

Frank Puckett Entry for Sherm Schroeder Award

The Sherm Schroeder Award is for Motorcycle Innovation since he was known his free-form ideas on putting a motorcycle together. My entry is innovative from the standpoint that who would be stupid enough to put a belt driven supercharger on a 1971 Triumph single cylinder motorcycle?? Well, the reason this project started was to enter specific classes for Bonneville salt flat racing, specifically Speedweek in August.

This bike was designed to enter the 250cc, pushrod, blown, partially streamlined class in both fuel and gas. Pushrod engines in the 250cc class are not common, but we settled on using a Triumph 250 TR25, which is basically the same as BSA B25. Parts were from the 1969 to 1971 area.

When I say “we”, I am talking about my Bonneville crew who helps me build and race bikes at Speedweek. They are Jim LeFebvre, Lenny Spall, and Dana Robbins.



We started in October of 2016 to be ready for 2017 Speedweek in August. This base bike was purchased from John Stoner. Hard to believe this bike eventually

took two Speedweek records, after a little work of course.



Engine was taken down to the cases and rebuilt with new bearings, new cylinder sleeve and piston, new Kibblewhite valves and springs with titanium retainers. I built an extension from the crankshaft, through the primary cover, to carry a pulley for the supercharger. In the following picture, you can see the pulley running off the crankshaft. The supercharger is from a Subaru Pleo, a 658cc car that is not distributed in the States. It puts out 500cc per revolution. I have seen this supercharger used on other Bonneville race bikes, and took the idea and was able to get one on Ebay.

Also in this picture you will notice the BSA Victor tank that was chosen because I had one and it was very light. The dents were an added bonus and I think they helped our streamlining. Clip-on handlebars and a fairing are being fit at this stage.

A requirement at Bonneville is a steering dampener, and you can see how we mounted it in the lower picture.



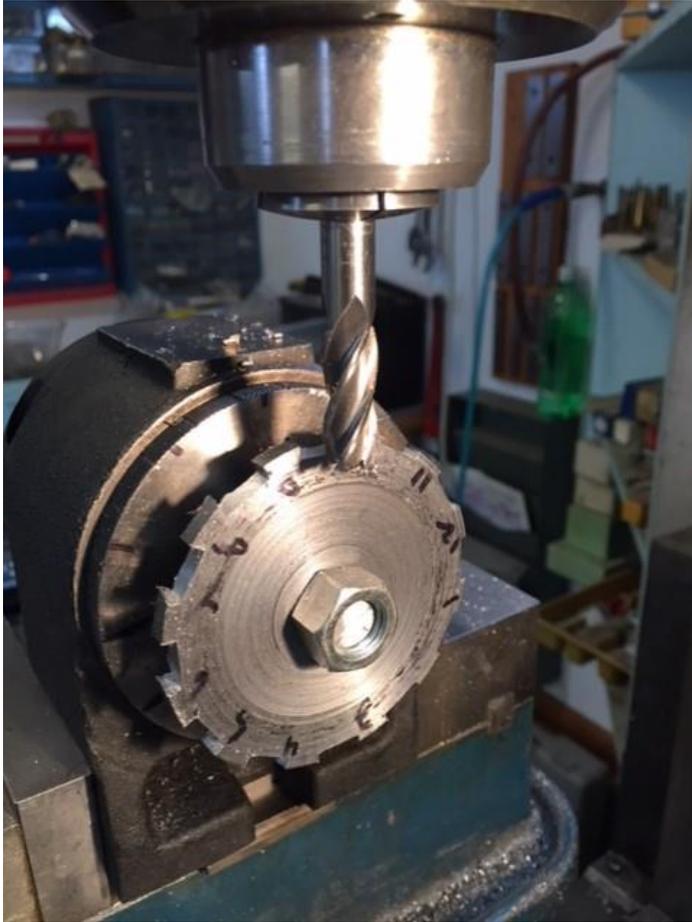


Here is a picture of the plumbing required to get the supercharged air to the throttle body. This race bike uses electronic fuel injection and electronic-controlled ignition. These aspects are controlled by Microsquirt, an engine management system where all fuel and ignition functions are programmed by computer.

Next you can see the wiring being routed. The front wheel is from a 1970's Honda CB100 with the disc brake removed. This was to lighten the front end since a front brake is not required at Bonneville. A special axle was fabricated to mount a Honda hub on Triumph forks. The gauge cluster is also added, with a tach, boost gauge, and air-fuel mixture gauge. An exhaust O2 sensor gives us air-fuel mixture read out on a continuous basis, aiding in tuning.

