

## HOW TO

# GET YOUR RIDE RACE-READY

We show you how to get your rig ready for battle

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They say that races are won or lost in the pits, and that holds true for RC racing as well. Preparation won't automatically result in a win, but it will ensure that your vehicle is ready to fight for that win every time you hit the track. Keep in mind that much of that prep happens not in the pits but on your workbench at home. Here are a few things to that you can do to your ride to make it race-ready.

## CLEAN IT

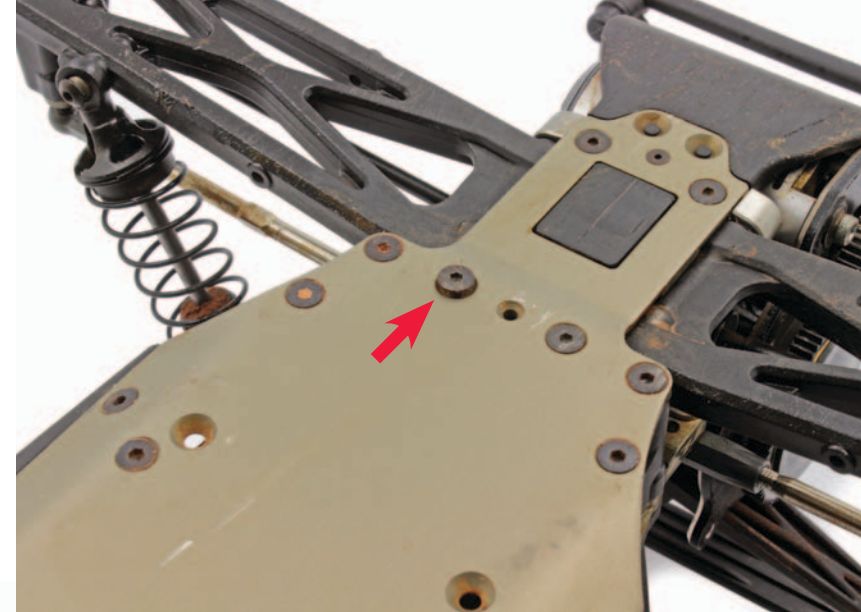
A day of racing will result in a car that is covered in dirt, which can hide some problem areas. Before working on your vehicle, take the time to clean it to give yourself an unobstructed view of what you're working with. After removing the tires and body, give your ride a good spray-down with a cleaner like Dynamite's Absolute Force and let it sit for a few minutes to give it time to break down any dirt, oil, or grease. Blow the cleaner off with a compressor (or wipe it carefully with a rag if you don't have a compressor), then give the vehicle a light coat of WD40 and blow it off again to complete your cleaning (the WD40 will make the car easier to clean next time, prevent corrosion, and keep all your hinge pins and pivot balls operating smoothly). When using this process to clean, keep the cleaner away from the center of the vehicle so that the electronics aren't exposed to them. You can clean that area later with a brush and rag. Nitro guys, make sure that you stay away from the brakes when doing your cleaning! It's also a good idea to remove the radio tray, fuel tank, and engine from the chassis to make cleaning easier. This list may look like it will take you a long time, but it won't take you very much time to get through it. Now you're ready to start the real work.

Cleaning your vehicle will make it easier to identify issues—and it will make for a cleaner work area.

