

*Fuel Pump Replacement Adapter Plate & Inlet Tube Instruction*



After getting the plate back from the Laser Cutter, I took the drill press and drilled out the 4 mounting holes to .312" dia. This allows the needed "slop" to insure no side loads are imposed on the fuel inlet seal at the filter canister.



You'll need a lathe to make the next part. It's basically a stepped sleeve that will fit "Through" the bigger hole in the mounting plate, matching the diameter of the pump outlet collar and will be bored to .500" dia. to fit the 1/2" stainless feed tube. Make sure the bore is a slight bit oversize so you can slide the 1/2" tube in easily, but not too easy. Also make sure the end is smooth and free of ALL scratches or burrs...it will need to be smooth to keep from hurting the stepped sealing washer in the filter canister.

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Make sure the newly made sleeve allows the 1/2" stainless tube to fit thru it and when you weld it in, it'll stick out the same as the stub on the fuel pump. Use digital calipers and keep it within .010" of the stock one in length from the plate surface.



Prototype version.

See the same stub design? Make sure all parts are de-burred and smooth, because the rubber sealing washer will leak if they're not!

Cut the electrical plug connector across this red line flush with the underside of the plug in. Be careful and don't damage the plug part. The rest is expendable. Inside you'll find two brass 'buttons' which you can solder to quite easily. Further on in this article you'll see the light I added to plug into the existing pump wiring connector.

This was the first prototype model I made from scrap pieces I had laying around the shop but it shows the "duplicate" stub that sticks out from the mounting plate. I decided to make a bigger plate that used all 4 screws to keep from imposing excessive side loads on the filter canister and causing leaks. This is just to show the stub end.

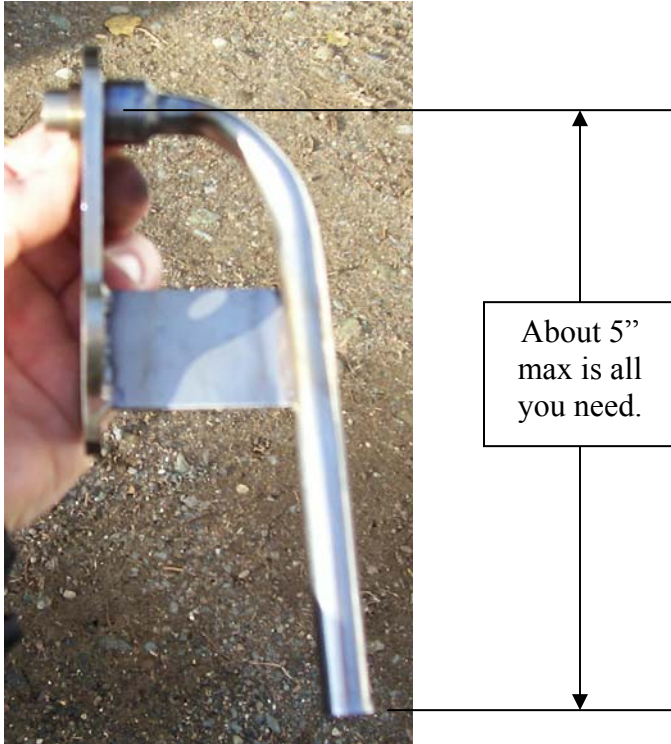
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This blurry picture shows the ugly bend and the sleeve all welded up and the tube support as well. I have since made better bends using a tubing bender made for 1/2" stainless instrument tubing and it turned out nice. Add the 3/8" dia. tube to this 1/2" piece and weld it tight. The rubber fuel hose will be feeding this line. I added a slight flare to the 3/8 tube to help the screw clamp seal the hose at pressure better.



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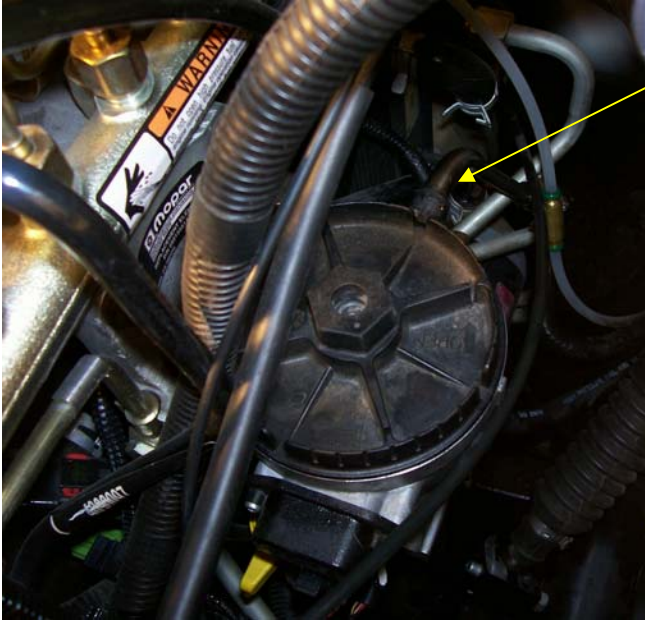


