

## 2001 Yukon XL W/2002 Duramax LB7

Project began months before I actually purchased anything. First purchase toward the actual project was in Dec. 2006 I bought a 2002 Crew Cab Dually Duramax.



I was lucky and picked it up local to me in Idaho. Truck ran, nothing spectacular, no windows, no bed, and no license. So I drove it around the neighborhood a few times. Started up just fine at 20°F with only 1 battery seemed a little underpowered but I had never driven a Dmax before. The plan was to install the Dmax into my 1995 6.5TD Suburban 2500.



The more I researched this plan the more I realized it was a bad one. Even though there is a book written on how to make this conversion it still looked like more work than I was capable of. So I started looking into the newer Suburbans. As I looked at them I started to realize that there are a lot of similarities between them and the new trucks. Body panels, engine mounts, radiator supports, and even electrical connectors and locations. So I started looking for a newer suburban, half heartedly because I knew they were expensive. I happened to run across a 2001 Yukon XL 2500. I was sure that the 2500 was the preferable way to go and have since found out this is the only way to do it. The Yukon was listed for \$9,000 and had 180,000 miles on it. It was local and I went to look at it. Good condition, nice ride, everything worked. A couple weeks later the price dropped to \$8,000 and I had to take it. We drove it for another 3 months while I was researching the conversion.

Got to give a shout out to Tractornate and WCH for there help in sharing information about there conversions. I broke down and ordered a set of Helms manuals to help with wiring and fuel system. During the next few months I took the wiring harness out of the truck and started tracing wires from end to end to try and get a handle on how this beast is wired. More research on power upgrades, exhausts, intakes, and all other available options.

The beginning of April I decided it was time and I started taking the truck apart. Start with the front end, grille, lights, radiator core support (leave all the stuff in it), hood, quarter panels, batterys, coolant tank, down to the frame and the firewall. Next is the cab, I took it completely off of the chassi. By this point the engine is completely exposed, and this is where I found the bad compressor blades on the turbo.





So now I have to find a turbo. Jim659 stepped up and sent me a turbo, and I bought one from IdahoCTD. Tore the bad one off and got a good one in its place. Man am I glad I got to do it with the engine exposed because it would suck doing it in the engine bay. I also replaced all of the small coolant hoses with silicone hose and the fuel line with silicone hose also. Don't want to worry about these hoses going bad on me. Meanwhile I have traced almost all of the wires in the harness that goes from the engine bay to the interior. Now I start to see how well it matches the Yukon wire harness. Some more question to Tractornate and WCH on how they did it and an email to PPE. Seems that I can use the Yukon harness after all! I thought I would have to buy a new Dmax harness because the cab fire had melted a bunch of the harness. Things are looking up. By the end of April I think I am ready to start on the Yukon. With the Yukon parked next to the truck I started the process over. Dismantle the front end; pull radiator core support off with everything still in it. Disconnect body from frame. Lift body off frame and support in the air. Pull frame out from under the body.



Sound easy but let me tell you that Yukon body is heavy and it took 6 guys a couple of jacks and about 4 hours to get it off the frame and high enough to roll the frame forward. Now the two frames are bare and next to each other to compare and decide what goes and what stays.

First impressions are that the fuel system is totally different. And the whole exhaust has to go. Drive lines have to go. Engine mounts look the same. Brake system is identical, what a relief. Steering shaft extension is longer on the truck so it gets moved over to accommodate 2" body lift. Now it is time to move the engines. With both frames sitting next to each other it was fairly easy. Neighbor came over with his bobcat and within 30min the swap was done.



I found out through research and looking that the engine mount on the frame is the same for all V-8 engines, they just use a different intermediary mount that goes with the engine. 4 bolts out and the engine dropped right in place. We had to drill 4 new holes for the tranny cross brace. A new driveline had to be made. I used parts from the driveline from the truck and had a new one built down the road, about \$140.

The fuel system was not so easy. I started by taking out all of the original fuel lines from the Yukon. Everything but the tanks and the lines between the tanks had to go. Yukon used 3/8" supply and 5/16" return, not enough for the dmax. I used fuel hose and installed all new lines for the diesel.







Had to modify the tanks so there was a gravity feed from the rear, higher tank to the front, lower tank. Took the tanks to a plastic rotomold shop and they spun on a couple of fitting fro me.

