Schumacher Nitro Storm 21 XS Truck Review

by Mark Christopher

Complete engine and gear box assembly.

Stunning !!!!!!

Having been a confirmed electric on-road racer for some while, the chance to review an IC Truck really wetted my appetite, also as it was to be Schumachers latest high speed fun machine the 21X powered Storm.

Let's get started

The box is colourfully presented detailing the kit contents and picturing the Storm. I could not wait to get into the kit. On opening the box you see the body, the big wheels and tyres and the engine. Also enclosed is a box containing the smaller parts and an instruction booklet and update leaflet. Being a mechanic I went straight for the engine, and what a monster. After seeing the .12 size engine in the Nitro 10's, this .21 size (3.5cc) engine is big!. The instructions must be read thoroughly before you begin building your kit as there are several alterations to the assembly procedures. These are detailed in a separate leaflet. I found the best way is to mark the main booklet where the new sections fit before you begin. The engine section has good details of which bits do what and why. Also the kit comes fully ball-raced.

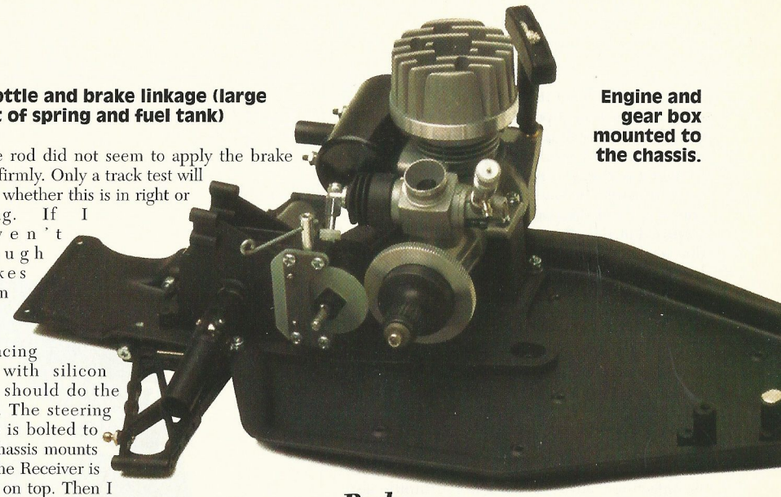
Engine

The first thing I did was to remove the pull-start to see how reliable it looked. There is a spring and a heavy duty mechanism. My advice is to leave this well alone unless you have any problems. I would then suggest that you take it to a Model Shop or someone mechanically minded as the spring although not impossible is very difficult to refit. The engine is mounted to a substantial moulding which in turn bolts to the chassis. Next the fly-wheel is then bolted to the crank-shaft which holds the centrifugal clutch in the pinion bell. In the instructions for mounting the exhaust muffler it shows some 'Silicone Rubber (RTV) being applied as a gasket. As this is not included in the kit and there is no further mention of using it I used 'Instant Gasket' instead. which is oil resistant and heat proof and available from any motor spares suppliers. The carburettor also needs fitting. This is the slide type and is quite large. A cotter pin holding it in place. Finally a large foam air filter prevents debris from entering the engine.

Gear Box

The gear box is the MK3 version, with an alloy layshaft gear and a 10mm wide belt and a large 23mm high capacity diff with 12 balls. I am assured from Schumacher engineers that the diffs are set exactly right and should not slip at all. Fitted to the layshaft is a disc brake (made of glass fibre) and steel pads. These should provide adequate stopping power. Drive shafts now come ready assembled and only the diff joints need fastening in when the gear box halves are finally screwed together. Different spurs and pinion bells are available to give better acceleration or top end speed. Schumacher also offer in their 'Speed Secrets' a two speed gear box , which could put you in orbit.

Throttle and brake linkage (large shot of spring and fuel tank)



Engine and gear box mounted to the chassis.

brake rod did not seem to apply the brake very firmly. Only a track test will show whether this is in right or wrong. If I haven't enough brakes then replacing this with silicon tube should do the trick. The steering servo is bolted to the chassis mounts and the Receiver is stuck on top. Then I connected the kit servo saver to the steering linkage by the pre-bent wire links and locking clamp. The Receiver battery pack fits in the storage box on the rear bumper. Also a long spring is used to shut down the engine should the power or signal fade.

