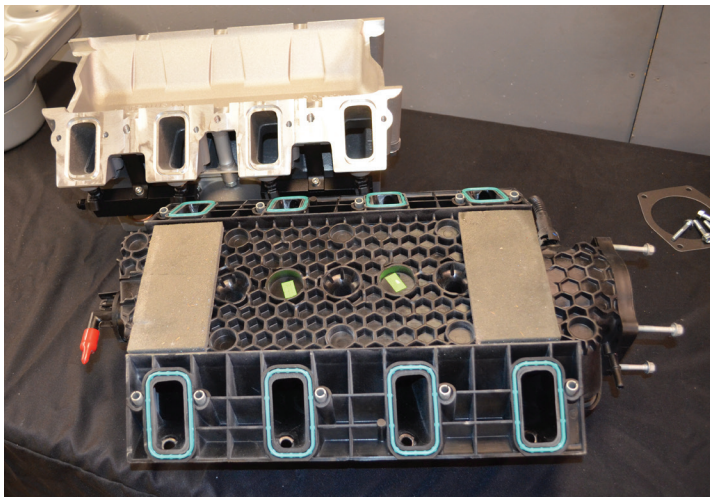


Injectors are not location specific, but simply need to be installed nozzle (in this case, red o-ring side) down.

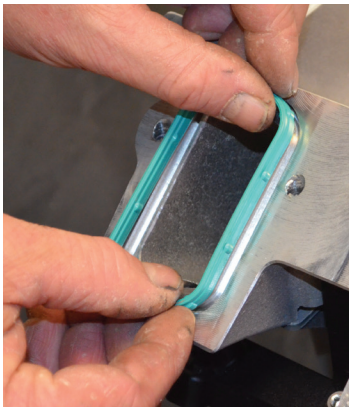


Set the injectors into the manifold first, then install the rail on the top side. A thin coating of petroleum jelly on the injector o-rings will help them install without pinching/rolling, and will prevent those pesky leaks. You'll want to leave the bottom o-rings out of the intake at this point.

With the upper plenum removed, you can see the feel lines to each injector and rail. With the Corvette-style filter/regulator assembly we used on our '57, the return comes off the assembly itself, so the fuel rails are "dead headed", meaning we feed both rails, but don't return from them.



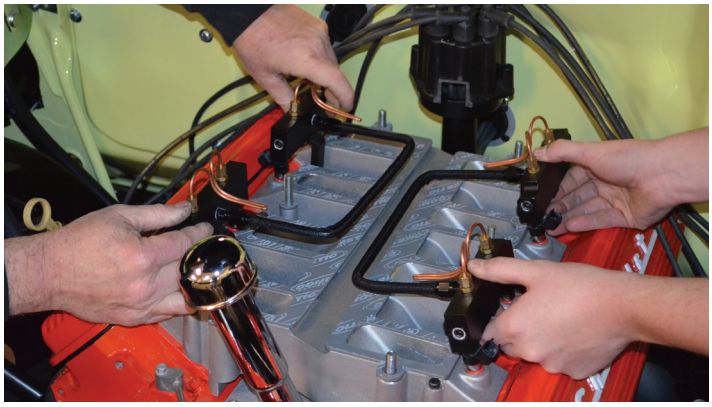
Put a ring on it! With your injectors done, we'll move to the bottom. LS intakes utilize an o-ring to seal the intake to the head as opposed to the paper gaskets a standard small or big block would. Nice thing is, they're completely reusable, and provide an ultimate seal.



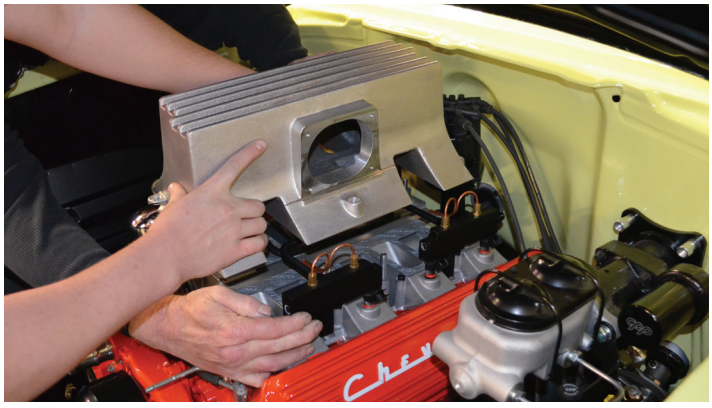
Use a small pick to remove the rings from the factory intake, then press them firmly into the CNC machined recesses in the LS Classic intake. They'll stay in place while you install with no problems.

