



Some Facts about making power in your Air Cooled Engine?

As you might know by now, there are a lot of myths about the air cooled power plant. You will find there is allot information available on the air cooled power plant, with hardly any data to back there findings, those who do provide data, are providing data for a reason. Like they say, the proof is in the pudding.

We have taking the time, to give the reader some insight, and guidance towards building there high performance air cooled type 1 engine, based on naturally aspirated conditions. The type 1 engine is what we at DRD have studied for over 30 years, with real life experience and data.

This article has been broken down into a few sections, and not wanting to get into allot technical terms and data, that the reader will have a hard time understanding.

So here we go.

What is your power plant going to be used for?

There becomes a line were engine life and power meet. The more power the engine makes, the more it will wear its parts out.

Heat also plays a big part on engine life. We at DRD look at a few basic states of tune on an engine.

A: Daily driver, low state of tune, dependable, and long life, up to 100k miles of live and good power output. 60-150hp.

**B: Street engine, Medium state of tune, good power output, and 60-70k miles of life.
160-180hp.**

C: Weekend warrior, High state of tune, life could be as high as 50k miles or more, and make 190hp+. It is not uncommon to have 200+hp pump gas engines running around on the streets.

With the three states of tune, you can see where you fit in with your engine.

Basically what dictates the power in the engine is the Heads, carbs, and cam. Engines are air pumps, and the more air the engine can pump the more fuel it can burn, in turn making torque.

Notice we have mention torque, torque is what pulls mass, and hp is derived off torque. Also to note, there are limitations with pump gas and safe compression ratios, depending where you are located in the world, the quality of Fuel varies.

We at DRD have broken our engine program down to 2 engines.

1914cc, 69mm stroke X 94mm bore, and the 2276cc, 82mm stroke X 94mm bore. We feel these 2 engine sizes give the best bang for the dollar hands down.

The 1914 engine can be tailored to make 130hp, 130 lb tq, with the right combination. Dual carbs are a must, along with a good set of heads and the proper cam. For the person on a limited budget, this is the way to go for sure. Compression ratios around 8 to 9.5 around work very well on these engines, and they will have an excellent power band if built correctly.

The 2276 engine can be tailored to make 140hp on up 200+hp, 180 lb tq, with the right combination. Dual carbs are a must, along with a good set of heads and the proper cam.

Compression and cam play a huge role in extracting the power from these engines. Compression ratios around 8 to 9.5 work very well on these engines, up to 180hp and they will have an excellent power band if built correctly. Add more compression and cam, and now you can produce more power, say 9.7 to 10.00 compression, will bring the power up to 200hp, and the engines will produce more heat, in turn reducing the life of engine parts.

We say that there is no substitute for displacement.

There are many combinations of bore and stroke, but we like to say, build it as big as you can.

Also remember, the power is in a good set of heads, and high flowing cfm numbers from heads are not always the best solution for providing torque. A well balanced set of heads, with make excellent torque, and make a very efficient running engine. Also the key to making an engine live is, proper oil temperatures, along with proper head temperatures, without controlling these temperatures, the engine will burn itself up.

Also when sourcing out your engine build, your best bet is to purchase parts from a shop that has the tools and machines in house to provide you with parts and info. Shops that machine their parts in house, and have dyno's and flow benches can prove their work, and are separated from the rest of the shops. As we say, you have engine assemblers, and engine builders. Anyone can bolt parts together, shops that have tools and machines, have full control on their product and can back the product sell.

This article was writing to hopefully educate the consumer about, the type 1 air cooled engine, and the capabilities that are available today. Lay out a game plan, and have fun.