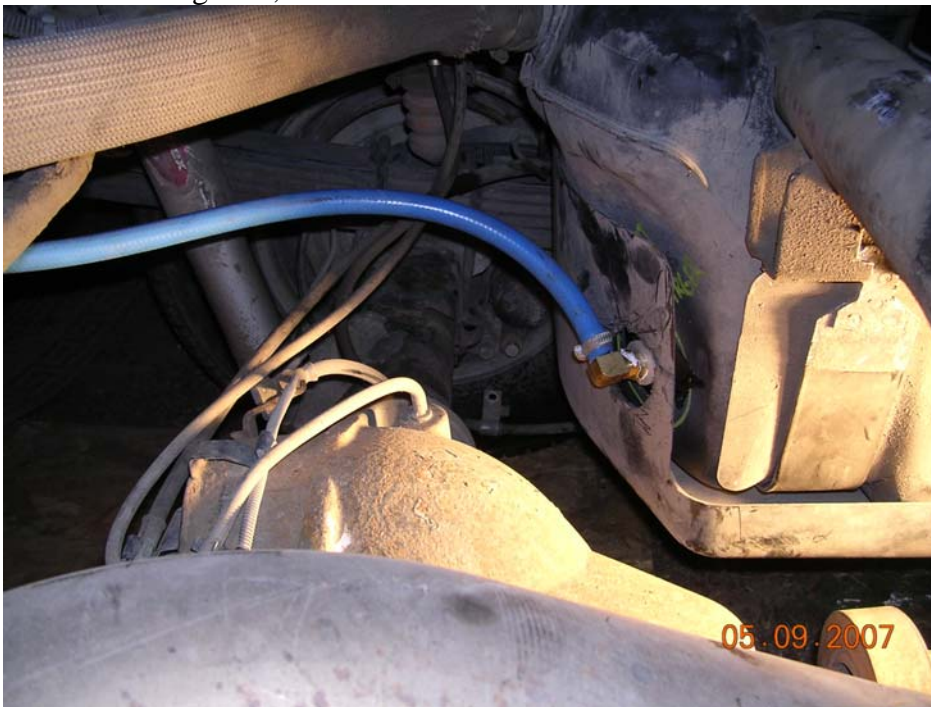
Rear tank.



Front tank.



Plumb them together,



Made a new pickup using the Yukon and the dmax pickups, with a Ford rubber on bottom. Ford has a great design.





The exhaust was the same story, take out all the original stuff and install new custom stuff. I bought a used Banks Monster exhaust and pieced it together to make up one for the Yukon.

Front section.



Middle front section.



Middle section



Back Middle section





Back section



Install a 2" body lift, 2" pucks from eBay, \$40; bolts 2" longer from Fastenal \$18(got them for a song and dance). Bolt in DRW axle from duramax. It bolted right into the existing leaf spring spacing even used the stock Yukon u-bolts. Shocks don't line up, but

I will move shock mounts on axle when I get the SRW axle later. This axle is so much bigger than the stock 9.5" rear end.

With drive train in I can install the new drive line. I had to have the truck drive line cut down to fit the shorter wheel base. Truck had a 2 part driveline, I used the front of the front section and the back of the rear section and had one custom made. I chose to use the stock u-joints because they had grease zerks in them.

I had to reassemble the front end so I could have antifreeze, tranny cooler, and air intake system together to try and start it up.



I had to choose between the Chevy front end from the truck or the GMC front end from the Yukon. I was intrigued by the idea of a unique Yukon with the Power Dome hood and a Chevy grille. I found that the whole Chevy front end would bolt right onto the Yukon but in the end decided just to go back with the Yukon parts. In order to do the swap you need both quarter panels, the hood, the grille and the bumper. Every thing else is the same like lights, radiator core support and all mount points. In choosing the Yukon parts I would not have to deal with painting the Chevy parts to match.

Front end bolt up is just reverse of taking it apart, but putting whole radiator stack from truck in. Lights, grille, quarter panels, hood all bolt right up to the Chevy radiator stack. I used the light harness from the Yukon because the Yukon uses 2 window washer pumps 1 for front one for back window. Air bag sensor is the same. Took some trial and error to get the hood lined up, and the A/C is not going to be bolt together. Installing second battery is a no-brainer because the bolts for the tray are already there, just take tray from truck. With the radiator stack from the truck every thing just hook back up, intercooler pipes, water hoses, tranny lines.

