



Mark Brandy of Shreveport La. has had his Firebird for a long time; they chose not to drive it much do to the bad fuel mileage and drivability. They brought the Firebird to Street and Performance to give it a badly needed update and make it much more enjoyable to drive.

Out comes the old Pontiac engine and trans:and the beginning of a new life.



Jeremy Deramus cleans years of oil and dirt from the engine compartment and preps it for paint.



Mark purchased a low mileage 2004 GTO LS-1 engine with 4L60E transmission from S&P to have installed into the Firebird. The oil pan must be changed because all GTO engines have a front sump oil pan.



Shown is an 98-2002 Camaro/TA pan on the left and the GTO pan on the right. Notice the top of the standing Camaro/TA pan and the left side of the GTO pan.

S&P oil pans come with installation instructions or can be downloaded at S&P's website @ <http://www.hotrod-lane.cc/PDFFILES/oilpaninstructions.pdf>. GTO oil pans have the dip stick in the pan, but all others have it in the block so be sure to knock out the dip stick plug from the passenger side of the GTO block when installing a none GTO pan onto a GTO block.



The large power brake booster had to be changed to a smaller 7", in order to clear the LS engine.



The old coolant & oil sensors are removed from old Pontiac engine, because they will be used in the LS engine to control the factory gauges. Be sure to label all the wiring as it is removed from the old engine and **DO NOT cut any wires** until after the installation is complete.



The factory Engine stands are removed and replaced with Camaro engine stands. These can be found at salvage yards or you can get new ones from Year One.

The Gas tank was sent to Rock Valley (1-800-344-1934) to have the LS-1 High pressure fuel pump installed. The LS engine needs 58 to 60 PSI and putting the pump into the tank keeps it cool and prevents vapor locks.





S&P makes an aluminum mounting plate to adapt to the early Chevy style rubber engine mount. The plates come with all the bolts needed and are marked for the driver and passenger side. There are also mounting plates that will move the engine toward the firewall one inch and a new mounting plate for the 94-96 Caprice and SS Impala when installing the LS engines. Be sure to use anti-seize compound on all bolts to prevent electrolysis of the two different types of metals.



Left: Shows an early rubber side mount from a '70 307 Chevelle that has a slotted hole which can make installing the cross bolt easier.

Shown right is how the engine will mount, front to back, on the factory stands using the S&P engine plates. We will lower the engine into position to check the final fit.



Larry made the rear cross member for the 4L60E. Note the bends that let the exhaust system pass through the chassis.



Larry & Jeremy set the engine and transmission onto the mounts, then the 7" brake booster is bolted up to check for clearance.



The 29 year old radiator was replaced with a new Griffin Cross Flow radiator. The radiator itself is made from 2 rows of 1-1/4" horizontal aluminum cooling tubes, and a built in trans cooler. S&P mounted dual 10" electric fans to help keep things cool.



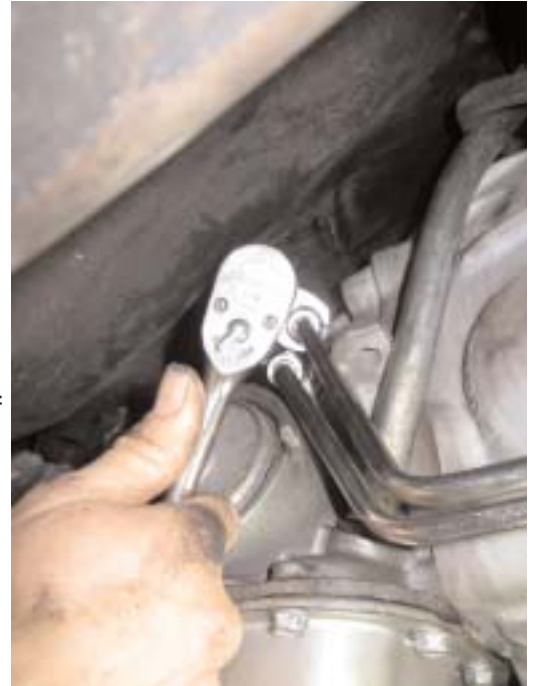
When connecting the heater hoses, the 5/8 rear hose bib closest to the firewall is the one that will have the shut off valve. This is the pressure to the heater core. The 3/4 front hose bib closest to the radiator is the return from the heater core.



Radiator hose #60867 is used with S&P 360/15 water neck.



Radiator hose #61351 is used for upper radiator connection.



Larry uses a set of S&P S.S trans cooler lines to go from the trans to the radiator.



Larry uses a new balanced drive shaft for the install; he also changed the gearing in the rear end to 3:73.



Factory GTO alt & power steering cleared the chassis ok but we had to install an S&P add on air kit. This kit is for all LS engines, even the truck engine.



GM pump uses a 16mm o-ring on the pressure side.



Lokar cables were used to hook up the throttle and cruise.



Larry makes up some S&P braided lines for the power steering. The gear box uses 18mm o-ring & 16mm o-ring to AN6.



GROUNDS, GROUNDS, GROUNDS!!!

Grounds are one of the most important steps to ensure a trouble free system. All grounds must be free from paint and grease, or use star washers to bite through to the bare metal. You MUST have the following ground connections;

BATTERY TO ENGINE or TRANSMISSION (even if battery is in the trunk).

ENGINE TO FRAME

ENGINE TO BODY



Original floor shifter cable bracket is bolted to the 4L60E trans.



A S&P 3" air cleaner was used. The 2004 GTO had a 3 pin mass air flow, but changing to the 5 pin mass air flow and coated headers will make about 390 HP.



Larry took the speedometer out and sent it off to Corvette Clocks by Roger. He restored it, plus upped it to 160 mph. You will need a Dakota Digital TAC interface if you use the S&P tail housing kit, to convert the 4L60E to a manual speedometer.



With the S&P GTO air cleaner & factory GTO top covers the engine looks like it was supposed to be in a Pontiac. The Firebird is now up to date with much improved fuel mileage, drivability and a lot more performance.

Street & Performance

Engine and accessories
479-394-5711
www.hotrodlane.cc

Year One

Engine Stands
1-800-950-9503
<http://www.yearone.com/>

Corvette Clocks by Roger

Speedo Restore
1-731-664-6120
www.corvetteclocks.com

Rock Valley

Stainless steel fuel tanks w/high pressure pump installed
1-800-344-1934
www.rockvalleyantiqueautoparts.com