TreneffRC

LA-15 CLUNK TANK SECRETS

If you want to have fun flying SSC you need to have a simple and reliable engine/tank setup that is easy to use and is predictable and powerful. The engine should start right away, turn 17,500 RPM's, have a broad needle adjustment and run that way the whole tank.

We're amazed at how many pilots seem to be able complicate these simple requirements.

You don't need to modify the engine, needle valve, or muffler and you don't need high pressure bladder systems.

K. I. S. S. (Keep It Simple Silly).

First let's examine the known requirements:

- Simple and reliable engine/tank setup
- Easy to use
- Predictable and powerful
- Start right away
- Turn 17,500 RPM's
- Have a broad needle adjustment
- Run that way the whole tank

Ok, the stock LA-15 with a clunk tank certainly meets all the above criteria.

What are the unknown variables?

- Air
- Fire
- Fuel

Air:

There isn't much we can do about the air and humidity except be sure it mixes with the proper fuel mixture and enters the cylinder.

Fire:

The OS A3 glow plug that comes with the engine is fine for the engine. It reliably produces a good heat range and is affordable. More expensive A8 plugs are not necessary.

Fuel:

There is a lot we can do with the fuel. We use Cool Power Helicopter fuel because it contains a high percentage of oil (all synthetic) and works extremely well with the engine. Depending how well broken in, the ambient air temperature, and humidity, the engine will require 15% to 30% Cool Power Heli fuel to achieve 17,500 RPM's.

Here in Tenneesse where the summers are hot and humid we mostly use 15% and 20% Cool Power Heli fuel to stay under the 17,500 RPM RCCA limit. There is a huge difference between the power produced by their 15% green fuel and their red 20%and 30%. This must be due to the red lube being a better lube.There is also a big difference between the heli fuel and their regular RC fuel. Only use the heli fuel. The most versatile fuel is the heli 20%. It will usually hit 17,500

and if it goes over you can mix in a little 15% to slow down. On a rare day or if we have a newer engine that isn't quite loose yet, we may need 30%, but our normal engines usually turn in excess of 18,000 when using 30% fuel.

Don't be fooled by those who do engine modifications because "they are not buying high priced high nitro fuel. Cool Power Heli 15% runs about 16 cents per ounce and 30% is about 22 cents per ounce. So it costs 88 cents per flight for 30% fuel verses 64 cents per flight for 15% or some other brand.

Disclaimer: We have tried many fuels but certainly not all brands. You may be able to find another brand that performs as well. We typically see a 1000-1500 RPM increase with 30% Cool Power Heli over other fuels we have tried. We use the 20% cool power as our standard to test against. We suggest you do the same.

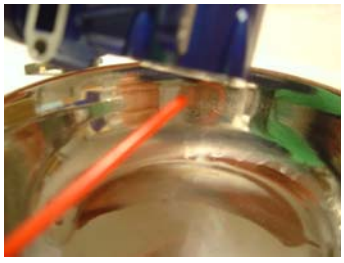
Here is our method:

Opening the box.

When you first open the OS LA .15 box, you will find the engine, its glow plug, two muffler bolts, and the muffler.

Before you mount the engine, unscrew and remove the back plate using a number 1 Phillips screwdriver. Push hard on the screws so that the heads don't strip. Optionally you can replace the back plate screws with M2.5 x 8 socket head machine bolts, but this isn't necessary.

Some pilots cut the needle valve assembly off of the back plate and mount it separately so that it won't break in a mid-air. Rather than planning for failure, leave the needle valve intact. It is far easier to adjust the needle with one hand and there is less chance for mixture changes when things are mounted solid. Besides a new back plate only costs $6.00. KISS - leave the engine stock.



Clean the back plate, the inside rear of the crankcase and screws with a non-oily solvent. We like Wal-Mart brand carburetor cleaner but lacquer thinner or any equivalent non-oily solvent will work. The back plate should be dull looking if you cleaned all the oil properly.

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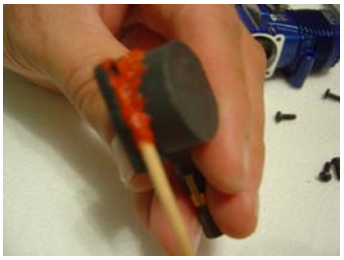
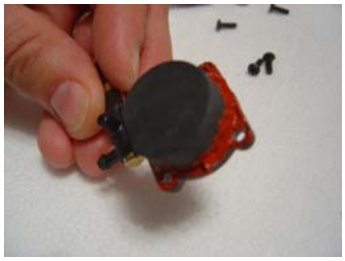
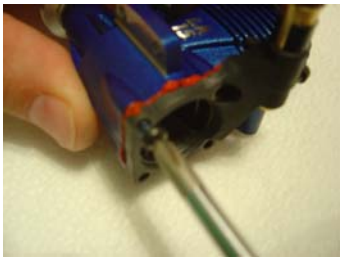




Once the Back Plate is clean and dry, carefully spread red silicon sealer (Wal-Mart and auto parts stores) around the seal of the back plate.



Reinsert the back plate into the crankcase.

Put blue Loc-Tite on the four screws and tighten them real tight. If you follow this method you will not have any problems with the back plate leaking.

Clean off with a paper towel and the engine will look pretty again!

We usually replace the muffler bolts with (M2.5 x 25) socket head bolts to reduce the frustration of stripped heads if muffler removal is required but this does not do anything to improve engine performance verses the stock screws as long as you get the original screws tight.

While talking about the muffler, the big secret for a clunk tank set up is do nothing! DO NOT DRILL out the BAFFLE or STINGER of the muffler. Those engineers at O.S. spent a lot of Yen to design a muffler with the right combination of flow verses tank pressure. The stock muffler is an expansion chamber type which is perfect for our application. The engine will run fine with the stock muffler. In fact, we add a 2 inch exhaust extension to our muffler and still exceed 18k RPM's with certain fuel. KISS - leave the engine stock.

We use Kraft-Hayes 4 ounce Slim-Line and Dubro 4 ounce tanks but any clunk tank will work. Build them per the manufacturers instructions.

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Break in

Everyone has an opinion on engine break-in and here is ours!

We believe in breaking-in our engines “in the air” set very rich for a few flights. We believe the engine runs cooler and sees a realistic variation of loads with actual flight. A side benefit is that we also use these “break-in” flights” to “break-in” our new airframes. Yes, control surfaces require a break-in also.

Fortunately, the OS LA 15 does not require an extensive break in routine. There are several important things to remember, though.

For all flights use 8x3 Master Airscrew propellers. We “break-in” with Cool Power green 15% fuel. It’s cheap and works well.

Set the needle real rich and run full throttle for a minute or so. Then begin leaning out the needle until the engine breaks into a steady 2-cycle (not peaked). Fly two full tanks at the steady 2-cycle, gradually lean the needle a little bit each flight for the next three flights. You should be able to peak the engine after the 5th or 6th flight. The engine will just keep getting better and better with each flight after this.

After this the engine will be ready to tune and run reliably every time you start it.

During hot summer combat heats set the needle valve one click rich as it will lean out a little when the engine gets good and hot.

Top Secret!

The airframe: We only mount our engines on genuine Battle Axe’s. These airframes offer a solid aluminum motor mount which ensures that the engine combustion power is transferred to the propeller rather than using that power to vibrate a weak engine mount. Secondly the aluminum motor mounts act as a huge heat sink which keeps the engine cooler. Third, the Battle Axe has the clunk tank system mounted in the most ideal location relative to the carburetor.

Conclusion

If you follow these steps with your new 15 LA you will experience easy starting, consistent engine runs.