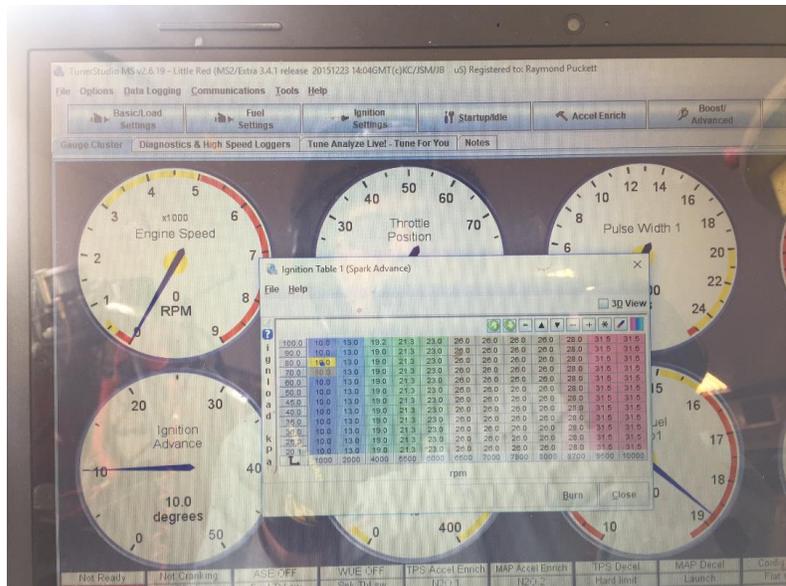
I fabricated the exhaust pipe from stainless tubing. It was later shortened. We also fabricated the rearsets for the rear brake and gearshift.



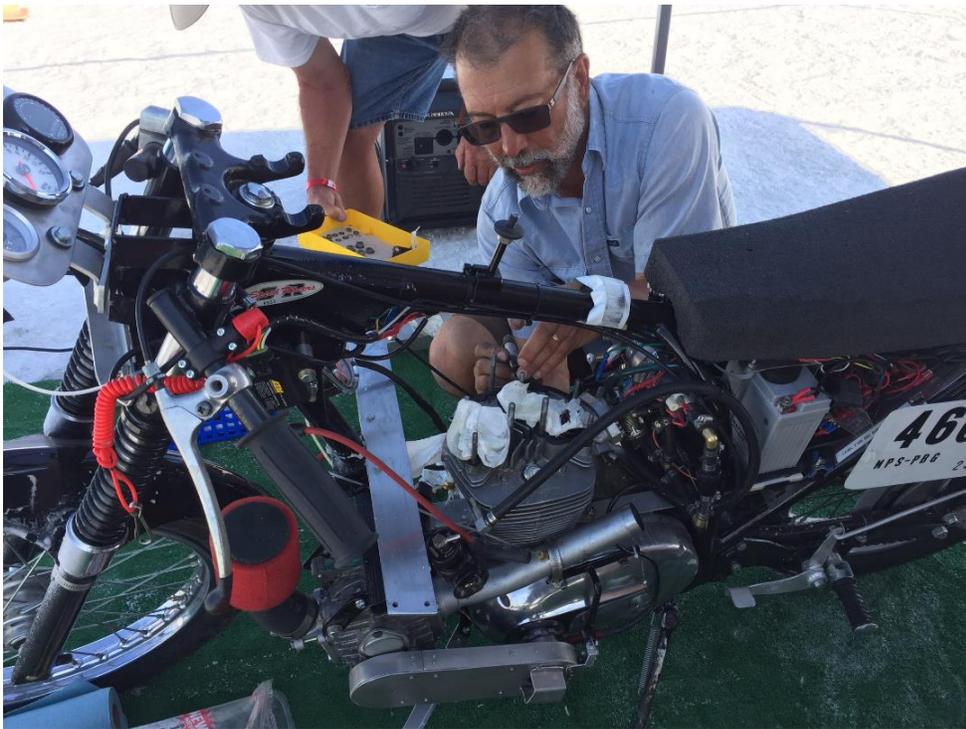


An innovation on this motorcycle is the use of a toothed wheel and a Hall effect sensor to detect the position of the crankshaft at all times, vital for the Microsquirt engine management system. Here, I am making the toothed wheel on the milling machine and it mounts on the end of the crankshaft with the super charger pulley.

Following is a photo of the screen on the computer showing the ignition table and the gauges with information from Microsquirt. All tuning is done by computer.



Finally we are ready for Bonneville after some tuning hiccups. The supercharger put out way too much boost for this engine, so a blow-off valve was installed. Number plates were attached, and our work stand for the salt flats is being tested. Lenny, Dana, and myself, with Jim taking the picture.



The Triumph took two records at the Salt Flats, with a top speed of 79 mph. There is more to be had out of this racer, we took it conservative to take the records that were in the low 70's. The top end had to be removed to verify displacement and all was okay.

This project is on-going, we are expecting bigger and better things next year. Jim LeFebvre, Lenny Spall, and Dana Robbins were at my shop on nearly a weekly basis for months, making this special race bike possible. My thanks go to their dedication.