ALMOST DONE... This is a side view. Keep in mind that there isn't a lot of room to make the 90 bend so keep it tight as possible to the plate. Keep the length of the overall tube run to the same as the pump so the hose won't have kinks or sharp bends. It only needs to stick down about 5" max from the center of the sleeve item. Use a tubing cutter and trim this 1/2" off about 2" and add the reducing tube.



Here's the business side of the plate. The plate needs to be flat, smooth, and free of burrs. NO WELD is to be placed on this side anywhere. The welds all take place on the other side and must be done using the TIG process since this is all Stainless Steel.

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It's hard to see but this stainless tube is the finished product sticking out from the back of the filter canister. Getting the 4 socket head cap screws out and back in is a challenge since the allen wrench needs to be a short one and there isn't much room to work your big fingers back there.

After all of this is done, the computer will no doubt 'throw a code' of the "Control Circuit 'A' Low", which basically just means the ECM computer can't sense any load on the fuel pump wiring circuit, so... I just gave it a load using a light bulb.

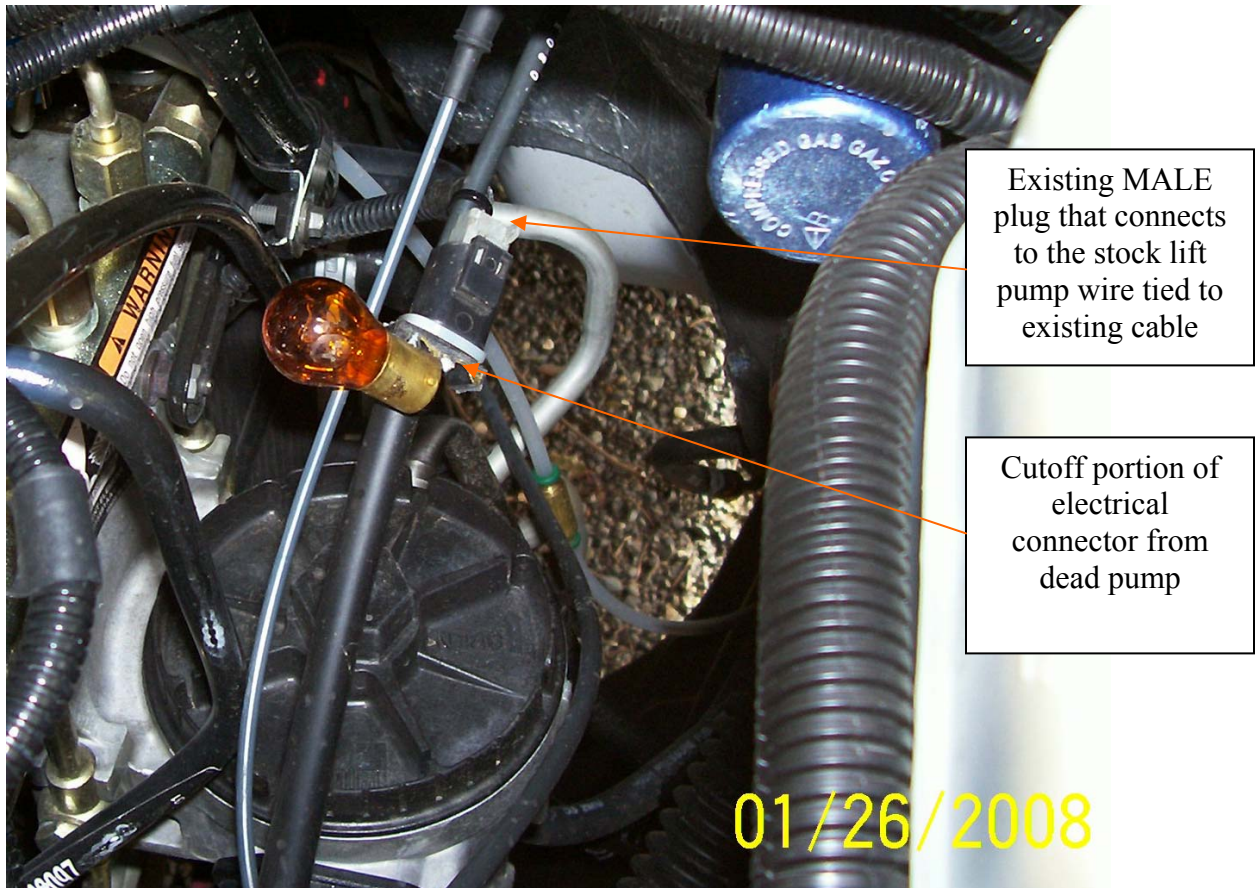
My first attempt during testing was to use some silicon and solder the wires and use the 'pins' I created to plug into the fuel pump wiring connector.



