

PDMCC

Pendle District Model Car Club

www.pdmcc.co.uk

Setup Guide

Advanced Maintenance

October 2009

Source: nitrotek.co.uk

For basic maintenance information please see our "what you need to check before use" section on our web site. If you are serious about the hobby though and want to keep your car well maintained you should maintain the following items:

General Cleanliness - A clean car is a happy car! Not only that, but you will be able to spot problems easier on a clean car than on a dirty car, and also while cleaning it, you can give the car and body a quick look to see if anything is wrong. Use a large natural-hair bristle brush (from a hardware or paint store) to remove dust from the chassis and inside of the body. Use some denatured alcohol or motor spray to clean off tyre and asphalt marks from the outside of the body.

Differentials - These let the outside wheels in a turn spin faster than the inside wheels, so the car can maintain the proper path when turning.

For cars using gear differentials, you should check the areas around the diff shafts for grease leaks every 20 to 25 runs. If you see a leak, you need to take apart the diff and put more grease in it, and reassemble it carefully.

If you run a car with ball differentials, you should check the diffs for grittiness every 5 runs or so. To do this, put the car on a stand so the wheels can rotate freely. Hold the spur gear and slowly turn a wheel. Try to feel if the action is smooth or 'gritty'. If it feels gritty or the wheel is difficult to turn, you need to rebuild that diff. Now check the other diff using the same technique. You can use diff rings and thrust washers twice - just flip them over to a smooth side. If you don't have a smooth side on the rings or washers, you need to buy new ones. We don't recommend using diff balls and thrust balls through more than one rebuild - you should replace these each time you rebuild a ball differential. Carbide diff balls will last longer under the same circumstances as regular diff balls.

Shocks - Shock absorbers soak up bumps in the track and let the tyres maintain constant contact with the racing surface; they also let the tyres dip into depressions in

the track. If you are a 'backyard basher' or casual hobbyist who doesn't race, you should give your shocks a look over before each time you run the car. If you see any leaks, you need to rebuild your shocks. When rebuilding shocks, you should always use brand new o-rings. Never re-use old o-rings!

Racers should check their shocks before and after each run. Any leaks mean it's time for a rebuild. Shocks on a racing R/C car should be rebuilt or given a good look every ten or fifteen runs. Be sure you write down what shock oil you are using in the car! Either write it on the shock cap in a fine-point permanent marker or use a Setup Sheet . When rebuilding shocks, you should always use brand new o-rings. Never re-use old o-rings!

Drive Shafts - These transfer the power from the engine to the wheels so are under a lot of stress. Whether you race indoors or outdoors, you should check the shafts before the day's racing begins for any bends or wear on the ends. Replace any that need it or consider upgrading to our CVD ones under upgrades.

Drive Cups - These connect the drive shafts to the wheels and diffs. They are held on by grub screws and making sure these screws are tight is very important. Use strong threadlock on any loose ones. If a drive cup screw comes loose and you do not notice it could damage the differential and other components.

Bushings - Used on most rotating parts on sport or budget kits, bushings are better than direct contact between the parts, but not as good as ball bearings. Bushings don't need any maintenance to speak of, just keep them clean and grease them when they are first installed.

Ball Bearings - Used on most rotating parts on pro-level kits, bearings provide a way to eliminate almost all of the resistance that bushings have and serve to make the car quicker overall. For kits with the standard shielded bearings (metal shields on the side), just brush them off every now and then. You may want to put a very light dab of oil and let it soak into the bearing, but for the most part just brushing the dirt off the bearing is fine.

Gear Mesh - The relationship between the primary drive gear (pinion or clutchbell) and the secondary drive gear (spur gear). A tight gear mesh (the spur cannot 'wiggle' when installed) has too much friction and will cause the motor or engine to work too hard and could melt the spur gear from the friction. A loose gear mesh (the spur can move significantly) will probably cause the pinion gear to strip the spur gear, ruining the spur gear.

To set a proper gear mesh on electric cars, use a small piece of normal notebook or copier paper and put it in between the pinion and spur, and tighten the motor onto the motor mount. Remove the paper, and that is how much gear mesh you should have. For Nitro cars, you can get away with a little bit looser gear mesh than on electric cars because the gear teeth are much larger. Use the same technique described above, but fold the paper once before you put it in between the gears.

One-Way Diffs - Many racers do not lubricate the one-way differentials as often as they should. Every few runs, you should take the one-way diff out and remove the gear shafts to inspect the bearing. If there is no hint of grease on the bearings you should use a very small amount of the blue-capped grease that comes with the one-way diff (the amount of grease that would end up on a toothpick or pin if you dipped it in the grease) and re-lubricate the one-way bearings inside the main diff body. This will help prevent a major cause of one-way diff failures. Crashing and no lubricant are the main reasons why the one-way bearings in the one-way diff break.