Chassis

Steel instead of alloy is used for the pressed chassis and is smartly finished in black. The

Body

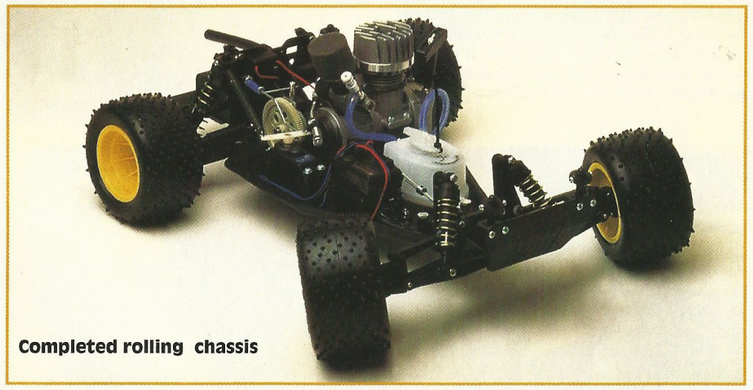
The body is Schumacher's own truck body which has been modified to allow the engine to protrude for cooling and also because if its sheer size. My bodyshell was sent to Roger Parkes for painting, so a suitable and very tasty job could be done. Normally Roger is a full size car painter, but he is happy to paint body shells at a very competitive price and can be contacted during working hours on (01909) 473607.

Front & Rear Suspension

The front and rear suspension are from the tried and tested Cougar / Club 10 and Nitro 10 range. Camber and steering links are of fixed lengths and as long as you get each link in the correct place you will have no problems with incorrect suspension angles. Shock absorbers are Schumacher's variable piston variety but to keep costs down they are now produced with plastic bodies. After building them as per the instructions they were nice and smooth and leak free. Filling them 30w silicon oil gives the best performance. These fasten to the wishbones and the glass fibre mounts. The ride height of the truck was set with the wishbones level using the supplied spacers. There is enough suspension travel to soak-up the biggest jumps and bumps you can find. The large truck wheels are fitted with Schumacher blue mini spike tyres.

Radio Installation

The throttle servo is installed first. This has the throttle/brake linkage attached to it. In the instructions it shows the linkage on the carb spaced with three white spacer washers. I found at this setting it just fouled on the top of the gear box when the throttle was applied. I removed one of the washers and cut down the bolt to clear the gear box. Next is to set-up the disc brake. Once assembled the spring on the fuel tank is of the quick fill design and comes with spare seals for the lid, and is assembled from two halves sealed by an 'o' ring. It has an internal filter and a sprung lid which give a nicely finished fuel tank. The diagram in the instructions shows the fuel pipe under the tank to stop fuel entering if the car rolls. I ran mine under the pull-start to keep the pipe shorter and making it look neater. Next you need to fit the exhaust pipe to the silencer, this exits out the back of the body. The final part is the body posts and the big front bumper which are both fully adjustable. With the large truck wheel and tyres fitted this give you a really smart rolling chassis.