Once the o-rings are installed, the lower intake can be bolted into place. Do take note, these are VERY small bolts, going into an aluminum head. Care must be used to not break them off and/or strip the threads. These get tightened just north of hand tight, between 7-10ftlbs. Remember, all you're doing is compressing an o-ring, not squeezing down a paper gasket.

Nice, Cometic gaskets are provided for the upper-to-lower seal.

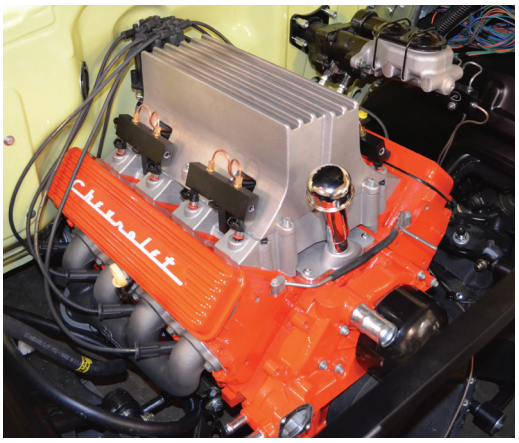


Before you bolt the upper plenum on, you'll reinstall the fuel rails/injectors. Leave them loose, as it'll help with getting the hoses lined up when setting the upper plenum on.

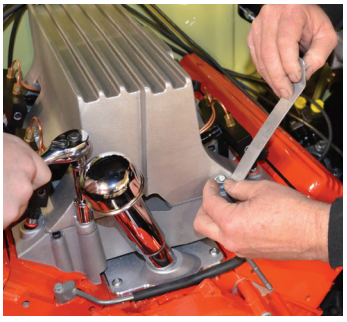


Setting the plenum on can be a two man job, with two hoses and four injector rails to manage. Having a buddy handy will make quick work of lining everything up.

Finally, starting to look like something!

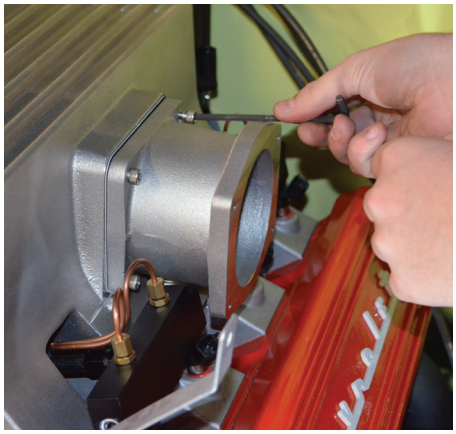


With the plenum set on, you can start bolting it down. You'll notice the long bracket going on the driver's side, this is the support for the air cleaner. It helps to leave this front bolt somewhat loose until you've got the air cleaner installed.

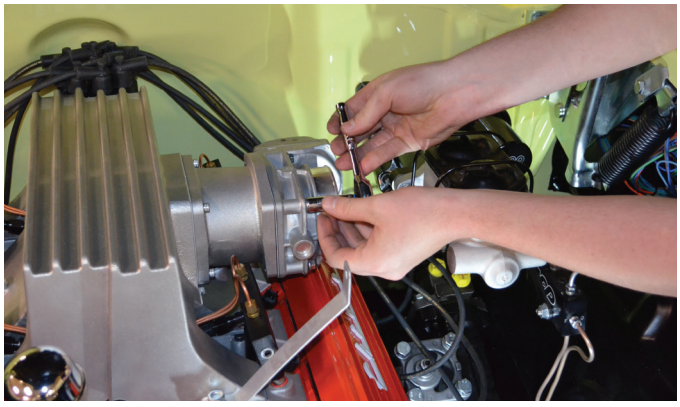


One thing that we had to do for our application was to add a vacuum source for the MAP sensor. The newest version of the LS Classic 57 Fuelie intakes now include two vacuum ports on the back side to accomplish this. The Holley Terminator

X-Max system we chose to manage this engine has a built-in map sensor, so all we had to do was run a vacuum line to the computer. If you're using a different management system, or even a stock computer, this can be accomplished by running an external style MAP. Either way, you'll need a manifold vacuum source.

