

Pumped Up

Written by Administrator

Sunday, 08 May 2011 07:36 - Last Updated Friday, 03 June 2011 10:32

Power, you always want more. Being a 4000lbs car the Challenger needs a powerful engine to get the 1/4 mile time I was hoping for. I did manage to pull off a 12.91 but most of my times were in the 13.3 range. I was hoping to get to low 12s and possibly high 11s. I started looking into power adder options even before I purchased the car. I looked at various centrifugal superchargers, NOS systems, and even Turbos. There was a lot of aspects that affected my decision. I wanted at least 150HP gain but I also wanted whatever addition to look decent. I also wanted it to allow the car to pass the emission testing we have in BC.

Turbos definitely gave the power but I did not like how these systems mounted under the vehicle. Some require removal of the CATS so I decided against this route.

NOS kind of scares me, it seems too hard on the engine so I decided against this route as well.

I looked at centrifugal superchargers like Vortech and ProCharger. I did not like the look of the Vortech with its inter cooler over the left cylinder bank. I was leaning towards the ProCharger. They were the only company that sent me an installation manual when asked. The problem with the ProCharger was the lag for the supercharger to build boost and I also did not like the visible inter-cooler through the front grill.

I then heard about the Twin Screw Supercharger offered by [Kenne Bell](#) . Twin screw interested me as it builds boost at low RPMs and also generates much less heat than a Roots style supercharger. I started doing more research in this area. Kenne Bell has a long history of developing superchargers. Their website offers lots of useful information on their technology, comparisons with other technologies, and general tech tips on such things as fuel systems. In searching forums everyone was praising the Kenne Bell unit. It also has the capability of producing over 20psi of boost if ever required so there is lots of room for expansion in the future. And, IT LOOKS COOL. So I pulled the trigger and purchased a polished 2.8L kit from [Mr. Norms Garage](#) . Three weeks later two HUGE boxes showed up at my front door.

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I figured I should have a boost gauge so while waiting for the supercharger to arrive I installed some gauges and additional wiring required for the inter-cooler water pump. Check out my [gauge install](#) section for details.

The installation manual is huge for this kit. Everything you need to complete the install is included, even some special tools like a fuel rail disconnect tool. The only thing missing was a fitting and hose used to bleed the coolant system at the end of the install. I did not follow the instruction sequence completely as I was doing this install in my tiny garage so I wanted the car drivable until the last possible moment.

I wanted to get the tedious things out of the way first so I completed all the electrical work first. I had already installed the power system required for the water pump so adding the provided relay and harness was very simple. I then installed the boost-a-pump system used to increase the fuel pump voltage during boost conditions. The Boost-a-pump is installed in the trunk on top of the rear PDC unit. It is wired inline with the fuel pump power. It then has a long wire that connects to a pressure switch in the engine compartment. The manual says to run this line under the vehicle but I did not want to drill a hole in my trunk as instructed. I took the time to run this line through the inside of the vehicle. I routed this line along the main power lead from the battery, then to the drivers side of the car under the rear seat, then under the rear quarter panel, under the drivers door sill, behind the kick panel, and then through the same hole in the firewall that all my gauge wires went through. It then runs behind the engine and was temporarily coiled up by the evap valve. Lots of interior parts had to be removed to route this wire. The service manual sure helped. There are lots of snaps to release and knowing where to pull will help prevent damaging any panels.

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With the wiring out of the way it was time to dig into the main install. I drove the car onto ramps to remove the belly pans. I then backed it off and removed the front fascia. There are 6 plastic rivets that have to be drilled out that fasten the inner fender panels to the front fascia. Care must be taken when drilling these to not allow the entire rivet to spin or you run the risk of melting the panel itself with the head of the rivet, Ask me how I know...

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Once these rivets are removed you need to remove two bolts under the panel. You then have to bend the panel out of the way and reach way inside to reach two more nuts securing the fascia. This is a real pain. Then remove the covers/cup holds on the top side, remove the push pins in the fascia, and the two top bolts. The fascia then pulls off but you must release the lower fascia from the fender first. The manual was not clear here. They said you have to pull the lower fascia down but you really have to pull it out, perpendicular to the plane of the front wheels. Once these are unsnapped the fascia pulls right off. I then removed the bumper shroud and set aside.

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I then drove the car back on the ramps to drain the coolant, this is where I ran into my first issue. You must turn the petcock on the radiator to drain the coolant. Well, doing this had no effect, this system would not drain. I drove the car off the ramps in case the front end was too high but that had no effect. In the end I had to remove the lower rad hose from the engine to drain the coolant, and make quite a mess in the process. At this point the vehicle is no longer drivable so it was a lot of pushing my vehicle in at out of my tiny garage from here on out.

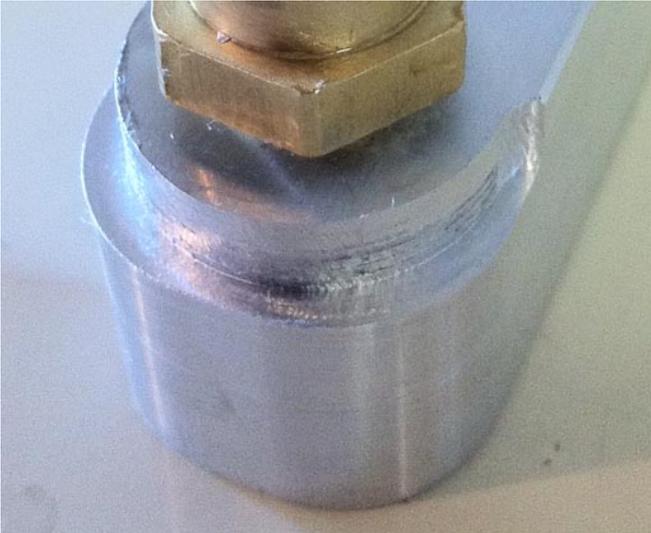
I then removed my K&N CAI, [which is now for sale](#) if anyone is interested. I then removed the stock intake manifold. I could not unplug the map sensor so I unbolted it and removed it later.

Next the stock heater lines running through the intake valley were removed. The heater line bypass fittings were then assembled and installed, almost. This is where I ran into issue number two. The passenger side block would not insert all the way as it hit the engine block. Luckily I have a milling machine so I milled out a section of this block so it would fully seat. I then installed the replacement heater lines.

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 ds

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