Completed rolling chassis

Starting Time

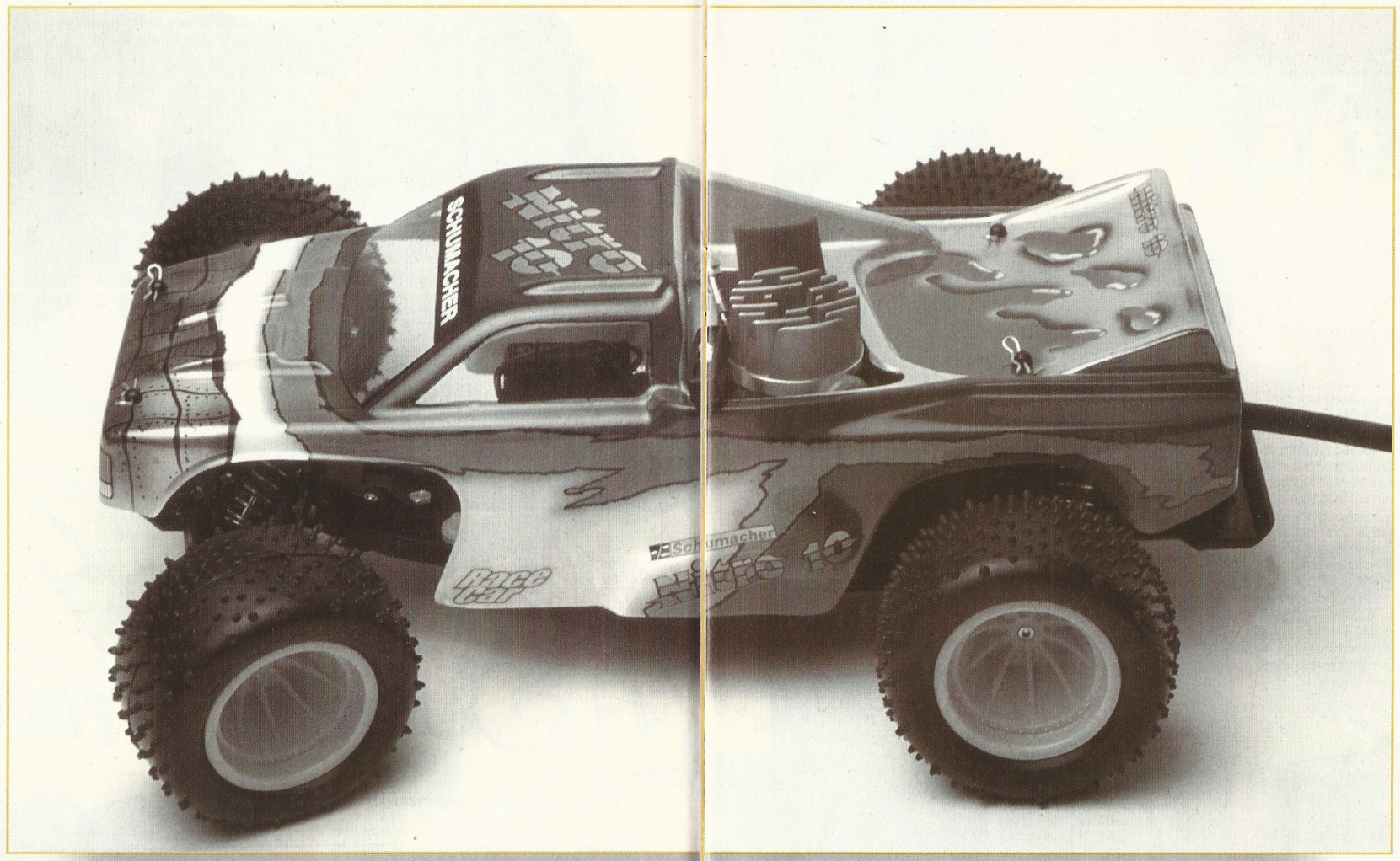
There is a comprehensive guide to setting up and keeping the engine performing properly, but no guide to an initial starting point. I rang Schumacher for information, who told me for the idle mixture setting, wind the screw full in and then out 1.1/2 turns and for the high speed

mixture setting wind the screw full in and then 2 turns out. As soon as possible these details will be included in the manual. You also need to soak the air filter in either nitro fuel or special air filter oil to help it perform correctly. The fuel system was primed as per instructions, the glow lead was connected and the pull-start pulled. I was quite surprised at the effort needed to pull the starter due to the compression of the engine. Nothing happened and then suddenly after a few pulls the engine burst into life. I must admit to being shocked and amazed, this being my first IC . Being not quite sure what to expect. I lightly revved the engine, put the car on the floor and moved off. Good advice to drivers new to IC engines is that the more time you spend on running in your engine the better performing and longer lasting unit you will achieve. Schumacher's advice for running in is a rich setting for 2 or 3 tanks at half throttle and Leo (the engine manufacturer) advise 2 tanks at 1/4 throttle also on a rich mixture. Believe me it is hard not to give in to temptation and give it full throttle but remember this will only damage your unit. I also allowed the engine to cool between each refill.

Now For Some Fun

I took the truck to my local park for testing and was amazed at its speed. It is the fastest Radio Controlled Car I have ever driven, very easily it will out pace most Off-Road Electric buggies. From a standing start it has very good acceleration and its top speed is awesome. If you need to stop quick just hit the brakes which are nice and proportional. I did replace the brake spring with some fuel tube which made the brakes sharper and stronger, although on low grip surfaces the kit spring would give better braking and would prevent the rearwheels from locking-up.