I have since cut the top wiring connector plug off the bad lift pump, soldered only 1 element of the light directly to the brass/copper contacts on the connector plug which I cutoff with a band saw. A little 'hokey' but it works great. I cleared the codes, and have never had another one set because of this.

NOTE: I suppose you could use a single element bulb but this is what I had in my tool box at the time, so I used it. Look at it this way, if the element burns out for some reason, I have a spare which only requires soldering the other contact point. I purposely used a bulb that wasn't clear to cut down on the light brightness under the hood, and the glow of the amber looks cool too. It gives me something to use as a "night light" when I raise the hood. Maybe a clear one would be better, you choose.

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***HOLLEY PUMPS***

***Now to the pumps portion, which I didn't have in the original first run copy of this how-to article.***

I personally hung 2- Holley 'BLACK' pumps on 4 separate rubber isolator straps and bolted it to an existing bracket under the drivers' side of the frame as shown in the following pictures. The wiring was NOT connected to the existing stock plug and wiring because I didn't feel the capacity of the circuit and wiring was sufficient to handle the loads of these 2 pumps. Instead, I ran a dedicated 12 ga. wire from the heavy duty connector plug all the way to the fuse & relay box and connected to a terminal inside that was "KEY-ON" so as soon as I turned on the key, I had fuel pump priming power for the injection pump. This let me sleep better and it wasn't a difficult thing to do.

Without any excessive "BOMBS" done to the truck that might required LOTS of fuel flow, I have run a single "BLUE" Holley pump on my personal rig and it has a stock turbo, stock injectors with 130,000 miles on them, and a Banks 6-Gun w/Speedloader which is claimed to add about 150 hp and 400 ft lbs of torque, and it keeps up fine. In fact... I keep a spare Blue in my tool box in a sealed plastic bag for those times when I

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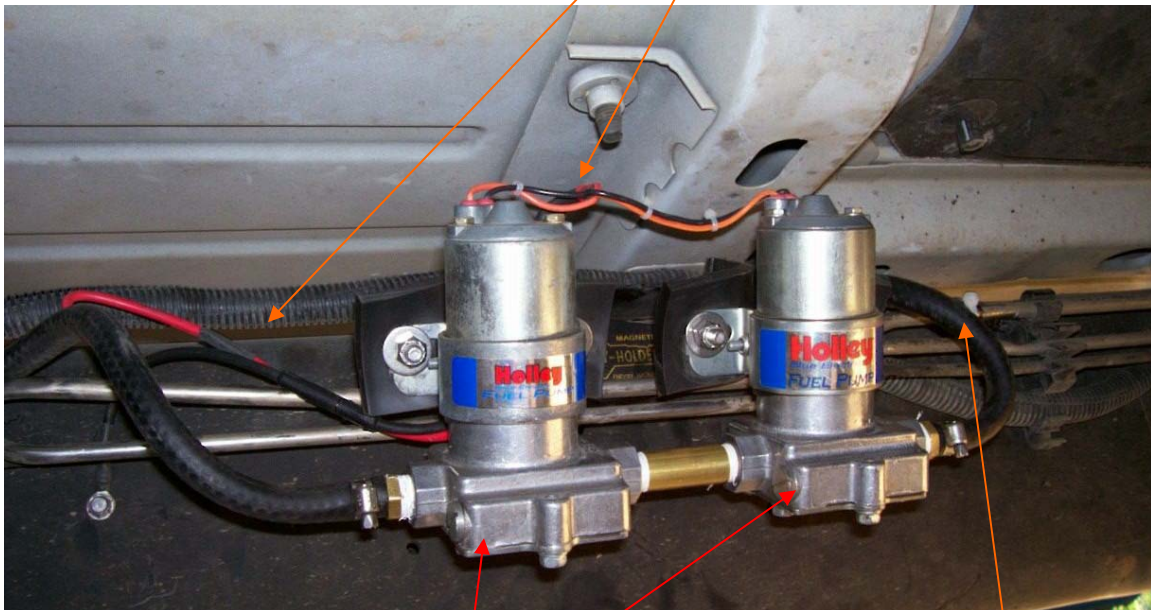
might need a spare out in the sticks or on the road, and so far...it's been in my tool box for the past 8 months!