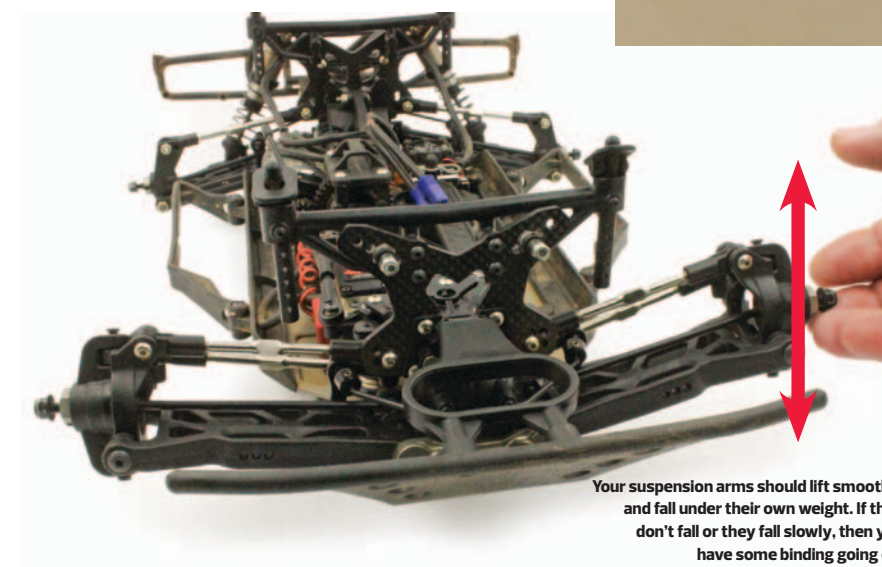


## Screws, Nuts, and E-Clips

Give your vehicle a once-over and look at all the screws, nuts, and E-clips (if your car uses them) to see if they are loose or missing. Pay close attention to the areas where screws thread into metal parts; too little thread-lock (or none!) will almost always result in a screw that backs out. Sometimes screws can back out of plastic parts; those can be secured with a small dab of CA glue. There's no need to take a driver to them to see if your screws are loose; if they aren't backed out or gone, then chances are good that they are secure. Don't forget to check the wheel nuts if your vehicle uses nylon nuts. The nylon insert will lose its grip over time; if the nuts don't have resistance as the axle's thread passes through, it's time to replace them.



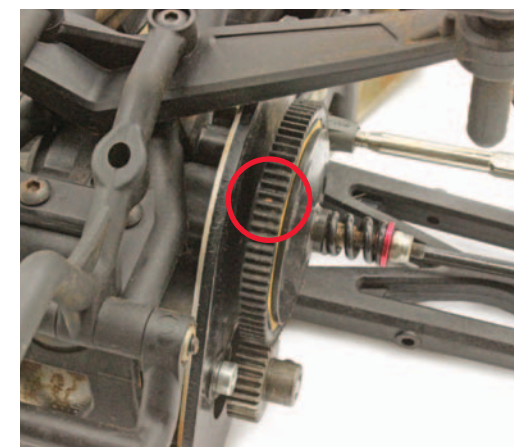
Screws can back out when you least expect it and put an end to your race. A little thread-lock will secure screws that thread into metal parts, while pesky screws that back out of plastic parts can be secured with a little bit of CA glue.



Your suspension arms should lift smoothly and fall under their own weight. If they don't fall or they fall slowly, then you have some binding going on.

## Suspension

On track, vehicles take a lot of hits from other vehicles or against the pipes, and that can damage your suspension. If the suspension is bound up in any way, it will significantly change how your vehicle performs. Remove the front and rear shocks, and lift each suspension arm and let it fall. If the arm falls under its own weight, then you're good to go. But if the arm stays up, then there's some binding going on. Take a look at the hinge pins and hinge pin mounts to see if there's any damage. A bent hinge pin brace or a severely bent hinge pin will be noticeable at a glance, but a slightly bent hinge pin might not be visible. Remove the suspected hinge pin from the vehicle and roll it on a smooth flat surface; a good pin will roll smoothly, while a bent one will wobble.



Even with a gear cover in place, dirt can make its way to the spur gear. Check for debris and worn or broken teeth.

## SPUR GEAR

Even if your vehicle has a spur-gear cover, dust and small debris can make its way inside and cause damage to your spur gear. Spin the spur gear and check for worn or broken teeth and for small pebbles in the gear. These can result in a gear that fails when you least expect it. A spur gear is inexpensive, so go ahead and replace it if you have any of these issues. Also, take a moment to check the gear mesh between the pinion and spur gear. A motor that isn't tight enough can shift while racing and alter the mesh, which can damage your spur gear. You want just a slight tick of play between the two.

Compress the shocks; listen for air inside and feel for grittiness, and rebuild if necessary.







**Differential and Slipper**  
You can quickly check the slipper by holding the tires and trying to spin the spur gear, but it's better to spin it using the throttle. Power up the vehicle, hold the tires, and goose the throttle. The front end should come off your workbench about an inch. If the front end comes up more than that, you're slipper may be set too tight; if it doesn't come up enough, the slipper is too loose or your ball diff may be slipping. While holding onto the spur gear, give a tire a spin and feel for grittiness in the ball differential. If there is any, this is a sign that the diff is set too loose and is slipping; you'll want to rebuild it. If it's smooth, then you're good to go.

