



lwrs10 · Registered

Joined May 14, 2009 · 257 Posts

✓ Discussion Starter · #1 · Sep 23, 2012 (Edited by Moderator)

Doing a little write-up while it is fresh on my mind. This will be specific to a 2000-2003 s10 with the 0411 silver computer and 2wd.....but alot of info will cross over into other years.

First, the engine:

You want a 1996-2003 350 out of a fullsize truck or an express/savanna van. If it is out of a 2500 or larger pickup, you will have to change the oil pan to the 1500. It will not clear the crossmember.

Things you want to do before install to the 350:

Well make sure it is a good engine. If it has too many miles on it I would rebuild it just for peace of mind, even if it is a good running motor. You do not want to be pulling this motor again in 20k miles.

AT THE VERY LEAST, change the intake gaskets.

I would also recommend changing the spider injector to the updated version.

Check the distributor gear for wear, and the shaft for side to side play.

Change the water pump. They are \$40 for a brand new one. Again, peace of mind.

PAINT IT. This will make it look much much better when installed.

Things you will need before you start this:

Motor mounts.

Many different companies make them, including JTR and Current Performance. I went with the JTR.

Headers.

4 options here. Heddman, Sanderson, Ebay stainless.....all shorties. Or, if you dare(you will have to move your fuel lines), longtubes. I used the Heddmans. You have to specify bigger flanges with the heddmans. They come with 2".

Radiator.

Most people use the 1986-ish Corvette radiator. This requires cutting on the core support. And requires an adapter for the lower radiator hose. I used the stock 4.3 radiator. I figured if I have to cut, might as well make my stock one work. That way I was able to use the stock tranny cooler and oil cooler. There is other options that do not require cutting. Current Performance makes one that fits in the stock location. But its 500 bucks. I will post pics of the stock radiator frenched later in this post.

Fan.

I used the stock clutch fan that was on my 350. My 350 came out of a 1996 2500HD. You may want to go with an electric fan...I will be later when money allows.

Here are the electric fan options.

If you use the stock radiator(16x26 inches), a 2000-ish Dodge Intrepid fan will fit PERFECT. And will keep it cool. Also only pulls 14-16 amps. Also, a mid 90's Volvo fan will fit perfect....but pulls around 40-50 amps. You can also use an early-mid 90's Nissan Quest fan. Fits like stock and pulls only 20 amps.

If you go with the Corvette radiator(16x23 inches), your options change. A ford Taurus fan fits it perfect. The 1995 and below single fan dual speed ones. You can also mod the Nissan Quest fan and make it fit.

The biggest thing to remember here, is 1 or 2 aftermarket fans without a shroud WILL NOT COOL IT WITH AC. You have to run a shrouded setup to get maximum airflow over the radiator.

AC condenser.

No matter what, when you move the radiator forward, your stock condenser is not going to work anymore. Some people modify the hood latch bracket and move it to the front of the core support. Other option is the Current Performance one. It will fit behind the core support.

Computer.

With a 2000 and up, you can use your factory 0411 computer. It will need to be reflashed. Many places do this. I tried Wait4me, and got screwed. It did not work. Engine only ran on 5 cyl. I now have a Current Performance computer in there and it runs great.

Companies that do this:

Pcmforless

Current Performance

Black Bear Performance

And many others....

Harness.

On the 2000-2003, use your 4.3 harness. You only have to add the 2 injector wires, add a 1 wire knock sensor, and separate the low side ground for the O2 sensors. I will get into wiring specifics later.

Tranny.

The 4L60E will work fine. I am sure the 5 speed will work fine too. You will have to get different bellhousing bolts. The 4.3 are metric and the 350 are not.

Starter.

The stock 4.3 starter will work fine on either flexplate as long as the 5.7L was from a 1500 truck with 4L60e. My engine was from a 2500 with 4L80e so I could not use the flexplate. Again, the bolts on the 4.3 are metric and the 350 are not.

OK.....next post will concern install. More to come.

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✓ Discussion Starter · #2 · Sep 23, 2012

Now we are ready to do the swap. I found it easier to pull the motor and tranny together. There is not dust cover on the 4.3 bellhousing. You have to unbolt the flexplate/torque converter bolts thru the starter hole.....good luck doing that in the vehicle.

You need to "massage" a couple of places before you throw the 350 in. Passenger side will need a good hammering for the header collector to clear the firewall. You will also need to fold the seam back in the tranny tunnel. Took me a total of 10 minutes to do this.