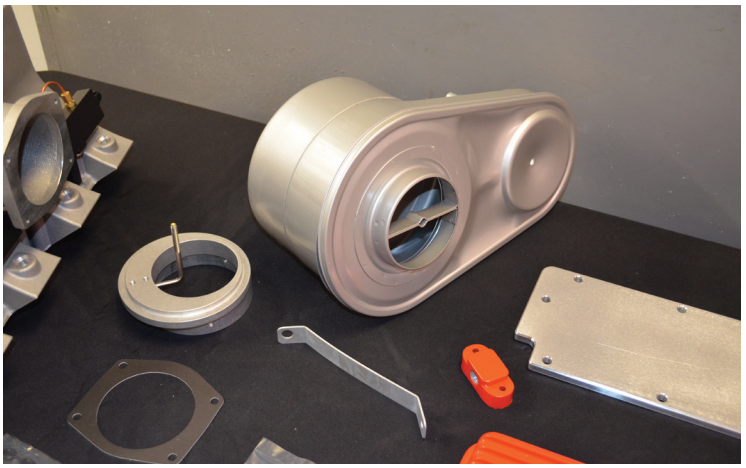


Once your vacuum fitting is completed, install the throttle body adapter using the supplied hardware.



....then install the throttle body itself. Again, we chose to use the factory drive-by-wire throttle body. Our Terminator X-Max computer is made specifically for DBW, so the connection is a true plug-and-play. Combine that with a Woody's Hot Rodz LS pedal bracket (P/N WHR-30401) to mount the pedal provided in our Connect and Cruise package, and this installation only gets easier!

With the throttle body squared away, we move along to the icing on the cake: LS Classic's original style air cleaner. No hokey open element air filters here, we wanted this baby to look as original as possible, and they've got just the trick. Note the aluminum adapter with the stud to mate this original intake to our LS3's throttle body. (*See Top Right*)

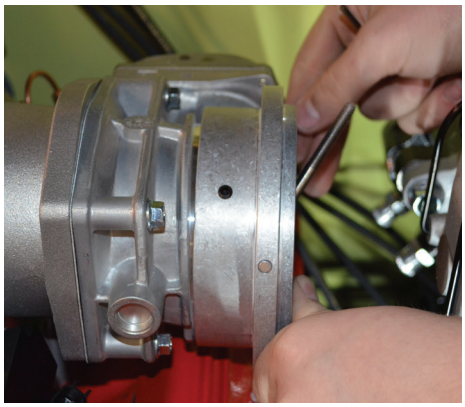


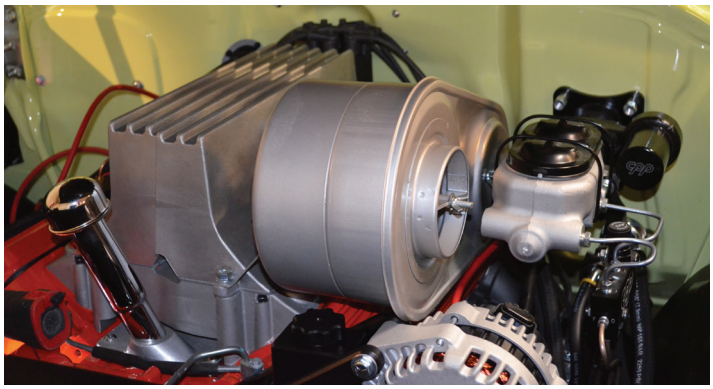
Being as there were no inlet air temperature (IAT) sensors used in 1957, you'll need to make a provision in the intake for such. We found a varia-bit to be the most effective tool for making this larger hole. No provision is needed for a mass air flow (MAF) sensor, as our Holley management will tune on speed density (part of the reason we chose said management system).

The IAT sensor is barbed, so it'll just get pushed in. The grommet you use can be universal, just make sure the IAT fits somewhat snug, as you definitely don't want it to fall out.

The LS Classic air cleaner comes with a white paper filter element with a glue-on weatherstrip seal.

With our housing completely squared away, the provided air filter adapter can be mounted. This piece locks on to the throttle body via a hex set screw.





....and with the adapter on, you can bolt on your air cleaner assembly. Note that power brake applications are *tight* for sure.

And a finished product shot as well! Note our use of LS Classic's accessory drive setup as well, a neat piece that minimizes the front drive, and utilizes a built-in power steering pump reservoir.