

10 Ways Guaranteed to Keep Your R/C Car Running Well

1. Keep It Clean

Dirt is the most common way to ruin your engine. If it gets inside, the dirt will act just like sandpaper and ruin the close fit that the parts need for your engine to operate correctly.

- Use an air filter to keep as much dirt outside as possible. A two or three stage filter with an oiled foam element is the best way to go.
- Dirt on the outside of the engine acts just like a blanket of insulation and prevents proper cooling. Keep your engine clean.
- Use a fuel filter. Dirt getting into the fuel will clog the fuel passages in the carburettor and also get those abrasive particles inside. Keep your engine clean.
- Dirt will damage your engine very quickly and repairs for dirt are not covered by the engine manufacturer's warranty.

2. Keep It Rich

The high-speed needle valve is used to adjust the mixture of fuel and air needed to get the optimum performance from your engine. If it's adjusted too lean, your engine will get less fuel than it should.

- You must remember that the engine gets its lubrication from the oil that's in the fuel. If you run it too lean, the engine will not get enough oil to keep the internal parts lubricated, even though it sounds better.
- Parts will start to run hot and then seize. The result is a typical problem as a broken connecting rod that seized to the crankshaft, and then broke as the crankshaft tried to continue to turn.
- Keep the engine running on the rich side of the highest RPM setting to ensure proper lubrication.

3. Keep It On The Ground

You should run your engine at high speeds only when you are driving the car.

- Do not put the car on the box or stand with the wheels off the ground and then run the engine. You'll quickly overspeed your engine and ruin it. Generally, the connecting rod will break from the over-revving.
- Do not remove the engine from the car and try to run it with just

the flywheel. That does the same as described above. The engine must be run with the load of the car when driving.

4. Keep It Cool

If you run your engine good and hot, you'll have a nice chunk of useless aluminium in a short time.

- Running the engine hot causes the oil in the fuel to break down and quit working. The parts will seize. The repairs won't be cheap.

Your engine is equipped with a special heat-sink cylinder head to make sure it gets enough cooling.

- Keep the head clean so that the dirt doesn't act like an insulating blanket.
- Make sure that any airflow passes through the fins of the cylinder and head.
- Make as many cutouts in the car's body as necessary, and don't skimp on the size.

5. Keep It Lubed

Make sure you're using a fuel from a reputable, name-brand manufacturer.

- Your fuel should have at least the amount of oil recommended by the engine manufacturer. If you can't find a particular recommendation on oil content, then use a fuel with 20%-22% oil content.
- If you're trying to run a fuel with more than 20% Nitromethane, you should add some oil to your fuel, such as Klotz Techniplate™ or Baker "AA" Castor Oil™.

6. Keep It Properly Lubed During Storage

If you let your engine sit with nothing done to it after you last ran it, the internal parts will start to corrode... especially the steel crankshaft and ball bearings. They'll rust. If the fuel has castor oil in it, it will begin to dry out and become gummy.

- Rust inside an engine will erode tight clearances and score polished surfaces.
- Gummy fuel residue blocks oil holes in connecting rods and crankshafts.

Here's how to prevent rust:

- At the end of the day's running, pull the fuel line from the engine.
- Drain the tank, and then start the engine.
- Let it run until it's absolutely dry of fuel.
- Add several drops of an after-run oil. There are several after-run oils on the hobby market. You can also make your own from a 50-50 mixture of "Marvel Mystery Oil"[™] and automatic transmission fluid.
- After adding the after-run oil, turn the engine over several times to make sure it's worked into all of the engine's internals. Add more if you are not sure that you put in enough.

7. Keep Good Power

Nitro, or Nitromethane, is the main power ingredient in model fuels. Raising the nitro content will make the fuel "hotter" — that is, allow the engine to develop more power. More is better, right? Not really.

- Unless your engine is designed and ported for high-nitro fuels, you won't see much gain in performance above 20%-25%.
- While some people are running nitro levels as high as 50%, they have modified their engines to handle it. They've also carefully blended their fuel to make sure they have enough oil.
- The best performance enhancer is a good driver. A driver who can keep the car on the track will usually beat a less experienced driver with a hotter set up.

8. Keep It Smooth

When you tighten the pilot shaft onto your flywheel, it can be hard to keep the engine from turning over. It may be tempting to stick something into the exhaust port to keep the piston from moving, but do not do this! You'll also put a nice "ding" in the piston and in the cylinder liner. You've just ruined your nice, new engine. A new ABC piston/cylinder assembly (the most commonly-used kind in R/C car engines) will put a nice hole in your pocketbook.

This kind of damage is not covered under the warranty.

- If the flywheel can't be tightened onto the engine without it trying to turn over, grip the drive washer in a pair of large adjustable pliers, like Channel Locks[™], with the drive washer protected under several layers of cloth. You could also try a strap wrench.
- If you feel more adventurous, you can remove the rear cover of the engine and insert a piece of wooden dowel stock or plastic rod to keep the crankshaft from turning. Don't put anything into the engine that will hit the piston.

9. Keep Away From Silicone Seal And Thread Stickers

Silicone sealers usually have a smell like vinegar when they're curing. Vinegar is mostly acetic acid and that causes corrosion.

- The inside of an engine has two kinds of metal in it... aluminium for most of the parts and steel for the crankshaft and bearings.
- Two different kinds of metal will start to corrode if they have some kind of electrolyte between them and a tiny bit of acid will do the job.
- Aluminium corrosion can cause the entire inside of the engine to turn a dark grey or nearly black colour. Corroded steel is rust. See above about rust.

10. Keep It Dry

While it sounds obvious, keeping water out of your engine isn't as easy as it sounds. Sure, you can dry it out when you've run through some mud or puddles, but how about condensation?

- Changes in temperature can cause moisture in the air to condense inside the engine. This can happen in the winter and summer, so keep your model inside the house, not in the garage.
 - Keeping it inside the house also gives you good reason to keep it clean! Just try to explain oil spots on the carpet when your engine is dripping oil from a just-finished running session.
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