

Leo's Z3 Newsletter

Episode 5: Maximizing WARP Speed

Hi Z Clubbers:

This 5th Episode of Z3's Corner is how to use modern technology and a little Italian ingenuity to do better what BMW started 22 years ago with some of our Z3's.

Obviously, these cars right out of the box were never sloughs: a 1998 Z3 with the 2.8L straight 6 has a 140 mph top speed, 189 hp @ 5300 rpm and 203 ft-lbs of torque @3950 rpm, 0-60 time of 6.3 seconds in a car weighing less than 3000 pounds and a horsepower to weight ratio of 15.56 Lbs/hp. Very impressive at the time for a convertible that was still considered a Luxury car. SO, I had noticed how clean my engine oil always seemed to be, how the engine never burned any oil, how this straight 6 just begged to go climbing way up the tachometer, and really sounded great at high speeds on interstates and such.

To further enhance my project it was time to consider the age old equation of volumetric efficiency: what goes in must come out. Specifically to increase the volume of air (oxygen) going into the cylinders and reducing the exiting resistance on the exhaust side with a whole lot of high tech magic enhancing fuel enrichment in between!

So first the cold side: With a little inspection I found out how well designed our air intake system is! The air intake port is outside the hot engine bay and up toward the grill of the car for a cool source of fresh air. See picture below for included Italian engineered enhancement to overcome the small (adquate) initial opening. No cold air aftermarket induction kits needed here!! ONLY this K&N exact fit, free-flowing replacement air filter. Flows air more easily than the stock one, adds h/p and lasts forever with minor care to the filter element. <https://www.knfilters.com/bmw/z3/2.8l-i6-gas/1998/> Looks like they have free shipping but you can get these at Advanced A/P or Auto Zone as well if you like to support the little guy.

Next the hot side: So intending as little disruption to pollution controls and the catalytic converter, I sourced a cat back system from Magna Flo Exhaust Systems that increases horsepower and torque while reducing weight (30 lbs compared to 45+ for stock components), making a deeper, sporting sound and looking great in polished stainless steel as an exact fit! Their website is most informative: <https://www.magnaflow.com/products/16712-performance-exhaust-magnaflow-e367-bmw-z3-touring-series-cat-back-performance-exhaust-system> And if you would like the actual sound with that:: (turn it up and see if your spouse notices!) here at <https://www.youtube.com/watch?v=NvydPQgvEfw> Purchase can be made locally like at O'Reilly's A/P (theoretically) but you'll find Jeggs, Summitt Racing and others for best pricing and free

drop ship to your door! This little gem makes my car sing but, the best is yet here below!!

The ECU *in between*: The engine timing, fuel mixture, valve timing, rev limiter and enrichment maps are all controlled electronically by the Electronic Control Unit which is a powerful software driven computer in every Z3. So the magic here is from a legendary BWM technician who has written enhanced programming to, you guessed it, unlock the power and overall drive characteristics of the original!! Only carried by Turner Motorsports, here is your link to the Shark Injector for our cars. <https://www.turnermotorsport.com/p-339086-z3-28-shark-injector-performance-software/?pdk=AAAAAEB> Scroll down for the product details.

Installation Recommendations: Ok, so there are a range of installation challenges here. I built an Austin Healey kit car in the 90's so I'm fairly handy with tools. However, I found my best tool is my right hand signing the checks with a pen. Changing the air filter in from K&N was very do-able for me and the discarded filter not a problem for the garbage can.

The Magna Flo exhaust looks pretty easy but I didn't do it. Auto Masters in Leesburg was more than happy to do a high quality install using the same hangers (I didn't see wear enough to warrant new ones) and they got their scrap metal guy to recycle the massive and restrictive old one. It's a beautiful look and sounds great to everyone. Check this out to see the Magna Flo in action on a Z3. https://www.youtube.com/watch?time_continue=1&v=NvydPQgvEfw&feature=emb_title

Now for the tricky bit!! The Shark Injector is designed to interface with the same service port BMW uses to check out your engine diagnostics. It is a short install right there on your car in 45 mins or less. Since the car is out of warranty and I was willing to take all the responsibility for the part in case it didn't work (not likely since Turner's assured me they have sold over 250K !! of these for many BMW applications Whew!!)(AND it can be reversed just as easily!) I started a conversation with BMW Service in Ocala. Auto masters was not sure they had the correct battery charging unit needed to properly install the new software. I showed the service writer the plug in device, the clear instruction sheet, what the charger requirements were and where it went and the shop foreman said OK. For 1 hour of their labor (less BMW Z Club discount!) I got a splendid bump in engine output, driving smoothness with no noticeable downside! (poorer gas mileage). Well done Scottie!! We have achieved max warp drive with out going into cams, new fuel injectors and using high quality, bolt on, exact fit, hardware and well proven software!

So below is a pic of what the tinkerer, I, came up with to make sure the very beginning of the air intake is as wide as I could get it and still have it fit in the original space. Holes drilled to giddy up there quicker! Z 3's Corner Fix it hint: Local Italian ingeniously fixes restrictive air intake opening!! I used a long

sheet metal screw to pry and hold the opening much wider. The pic you will find is just to the left of the driver side head lamp! Compare it to yours!



As mentioned before what I did in no way determines what your final analysis will be for any actions you take upon your vehicle. Mine runs great, pulls real hard and sounds like a bear all the way north of 115 mph on the straight at Palm Beach International Race way, lap after lap for 3 twenty minute sessions at Track Night in America, a High Performance Driving Event.(read: NOT racing!) And then, we take a leisurely drive home, purring like a kitten into Liberty Park Village easing into the garage. The temperature gauge doesn't even budge!! What a car!! BTW Jeff Hermans' M4 hits 135!! So then, for your entertainment here is a short video of Jeff crushing Leo at the track!! <https://youtu.be/KcQHmtW0G5I>

Next up: EPISODE 6: Some refinements You may want to ignore! Keep the Shiny side UP Z ers!!

Attachments area

[view YouTube video 1997 BMW Z3 - MagnaFlow Exhaust Part #16712](#)



[17 BMW Z3 - MagnaFlow Exhaust Part #16712](#)
[view YouTube video PBIR 2 Laps With Leo](#)

