

# PDMCC

Pendle District Model Car Club

[www.pdmcc.co.uk](http://www.pdmcc.co.uk)

## Setup Guide

### How to set the carburetor

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Source: RB Products

To be able to adjust the carburetor of a nitro engine correctly, you need patience and must try and understand how this works. Sometimes nitro engines are difficult to set, and if you have difficulties, then we suggest you ask your LHS (Local Hobby Shop) or Dealer where you have purchased the engine to help you in this matter. If however you prefer to try yourself, here is how:

**Attention: Work only on 1 carburetor adjustment at a time and make only small adjustments, maximum 1/8 of a turn! Pre adjustments.**

Once the engine is started let it reach operating temperature, then proceed as follows:

1. Set the main needle by holding the car off the ground, then open throttle completely. The engine should not completely clean out and should stabilize at 80% of top RPM, but if the engine cleans out completely and the rpm continues to climb too high, close the throttle immediately and open the main needle and repeat the sequence, until the engine does not clean out completely and the rpm stabilizes at 80%. If the engine runs too rich (4-stroking all the way), lean the main needle until the engine just starts to clean out.
2. Set the idle rpm of the engine by holding the car off the ground, then open throttle till the engine rpm reaches the above rpm, and then close the throttle. If the engine stalls, then you need to increase the idle by turning the idle air screw clockwise until the engine does not stall anymore. However, when the idle of the engine remains too high, then you need to lower the idle rpm by turning the idle air screw counter clockwise.
3. Set the idle needle by holding the car off the ground, open the throttle until the engine reaches the 80% rpm, and then close the throttle. If the engine idles for 2-5 seconds and the idle rpm decreases, then the idle needle is set too rich, so lean this setting by turning the idle needle clockwise. Repeat this process until the engine has a constant rpm for at least 20-30 seconds after the throttle has

been closed. If the engine idles for 2-5 seconds and then the idle rpm increases, the engine is running too lean at the idle needle, so richen the idle needle by turning it counter clockwise to remedy this.

4. Set the idle rpm by using the idle air screw, and try to find a low but reliable idle rpm. A too high idle rpm makes it more difficult to slow the car during breaking.

**Attention: When adjusting the idle needle, this then can effect the idle rpm, use the idle air screw to adjust the low rpm when it becomes too high or too low.**

Once you are satisfied with your carburetor settings you are ready to put the car on the track and make the final adjustments.

#### **Final adjustments while driving.**

When ready with the pre adjustments you are now ready to put the car on the track and start your final adjustments. If you have set your idle needle and idle rpm correctly in the pre adjustment phase then you only need to adjust the main needle to find the correct setting and performances of your engine.

Start leaning the main needle by small increments (1/8 of a turn maximum) and run the car again, repeating this sequence until the engine completely cleans out, accelerates well and reaches maximum speed.

To prevent your engine from running too hot, it is advised then to richen the main needle (1/8 of a turn counter-clockwise), since running the engine too lean on the main needle will cause the engine to overheat, resulting in excessive engine wear and possible breakage. A possible way to check the engine temperature is to apply a few drops of water on the cylinder head. The drops should evaporate only after 3-5 seconds, If they evaporate immediately the engine is too hot, so richen the main needle (1/4 of a turn counter-clockwise) immediately.

Check your engine temperature regularly. Another way of knowing if your engine is running too lean, is when you are driving and the engine starts to lose its power at the low rpm range and no smoke is coming from the exhaust; if this happens, richen the main-needle if you do not want to damage the engine.

Once properly adjusted, the engine should produce a strong, high-pitched sound at maximum speed, and a thin trail of smoke should be visible from the exhaust tailpipe.

**NOTE: The carburetor settings may change with changes in weather conditions, fuel, glow plug or exhaust system. After changing any of these, always richen the main needle 1/4 to 1/2 of a turn and then re-adjust the main needle again on the track.**

**NOTE: When the engine stops, the heat of the engine will go into the carburetor and alter the idle rpm. This can translate into a bad idle rpm, especially when you have your idle rpm a little low. This will come back to normal when you have made at least 1 lap on the track again so the carburetor has reached its normal working temperature.**