On to install of the 350.

This should be real straight forward. MAKE SURE you install it with the headers. Otherwise you will be like me and be cussing when you have to halfway pull the engine back out.

Also, install it with the fuel lines. They are impossible to install with the motor in.

Motor mount adjustment:

Most of the mounts you buy have a top and bottom hole, and about 2" adjustment front to back. If you want to run AC and want your hood to close, use the bottom holes on the motor mounts.

If you do not want to shorten your driveshaft, put the motor as far forward as you can get it. I did this and still fit a clutch fan in front.

From here, its easy. All the 4.3 accessories will fit right on the 350 with no mods.

Just start bolting everything back up.....and now we are ready for the core support cutting and the wiring.

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I will start with cutting the core support. I will be pretty straight forward. I cut the top, some people cut the bottom. I will let the pics do the talking.





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✓ Discussion Starter • #4 • Sep 23, 2012 (Edited by Moderator)

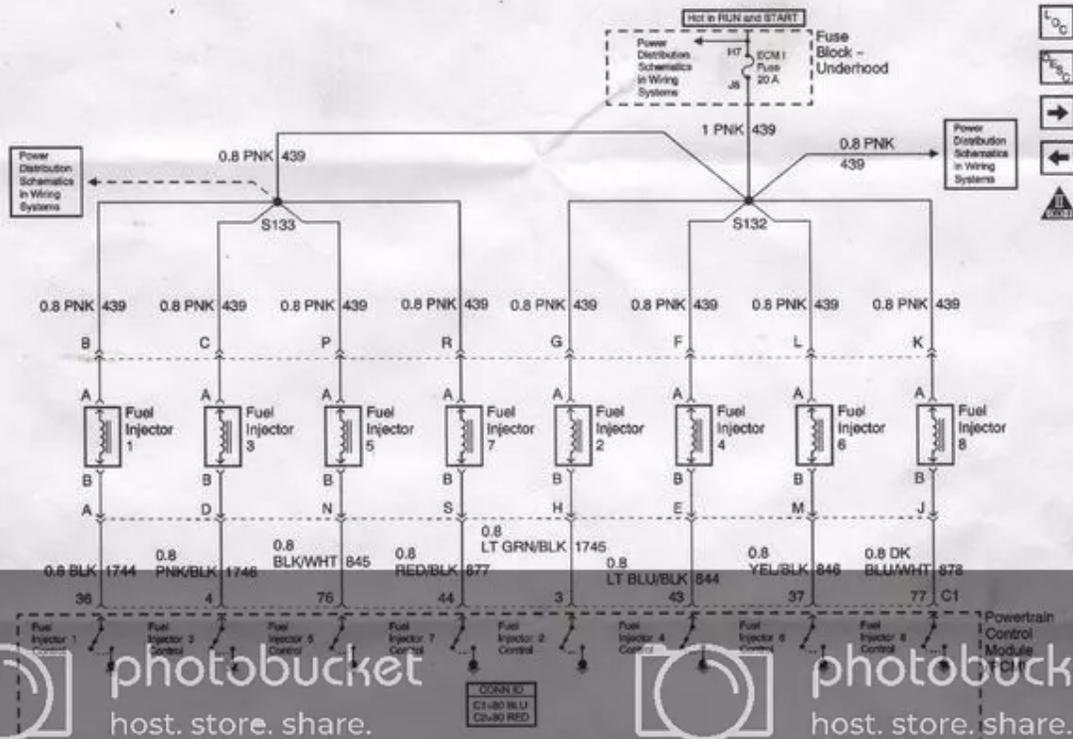
Now its time for wiring. This is what most people want to know. You will want to wire it as a 2002 Express van with a 5.7. You will have to run 3 wires(4 if you turn on the electric fan pin). 2 injector grounds and a single wire knock sensor.

Wiring:

First thing you will need is some pins for the computer. You will get 2 off the old knock sensor pins, but you still need 2 more. Junkyard is the best place. Just cut off a whole computer harness.

Here is the injector pinout you will use. I am not going to resize it so it is easier to read.

Fuel Controls: Fuel Injectors



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The easiest way to do this is just swap the pics at the injector plug. You have to change it to the v8 one anyways. Just make sure the correct pins go to the correct injector. The pink wires are the 12v positive.