Finally we come to the wiring. Engine is installed on the mechanical side, but electrically there is a lot to do, so I thought. I started comparing the connectors on the engine to those on the body. Seems everything is the same. So I started plugging in the harnesses. Every connector is the same, in the same location, with harness lengths the same. I was blown away. I did find that there are a few wires that are not the same. Cruise control is the biggest difference. On the Yukon the engine uses a Cruise Control Module to pull the throttle body open and control speed. On the duramax it is all done



electronically. Lucky for me the control system is the same, just have to move 5 wires from the Cruise module to a connector that is already there that goes to the duramax computer. The Helms manual was priceless at this point. I was able to look up every harness connector and know what each wires was for and where it went too. Then I had to add a wire for the Wait To Start light, plugs right into the connector for the instrument cluster because the pin location was open on the gas cluster. Then I had to add the electric pedal wiring. This is a whole harness that goes from the engine to the pedal, no cutting no splicing, just run through fire wall. Adding the pedal was not too bad, cut out the old on the bolt in the electric one.

Front end is installed, antifreeze is in, batteries are connected and charged, and I have primed the fuel system. Now I can try and start the beast. Put the key in, first time I have applied power to anything since I started. Dash lights come on, Wait to Start light comes on. Everything looks normal so I crank it over. Engine turns over but does not fire, not even a puff of smoke out the tail pipe. I prime it some more and try again, still no fire. After multiple primes and tries I decide something is wrong. A few emails and some conversation with people who know and I find out that the computers are not talking to each other. Someone reminds me of a computer relearn process. I also found a description and instructions in the Helms manuals. It takes 30 min. So I took the manual out and started the relearn process. Insert key, turn to on position, do not go to start. Wait for 10 min. Turn the key off, wait for 15 sec. Turn the key back to on position repeat process a total of 3 times. After the 3<sup>rd</sup> time of turning the key off I tried to start again and it started. I let it idle for a few minutes while I ran around screaming like a little girl. I had to tell someone and my wife was the closest person who had a clue what I was doing.

Well now that it is running I have a lot of parts that still need to be put on, the rest of the front end, 6-gun tuner, and the interior.

In the interior I needed to change out the instrument cluster for a diesel version. I needed a new 4X4 switch to match the transfer case and a new transfer case module. The module I did not change until later because I thought the one from the Yukon would work, ends up the programming is different and as soon as I changed modules the 4X4 worked fine. On the instrument cluster only change is to add Wait To Start wire then it can be bolted in. Put back all the trim and the interior is done.

On the 6-gun the installation is just like the manual says. I had the advantage of having the body off and the interior all apart, makes the install a breeze. I drilled the hole in the exhaust manifold with out any fenders on so I had easy access. I put the hole on the rear of the passenger side, seems to work just fine right there. Ran wires up to the A-pillar for gauges and pushed wire bundle through fire wall. I had to cut up the rubber doughnut that protects the wires so I could get all the wires through.

I still have to decide how to fill the 2" gap on the front and rear of the vehicle from the 2" body lift.

To date I have put about 7000 miles on the rig. Everything seems to be working great. I have needed to replace the CP3 injection pump, which is a whole different write-up. We have been getting from 12 to 18 mpg but have not driven on freeway with out a trailer for more than 30 miles. Seems that we only get about 35 usable gallons from the 38 gallon tank. And we have found that when the cluster says low fuel it is time to fill up again. If you get air up the supply line at all the engine will die. It only takes a few pumps on the

primer and you are back up and running (to a fuel station). I have run it out of fuel once, took 1 hour to get it to start and then 35 gallons to fill up. My wife love driving it, I only drive it when the family goes somewhere.

I put it on a dyno and love the figures, 451rwhp and 870rwtq. That is with the 6-gun on level 6, which is only for the dyno. On level 2 we get the best fuel economy and it still will beat almost all Fords and Dodges that don't have 1000s of dollars of work.

Other upgrades have included new tires and rims, and a new hitch because I feel the stock one is too weak for a 12,000# toy hauler. There are other upgrades to come.

I am sure I forgot many things, but I don't have time to write a book about it, because that is what it would take. I have more pictures and can take more. I tried to get a lot of pictures as I was doing the swap. I am more than willing to talk about it and answer questions so feel free to ask away.

Boisebiker