

PDMCC

Pendle District Model Car Club

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Setup Guide

8 things to check to have a strong engine

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When you are having difficulties getting your nitro RC car engine to start here are eight things to check and get you up and driving in no time.

1. Check the obvious. Is there fuel in the tank? Is the fuel making its way into the carburetor? When you prime the tank is fuel making it into the carb? Is your glow plug ignitor making a firm connection with the glow plug?

2. Check the plug. Lack of ignition could be from either a bad plug or a low battery in your ignitor. To test the plug unscrew the glow plug and place it in the glow ignitor. The coils near the tip of the plug should be red like the ones inside the plug. If the coils at the tip are not as bright as the ones farther inside the plug you may have a bad plug. Toss the bad one and buy a new one. If all the coils appear to be glowing, but are very dim, then your ignitor batteries might just need a charge. When you reinstall a new or old plug make sure the copper washer is in place on the plug. If the old washer is one that you have socked down tight, replace it to make sure the seal is good. You can use a small amount of grease to hold the copper washer in place. Tilt the car on its side so the washer stays on the plug when you are installing it.

3. Check the pressure situation. If you are running an old engine, remove the glow plug and try turning the engine over by moving the flywheel with your finger. You should feel resistance to your movement as the engine's piston reaches the top of the stroke. If the flywheel spins freely with no resistance, you should replace piston and sleeve. (Break in the new piston and sleeve slowly at a rich setting to ensure proper lubrication and seating of the new parts.) On new engines, compression should not be a factor unless you have torn the engine apart. Just the lack of compression can keep your engine from starting; too much compression can keep the engine from starting and also do some damage. Too much fuel being introduced into the engine usually causes too much compression, also known as flooding the engine. To relieve the pressure, remove the glow plug and turn the vehicle over to spill the fuel out of the engine. Reinstall the plug and try again. The cause of flooding is from overpriming the engine. If you have a pump on your tank, don't over prime it. Once you see fuel traveling through the fuel line and into the carb, stop. Don't keep pressing the primer. The same goes for placing

your finger over the pipe and turning the engine over. Once fuel makes it into the carb your priming duty is finished.

4. Check your needle settings. Finding the perfect needle setting can mean the difference between an engine that won't start and one that screams along in perfect tune. Most engines have a high speed and low speed needle. Some RTR kits come with engines that have a single high speed needle. These needles determine the ratio of fuel to air entering the engine. A high amount of fuel than air will cause the engine to run rich. A high amount of air to fuel will cause the engine to run lean. When the engine is running too rich it will not keep running and stall, or just not start at all. If an engine is too lean, it will start, but will begin to accelerate while idling and eventually overheat. If you are having trouble getting your engines to start grab your instruction manual and see what the recommended needle settings are. You should see a setting like "two and half turns out on the high end". This means screw the high speed needle in until it stops (not super tight, just until it stops). Then back it out two and a half turns. Meaning the line on the needle has come around two and a half times from when the needle was all the way in. If the needle settings are as prescribed in the manual and the engine still doesn't want to start, try leaning the high speed needle a quarter turn at a time until the engine fires up, then back the needle back out to the recommended placement.

5. Check your carb opening. For your engine to start and run it needs a sufficient flow of air. That means that your engine's carb should be partially open when set at idle, and open further when you go to start it. If this is not the case your engine might flood itself and not start. The carb opening should be at least at one quarter open if you want the engine to start quickly. Double check that there are no kinks in the tubing used to hold the air filter in place or being used as an exhaust diverter.

6. Check your clutch. If the wheels are spinning when you are pulling the starter or trying to turn it over, you have got problems. In order for your engine to start it needs to be free of any load on initial start up. If the clutch shoes are hung up, they will place drag on the engine, keeping the engine from coming to life. Your vehicle's clutch bell should be able to spin independent of the engine's flywheel. If this is not the case or you notice the wheels beginning to spin when you have the car on the starter box, pulling the pull start, or hitting the starter trigger, you might have a broken clutch spring or problem with your clutch. Break out your manual and get to wrenching.

7. Check your engine rebuild. If an engine's head is not installed correctly and fastened properly, your engine will not start. When putting the head back on make sure to cross tighten any bolt patterns. Check your engine rebuild against the manual. Make sure that you have the correct length and size screws back in the right holes. Double check that the carburetor is secured tightly to the engine. If things were left loose, there will usually be some evidence such as fuel or oil around the leak.

8. Check your fuel freshness. If you have a tendency to leave your fuel bottle with the cap off, or pour old fuel back into your fuel jug, you most likely have ruined your fuel. Fuel is alcohol based and hydrophilic. This means that the ingredients in fuel absorb water; in fact they absorb water out of thin air. If you leave a large gallon container open in normal or humid conditions, that gallon of fuel can be ruined in about an hour. Water absorbed into the fuel rendering it useless. Your engine might be able to run with

contaminated fuel, but you engine will fail to tune correctly and you could possibly damage your engine.