

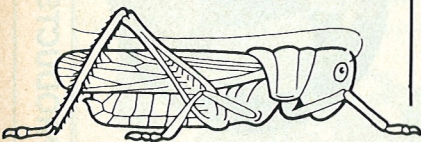


**Where do
you start?
Tamiya have
the answer**

Over the last ten or twelve years Tamiya have produced an amazing number of radio controlled Off-Road car kits. Some have been more popular than others whilst just a few have failed to ignite even a passing interest.

The top prize for longest serving member of the Tamiya family goes easily to the 'Grasshopper' which was first introduced in 1981. Since its launch the original 'Grasshopper' has gone on to become the most popular Tamiya car ever in terms of overall sales.

The reasons for its success are simple. Firstly it is easy to build for even the most inexperienced of first time buyers. Second; it is phenomenally reliable and



tough, as literally millions of owners have found. Third and last; the 'Grasshopper' is the most cost effective way of getting into the R/C car racing hobby yet devised.

This last point is the most relevant because model shop owners all over the world have found the 'Grasshopper' to be the answer to that eternal question from the other side of the counter.

"I don't know anything about radio control cars - what do you recommend?"

At this point the model shop owner will probably take a deep breath, gesture vaguely at the shelves groaning with Hi-tech, Hi-cost Turbo Nutter buggies and say, "Well I could sell you one of those but here's what you really want!" and there it is on the counter, the trusty 'Grasshopper' ready to provide endless hours of entertainment.

At one point the 'Grasshopper' and its partner the 'Hornet' looked as if they would be phased out in favour of something more modern. Thankfully this has not happened despite Tamiya's recent involvement in the world of competition Off-Road racing with the 'Avante.' Tamiya obviously recognise



the need to stay in touch with the grass roots (ouch - sorry) of the hobby to maintain an involvement right through the range.

The theory goes that after

you have bought your first car and had endless hours of fun with it then you might want to get more involved with a faster, more complex example. This is

undoubtedly true as the amazing growth of the Tamiya company shows over the last 20 years.

However, we are getting off the point a bit.

Despite the success of the 'Grasshopper' the original car was beginning to show its years. Just as full size car manufacturers revamp the image of their

cars to stay in touch with current fashion so have Tamiya.

Now along with the new Vauxhall 'Cavalier' we have the 'Grasshopper II.'

In this case the changes are largely to strengthen and update the looks of the car rather than any performance improvements. In a way it is a good thing since the original benefits of the 'Grasshopper' remain - reliable enjoyment at a good price.

The changes

The two major changes centre around the two largest components, the bodyshell and the chassis.

GRASSHOPPER II

Dealing with the chassis first it's difficult at first to see just what the changes are. However if you put an old example next to the new home, you can instantly see the difference. The new chassis is more rounded whereas the old had sharper edges and square corners. Quite a few of the areas which were prone to weakness on the old car have now been beefed up either with thicker styrene resin material or strengthening ribs.

One of the most obvious areas is around the front suspension which was a problem on the old car because it invariably took the brunt of any impact. This either led to the plastic becoming fatigued or cracked which in turn meant a visit to the model shop for a replacement.

The amount of plastic around the front suspension pivots has been increased and strengthening braces and ribs appear between the shock towers. The shock towers in particular were always an area for concern so it is good that *Tamiya* have paid special attention here.

At the rear of the chassis where the gearbox assembly mounts, the same process of providing more strength is followed. On the old car a really hefty wack into the rear wheels could cause the whole gearbox to

come adrift. To be quite honest no matter how strong a car is a really bad crash is bound to cause some damage so it is unfair to blame it all on the car. Nevertheless the 'Grasshopper II' chassis is significantly stronger in this area so the risk of serious harm is less.

Because the 'Grasshopper II' chassis is an all-in-one bathtub type, the problem is that if one part of it breaks then the whole unit must be replaced. At even the modest cost of £4.20 this is an expense you can do without so any possibility of the chassis being tougher has got to be good.

There is one thing that bothers me however and that is the rear body mounts. These are moulded in parts of the chassis which means that if they brake off (which is highly likely) then the only way of replacing them is to buy a new chassis. Of course an alternative way of mounting the body can be found but this should not be necessary and I feel it would have been better if the mounts were fitted separately.