Just splice the 2 added pink injector wires into any other pink.

And just in case the photo disappears...

Injector 1: pin 36

Injector 2: pin 3

Injector 3: pin 4

Injector 4: pin 43

Injector 5: pin 76

Injector 6: pin 37

Injector 7: pin 44

Injector 8: pin 77

Now the knock sensor. Go to the hardware store and get a 1/4 brass NPT elbow. The knock sensor will not clear the motor mount unless you add the elbow.

The knock sensor will go to pin 51.

You will need Express Van O2 sensors, the Bosch part number is 13474.

My O2 sensors were taking forever to warm up, so I measured heater voltage at the O2 plugs and had zero. After a review of the wiring differences between the 2002 S10 and a 2002 Express van, I found that the S10 O2's used a PWM heater circuit driven by the computer, and the Express van O2's were just plain old fused 12V that are on anytime the key is in the run position. Well that explains it. Just the simple flash to the Express van OS in the computer makes them not work. This all comes back to the s10 using signal ground O2's, and the express van using case ground.

O2 heater wire pins on O2 S10, these pins are in the red plug:

Pin 74: O2 B1S1 and B2S1 high(+12V positive)

Pin 80: O2 B1S1 and B2S1 low(ground)

Pin 72 O2 B1S2 low(ground), after cat

The after cat O2 has its own 20A fuse in the underhood fuse box. I simply spliced into that wire at the fuse box plug, and ran it in the harness and tied it to the wire that was in pin 74. This 20 amp circuit should be more than enough to carry all 3 heaters.

The O2 Express van diagram showed the ground for the heater circuit tied into the alternator bracket, and sure enough there was a ground point on the side. so I ran the ground(pin 80) to this point, and finished it with a ring terminal.

This morning on a cold start it took about 5 seconds for my O2's to start switching, where before it took a

good 3-5 minutes. And it really changed my fuel trims...for the good.

You will also need a mass air meter from the 5.7 engine. The 4.3 one will not work unless you tune it in.

And if anyone wants to review the ECU wiring diagrams all this info came from, here they are.

Various years S10:

[https://drive.google.com/folderview?](https://drive.google.com/folderview?id=0B9SEfFECXSWXNTI4OGM1YmMtZmlzYi00NTQwLWI4MWMtNzZmZmZhOTYzYmQz&usp=drive_web&hl=en&tid=0B9SEfFECXSWXYjg4OTA1YzktYjgzYy00NmEyLTg3YzMtYThiODIzMTRhNzdh)

[id=0B9SEfFECXSWXNTI4OGM1YmMtZmlzYi00NTQwLWI4MWMtNzZmZmZhOTYzYmQz&usp=drive_web&hl=en&tid=0B9SEfFECXSWXYjg4OTA1YzktYjgzYy00NmEyLTg3YzMtYThiODIzMTRhNzdh](https://drive.google.com/folderview?id=0B9SEfFECXSWXNTI4OGM1YmMtZmlzYi00NTQwLWI4MWMtNzZmZmZhOTYzYmQz&usp=drive_web&hl=en&tid=0B9SEfFECXSWXYjg4OTA1YzktYjgzYy00NmEyLTg3YzMtYThiODIzMTRhNzdh)

And the Vortec 5.7 0411 computer diagrams:

<https://docs.google.com/file/d/0B4qslwsH0ljsRDBYVnVLajRnMTQ/edit?usp=sharing>

<https://docs.google.com/file/d/0B4qslwsH0ljsVFBZYzBvVTlvYUk/edit?usp=sharing>

<https://docs.google.com/file/d/0B4qslwsH0ljsQ3ZDZjhkSTNKR0k/edit?usp=sharing>

<https://docs.google.com/file/d/0B4qslwsH0ljscEtobDVnRVRTdIE/edit?usp=sharing>

<https://docs.google.com/file/d/0B4qslwsH0ljsZHJ2NTA4Rmo5Mm8/edit?usp=sharing>

<https://docs.google.com/file/d/0B4qslwsH0ljsVGhicXNrMUxiR0U/edit?usp=sharing>

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✓ Discussion Starter · #5 · Sep 23, 2012

that should about cover most peoples questions. Ifyou have any for this specific swap feel free to ask....I will gladly answer them.

One thing i forgot is the brake lines will touch the header. You will have to bend them out of the way.

And for some finished product pics...













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