

1 - Tune the engine when it is warm, and double check the tune after a flight.

2 - On the DLE there is a little silver screw on the carb that is an "idle set screw". It has a spring on it and it sets how low the low throttle arm will physically go down. Take that screw OUT and deposit it in the trash can. Do not remove the black H and L screws obviously.

3 - Start the engine and run it for a good few minutes with varied throttle and some full throttle run ups to get it nice and warm.

4 - If you have not done so, adjust the servo travel for a consistent idle, does not need to be perfect as long as it is low. 1600 is too high to properly tune that low, it should be much closer to 1200.

5 - Tune low needle first. Now run the engine up to clean it out with a couple full throttle run ups and then go to low idle. Listen to the engine.....how long does it take to start to "load up" or start to slow down in RPM? If it is rough right away you are likely way too rich. Normal starting point on 100cc engines is 1.5L and 1.5H. I have had to go as low as 1 3/8 on the low needle on the DLE carbs. Adjustments on gas carbs are VERY small, like the width of a screwdriver blade or 1/16th of a turn or less. **A good "safe" tuning on the low needle you should be able to clean it out with some run ups, return to idle and it should have a nice steady low idle for at least 15-20 seconds before it starts to load up. If it does this it is still just a "touch" rich but will not die on you and it will run nice and smooth.**

6 - How low should react. Now that you have it running, clean out the engine and let it go to idle. Let it sit for 10 seconds or so and then slam the throttle to full, not slow, nail it!! Listen to what it does. **If it dies or almost dies, you are too lean. If it stumbles and works it's way up (may see smoke in exhaust) you are rich.** As tuned in number 5 above it should run up quickly with very little or no noticeable stumble.

7 - Now tune the H needle. There are several ways to do this with RPM but the most simple way for a safe needle setting is this. With the engine warm and the low needle tuned run the engine up to full throttle for about 5 seconds. Now chop it in one quick motion to low. Listen to what it does then.

- **If it returns to a steady idle, you are very close.**
  - **If the idle goes way low and works it's way up to a steady idle you are too rich.**
  - **If it stays at a high idle and then slows down you are too lean.**
  - **If it dies you are either way too rich or way too lean.**
- With the H at 1.5 you should not be too lean.**

8 - When H is set return and double check the L and then double check the H. Then it's time for a flight. Listen to the engine carefully for all of the noted symptoms while you are flying. One engine test I do in-flight is for the H needle. Get the engine nice and hot, maybe a high speed pass or something. Now do a full throttle straight up line. Listen! Engine should be smooth and steady until you can't go higher. If it starts to sag at all, land immediately and richen the H needle just a tad and try it again.

This fade can also be caused from overheating not tuning related so make sure your engine is properly baffled if you know the tuning is correct.

[Method as outlined by terryscustom on FlyingGiants.com](#)