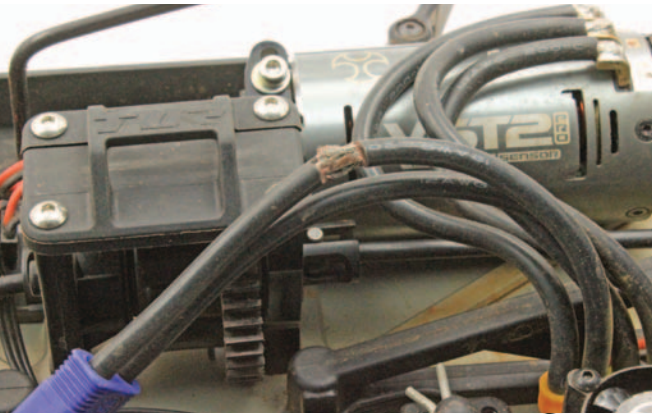
Hold onto the spur gear and spin a tire; this will quickly tell you if you need a diff rebuild. If it feels gritty, chances are that the diff has been running loose and has been slipping.

**TIRES**

Give your tires a look to check for damaged or worn tread, and replace them if necessary. Be sure to take the time to check the bond between the tire and rim. Hold onto the rim and try to pull the tire away from it. If the tire lifts off, then you'll need to clean dirt out of that spot and add some glue. Check all the way around, and make sure that you look at both the front and back sides.



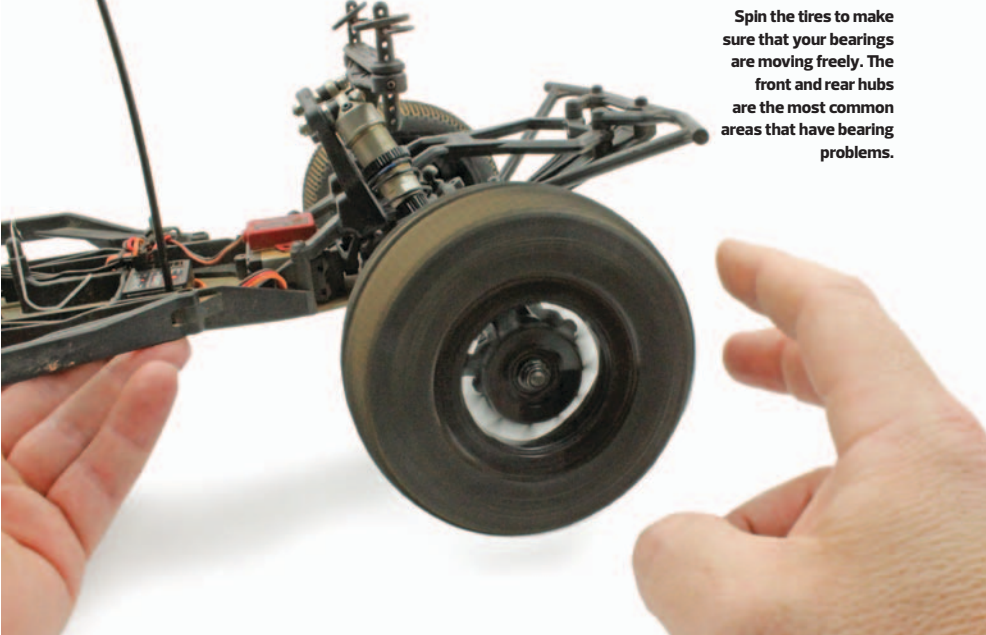
No matter how good your glue job is, you'll always want to give the tire a tug to make sure that it's still properly secured to the wheel.



There's always a chance that your wires may rub on something that they shouldn't. That can cause a short.

**WIRES**

For the most part, the wires on your vehicle are protected from the elements, but there's always a chance that they can shift and rub against the drivetrain, suspension, or other moving parts. That can rub the insulation off the wires and possibly even cause a short. Inspect all the wires to make sure that the insulation is completely intact. Also, examine the solder joints to make sure that the wires remain properly anchored. Don't forget to check the sensor wires on your brushless motor if you're using one; they can break at the connector.



**Bearings**  
To check the bearings, back the pinion gear away from the spur gear and spin the drivetrain by turning the tires. If they spin freely, then your bearings are good; if they stop right away, then a bearing is locked up somewhere. It may take a while to find the bad bearing, but if you start at the hubs (where the bearings see the most dirt and stress), you'll probably find the problem pretty quickly.