By now I had set the engine to run at peak performance by using the guide in the manual which is very helpful. The final settings I used were low speed mixture with the adjusting screw 1mm in from the carburettor casting. The high speed mixture 1 1/4 turns out from full in. Over the jumps and bumps it handled very well with the suspension working to its fullest. It cornered well on grass and did not roll. It just went into a controllable power slide. Brilliant!



Summary

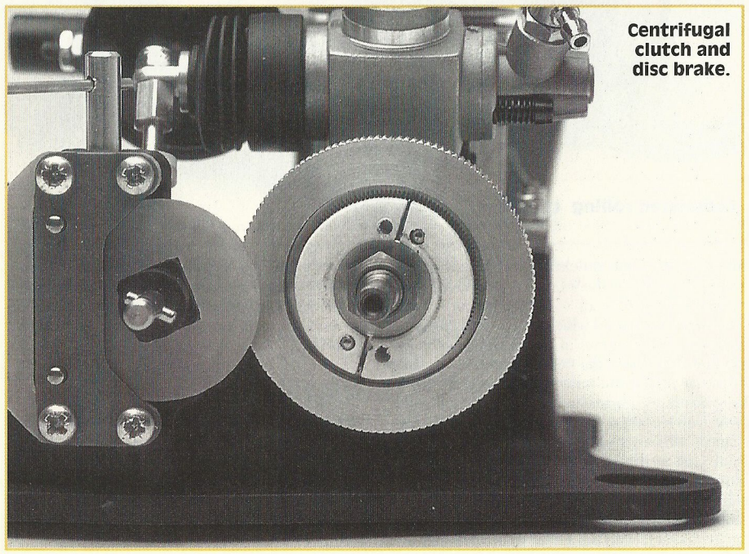
The only problem I had was there was a lot of fuel leaking from the exhaust muffler to the head (where I had used the gasket seal) when the truck was running. I soon cured this by cutting a gasket from some gasket paper (can be obtained by asking at your local motor garage). Now I get no leaks at all from this area. As the engine is now run in, after priming the engine it starts first time and maintains a steady tick-over showing that Schumacher were right to go for a larger engine which is easier to set up and less stressed than a smaller unit.

All you need other than the kit is : 1- A two channel radio system with a receiver power supply. 2- A power supply for the glow-plug (Schumacher produce one which runs off a 7.2volt Nicad pack. This will supply the glow-plug for approximately 6 hours continuous use.) 3- Fuel - this should be synthetic based and recommended 10% Nitro.

As I am used to driving electric cars, this was something different, this was FUN. You don't need to wait for batteries to charge and you can run for about 10 minutes at a time and then if still haven't had enough you just refuel and carry on. The speed was ballistic and the handling dynamic. The overall effect was exciting and very addictive and should be tried by all R.C Car drivers at some time.

Many thanks to Photron of Gainsborough (01427) 616314 for the photographs.

Compare the size of the MK3 diff.



Centrifugal clutch and disc brake.

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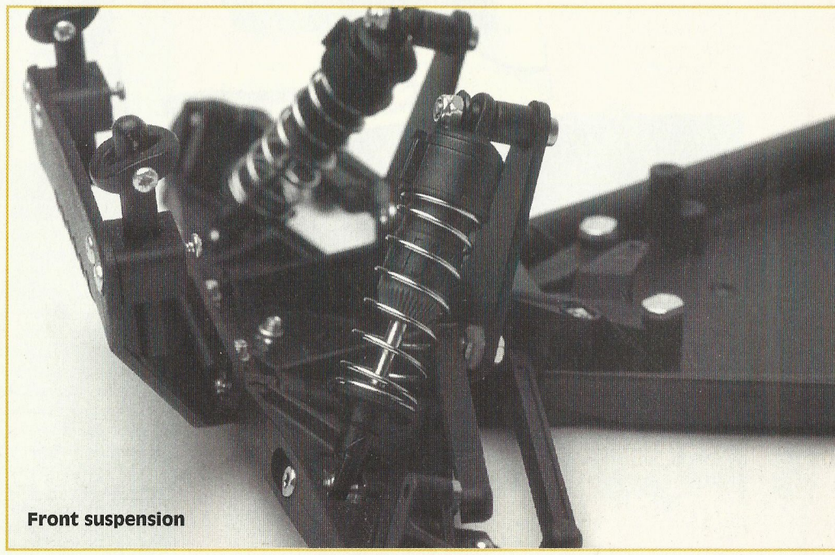

Front suspension