“HOT” leads and wires that go to a heavy duty plug.

Rubber mounting straps and hardware.

Wire ties and heavy duty plug in connector.



Notice the BIGGER size pump base of the “BLACK” pumps. Even though I hung them in “BLUE” pump brackets. These also have easily adjusted in-pump regulators for pressure adjustment.

Cut fuel line with tubing cutter, and then slip the rubber hose over the cleaned end and using a hose clamp, secure tightly.

PENZ TOY RACING- [www.penztoy.com](http://www.penztoy.com)

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I have the laser cut plates and the stubs all ready to finish and weld up if you want to buy the kit or pieces of the kit you can't fabricate yourself. The 1/2" Stainless piece is pre-bent using my mandrel tubing bender which makes a really nice smooth tight radius bend and the 3/8" Stainless Tube comes pre-flared, so all you have to do is weld it up with a small TIG machine.

If you don't have a TIG welder, I found a really excellent dual voltage 40 amp machine with a built in plasma cutter for less than \$700

I bought mine on e-bay and it came from a US company.

It can easily weld ANYTHING I ever needed to weld and I sometimes weld up sch 40 stainless in 6" and 4" sizes under these diesel trucks. No Problem. I already had a Argon Bottle that I use with my other welding machines but used this an excuse to get this mew toy. The welding machine I bought came with everything I needed too except a bottle of gas.

<http://stores.ebay.com/usametalworker>

Complete Kit of **Parts Only**: \$40.00 incl. shipping (If I weld it up it's \$60.00)

Stainless Plate: \$15.00 + shipping

Stepped Sleeve: 8.00 + shipping

1/2" Stainless Tube: 5.00 + shipping

3/8" Stainless Tube: 3.00 + shipping

(Shipped via Priority Mail only.)

Money orders or paypal only

[cdennyb@hotmail.com](mailto:cdennyb@hotmail.com)

