You ***Can't*** Tuna Fish, but You ***Can*** Tune a Triumph 5

By Craig Simon

I took my TR5, which its unique fuel injection system, to a mechanic located in Topeka, KS, who has never worked on this type of car before. My TR5 Injection manual stated this……

Important

UNLESS THE NECESSARY CALIBRATION EQUIPMENT (CONSISTING OF A VARIABLE VACUUM SUPPLY 0-28" Hg AND GAUGE AND SUITABLE TEST RIG) IS AVAILABLE, THE CALIBRATION SCREWS MENTIONED ABOVE MUST NOT BE DISTURBED.

IF A NEW CONTROL UNIT IS FITTED TO A DISTRIBUTOR OR VICE-VERSA, OR ANY NEW PARTS FITTED OTHER THAN SEALS RE-CALIBRATION WILL BE NECESSARY.

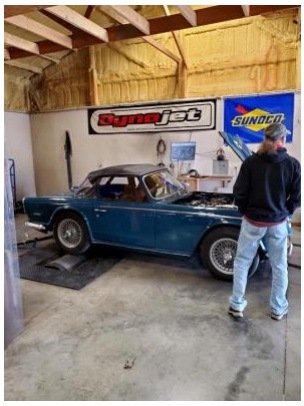
Where some might ask, "This is a joke, right? You're trusting a guy who has never worked on this type of system?". And others might say, "Does Dementia run in your family?"

But this is exactly what I did. Stopping by Prather Motor Sports a month earlier, I ask owner Jesse Prather if he would be interested in tuning my TR5. I told him about the unique mechanical injection system at which time said, "Bring it in, it should be interesting". So, with the confidence I had made the correct decision, Ace mechanic and friend, Gary Gumminger and I set out. As most of you know, Jesse is a SCCA champion many times over. Racing Miata's and BMW's, tuning and setting up many other competitors race cars.

I had always felt the 5 was running rich. This was verified the week before, as Gary had me drive over where he hooked up his new air fuel ratio thingy. Or a Stoichiometric measuring thingy for those in the know. I had a bung hole installed in my exhaust manifold 17 years ago when I first got the TR5 running so hooking it up was easy. At idle, the glowing number 11 on the screen verified richness. Very rich. Drove on the road, through the gears, 11 to 12. Rich. Back off throttle 11 or 12. Rich. According to Gary, the numbers should be in 14's off throttle and 11's on throttle.

Prather Motor Sports tune up procedure:

1) Strap 5 on to Dyno.
2) Jesse's Stoic reader was attached to a long tube shoved up tail pipe. Push a lot of buttons on laptop.




3) Warm up engine, run it through gears.
4) Run tach up to just over 4,000 once or twice. (At this point I'm a nervous parent watching my child being pushed past the point of comfort. My comfort).
5) Green bar graph hangs around 11. Too rich.

6) First issue. Jesse was expecting (as per manual), to be able to adjust the pressure relieve valve (PRV) valve. The injection system is under 100 to 110 PSI. If PRV letting too much fuel through before sending it back to fuel tank, He surmised reducing PSI to injectors would lean out system. I replaced PRV when it was restored. Apparently new one installed is not adjustable.
7) Ok, so now it's pull cap off metering unit and start fiddling with adjustments.
8) This is where fun begins.



3 flat thin hex nuts, which the manual calls set screws need to be adjusted. Turn each one individually and try to find out which one adjusts idle, mid-range and or high speed. First loosen lock nut that holds everything in place. As I understand it, each set screw (nut) applies or releases pressure on a spring that reduces or increases fuel flow. I was a little surprised when Jesse h grabbed from his toolbox, a Triumph 90 degrees fuel injection, adjusting plier. These needle nose pliers fit in slots made in each adjusting set screw (nut).

9) With the 5 on dyno, Jesse turning set screws and Gary on throttle holding engine, at 3,000 RPM, through trial and error, he gets engine idle at 14+, high speed under load 11-12. Nice.

10) One glitch discovered early. You must replace the screws that hold metering unit cap on. BIG VACCUM LEAK if you don't. The black smoke pouring out of tail pipe, reminded me of incident 1975, where the only time my metering unit malfunctioned. (Good catch Gary).

All in all, a great learning experience. And not so complicated. All you need is a dyno, Stoichiometric reader, injection adjusting pliers and 2 people who know what they are doing.

Here are my numbers HP 100.24 Torque 137.7

Jesse said the dyno is *"the big disappointer. No propaganda. No way did they have a proper way to dyno engines back then. These are modern horses. LOL*".

I was curious what dyno numbers of other members Triumphs came in at. Steve and Bob kindly gave me theirs.

		HP	Torque	
Steve Peak	TR4 A	89	116	engine up graded with street cam and .40 over pistons
Bob Aquilar	TR6	90	120	smog stuff removed

Keep in mind these numbers are at the rear wheel. As I understand it, add 15% for engine HP and Torque measured at the flywheel.