Spin the tires to make sure that your bearings are moving freely. The front and rear hubs are the most common areas that have bearing problems.

**Nitro-Specific Checks**

A lot of these checks will work for you nitro guys, but there are some specific ones that you should also take a look at before filling up and firing up that engine.



The clutch bearings are a failure point on any nitro-powered vehicle's drivetrain. Give them a spin to make sure that they are working as they should.

**Clutch Bearings**

Clutch bearings often fail due to the extreme loads being put on them by the clutch bell and spur gear. Give the clutch bell a spin to make sure that it rotates freely. If it doesn't, you have a bad bearing. It's a good idea to go ahead and replace both at the same time.



Even if the filter looks clean, it will benefit from a good cleaning. Don't forget that add some air-filter oil once it has dried!

**Air Filter**

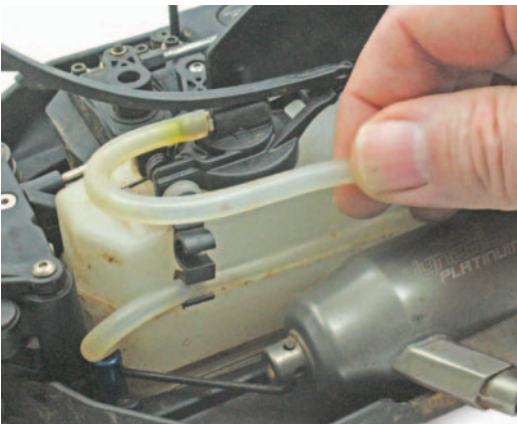
No matter what the conditions were that you were running in, your air filter will need to be cleaned to get the best possible performance out of your engine. Give the filter a good scrub with soap and water, let it dry, then make sure that you get some air-filter oil on it to help the filter trap debris.



This engine hasn't run much but the clutch is already showing signs of wear. It's always a good idea to check the clutch before you head out for your next race.

**Clutch Shoes**

Remove the clutch bell and give the shoes a look to see if they are worn. You'll know that it's time to replace them when you see the tops of the springs starting to wear. If you're running aluminum shoes, check for galling; this will cause the clutch shoe to hang up or not engage properly with the clutch bell. A small file can take care of your galling issue. Use it to knock off the edge that has built up and your shoes will be ready for another race.



**Fuel Line**

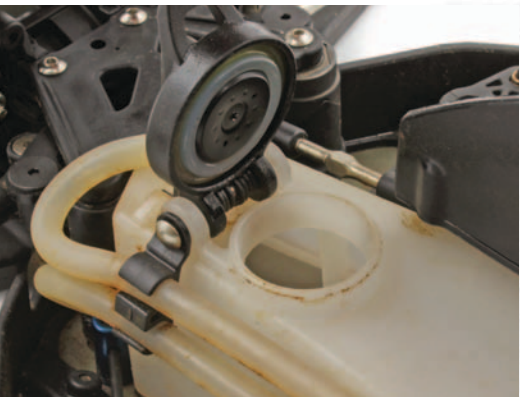
Just like the wires in an electric car, the fuel lines are protected from the elements, but there's still a chance for damage to occur. A slip of a screwdriver can poke a hole in it, or vibration can cause them to rub and wear through or rub up against the rotating parts of the drivetrain. Fuel line is inexpensive, so make sure that you change it out whenever you see the slightest amount of damage.

The fuel line can be punctured easily, and air bubbles in the lines can cause you a lot of headaches.

**Fuel Tank**

Take a look at the side of your tank at the seam to make sure that it remains properly sealed. Another area of concern with a fuel tank is near the exhaust. There's a chance that the pipe can move and come in contact with the fuel tank. That area can melt or be rubbed through by the pipe. Also, open up the lid on the tank and make sure that the O-ring is sealing properly.

When looking the tank over, don't forget to check the O-ring seal under the lid.



**FINAL WORD** Once you get through this list, you will be ready to hit the track. It doesn't take long to complete, and you'll have peace of mind when you get to the track so that you can stay focused on practicing or making changes to get your vehicle dialed. These are the steps that I personally take to get my vehicles ready to go every time I race, and I almost never suffer a breakdown at the track. Now, I just need to figure out how to get on top of the podium! ☺

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