Dennis Boring

PO Box 1619

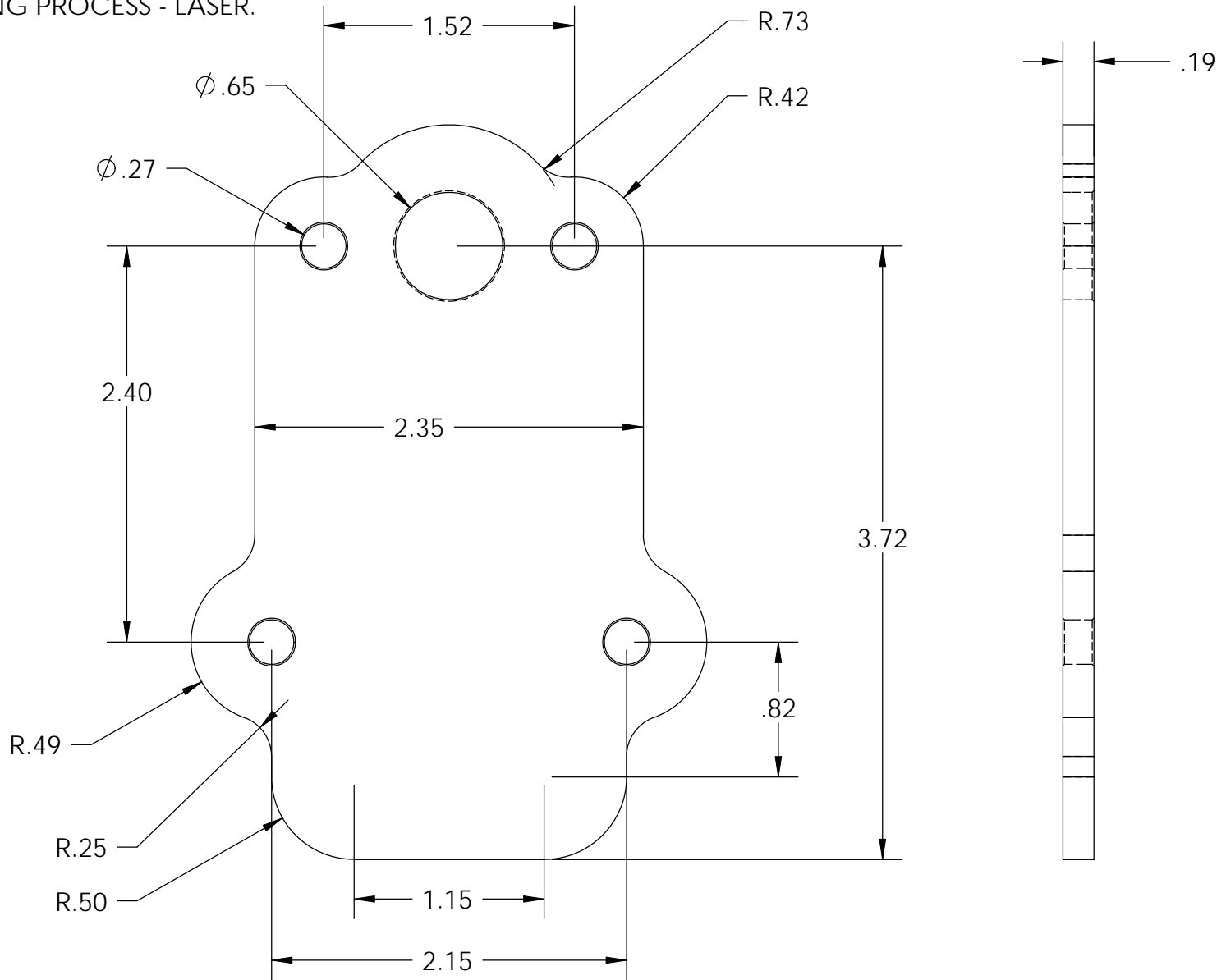
Oroville, CA. 95965

(530) 990-4550 cell phone if you have any questions during construction or have any questions in general.



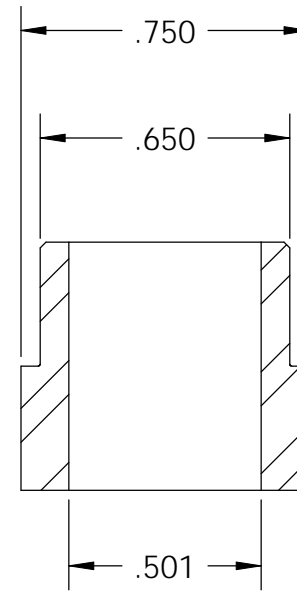
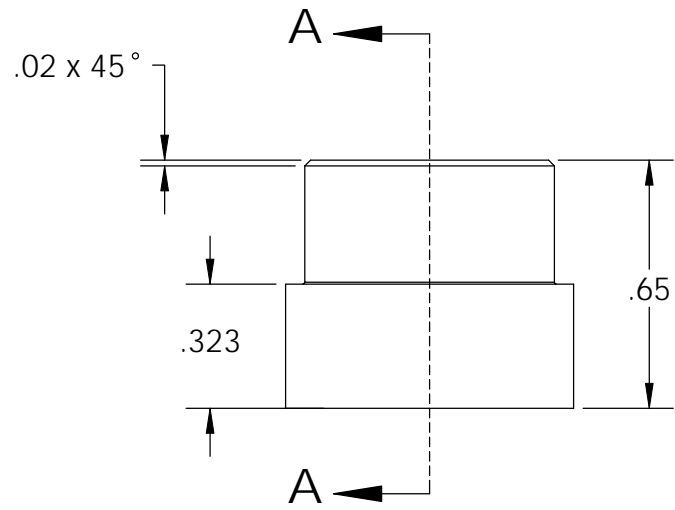
NOTES:

- 1- DO NOT DA SAND SURFACES OR CLEAN UP.
- 2- PREFER WATERJET PROCESS.
- 3- ALTERNATE CUTTING PROCESS - LASER.

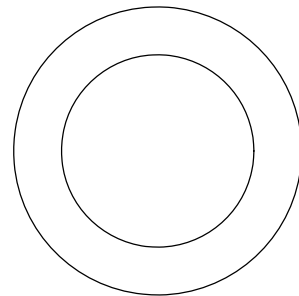


FUEL PUMP BY-PASS PLATE

MATERIAL: .188 STAINLESS STEEL  
FINISH: NONE.



SECTION A-A



MATERIAL: STAINLESS

QTY: 4