New aerodynamics

The bodyshell is the most striking difference between the new car and the old by

virtue of its smoother more flowing lines. This is in keeping with the current vogue in model car production as well as full size.

The effect is to produce a more aerodynamic shape which despite the fact that it makes not a slightest bit of difference to the performance looks a heck of a lot nicer. The body also sits very close to the chassis which means it won't flap about when the car is in motion and it will stop quite a lot of muck and dirt from collecting in the chassis. At the rear of the body where the aerofoil begins to stretch out there is a flow-through section which allows air to be directed onto the speed controller resistors for cooling.

Wheels and tyres

These are also different and a lot better for it. The wheels are now a one-piece moulding instead of the old three part bolt together type which I always found a pain to assemble. Also they are the same size and fixing as those used on the 'Striker' and the 'Falcon' which will make things easier when buying spares. Because they are just one piece of plastic these new wheels should be lighter too.

The tyres are the common two-wheel drive

combination of ribbed fronts and spiked rears and are quite difficult to get on unless you follow the instructions. So long as they are seated properly all the way round the rim there is little chance of them coming off.

General construction

As I said earlier the 'Grasshopper's' reputation was based just as much on its ease of construction than anything else. So you should have no trouble putting it together at all.

However just in case you are not sure here's a few tips.

Don't get all the bits mixed up particularly the screws, nuts and bolts etc. It's best to put each bag of parts into a plastic pot or something to keep them separate and safe during the building.

Before you install the radio equipment put some batteries into it, switch it on and see how it works. This will help when you come to install it into the car which just happens to be one of the first phases of the construction.

All *Tamiya* cars are based around *Acoms* radio gear but other makes will fit. If you are buying a new set of radio try and get a system which incorporates a

New look for the grasshopper includes new decal set as well as new smoother lines.

battery eliminator circuit (BEC) because this allows the radio gear in the car to be run off the main drive battery. Usually the radio receiver requires a separate battery pack which is quite heavy. Getting rid of it means more performance and less expense.

At the rear where the gearbox, motor and rear axle assembly mounts to the chassis extra care must be taken with the two hairclip springs which act on the gearbox pivot. Make sure they are fitted properly and won't ping out when you come to bring the two parts together. Put a big smear of grease along the length of the pivot pin and at either end.

As far as the gearbox is concerned the only real area of attention is to apply grease to all the part shown in the instructions. The gearbox in the 'Grasshopper' was probably the most reliable *Tamiya* ever made so it is no surprise to see the same unit in the 'Grasshopper II.' Generally speaking once assembled it just goes on and on forever requiring very little maintenance apart from a re-grease every now and then.

Tune up parts

In standard form this new 'Grasshopper' will perform pretty much the same as the old car simply because it has the same type of coil spring shocks, plastic bearings for the moving parts and a 380 size motor.

In order to improve the new version of the car over the old *Tamiya* have come up with some optional tune up parts. Obviously these parts can be fitted just as effectively to the original 'Grasshopper' as well.

Ball races;

The most important area to fit ballraces is the gearbox and rear axle to make sure all the parts are moving as efficiently as possible particularly if you intend fitting a more powerful motor. In all you need five of the larger size ball races (1150 size) in the gearbox plus one of the smaller (850) type.

Unfortunately it seems that you can only buy *Tamiya* ballraces in packs of four (1150) and two (850) which means you haven't got enough of one size and one too many of the other.

You can get away with just fitting the four ballraces to the rear axle and not worry about the others. Really though it would make more sense if *Tamiya* produced a pack of the right number.

CVA front and rear shock sets;

The shocks supplied in the kit are just simple coil spring types and provide no real amount of damping at all. Springs on their own will cause the car to bounce around over rough ground. Add some damping however and the suspension movement will become much smoother and make the car handle much better over the bumps.

The CVA shocks are oil-filled and provide damping by the action of a piston moving through the damper barrel. The piston has holes in it to allow the oil to pass through and the number and size of these holes determines the level of damping achieved.

The CVA shocks will fit onto the 'Grasshopper II's' chassis with no modifications required and are easy to put together to transform the handling of the car.

540 size motor;

The motor supplied in the kit is known as 380 size. Larger, more powerful motors exist and you will probably want to fit one once you have got used to the speed of the standard unit.

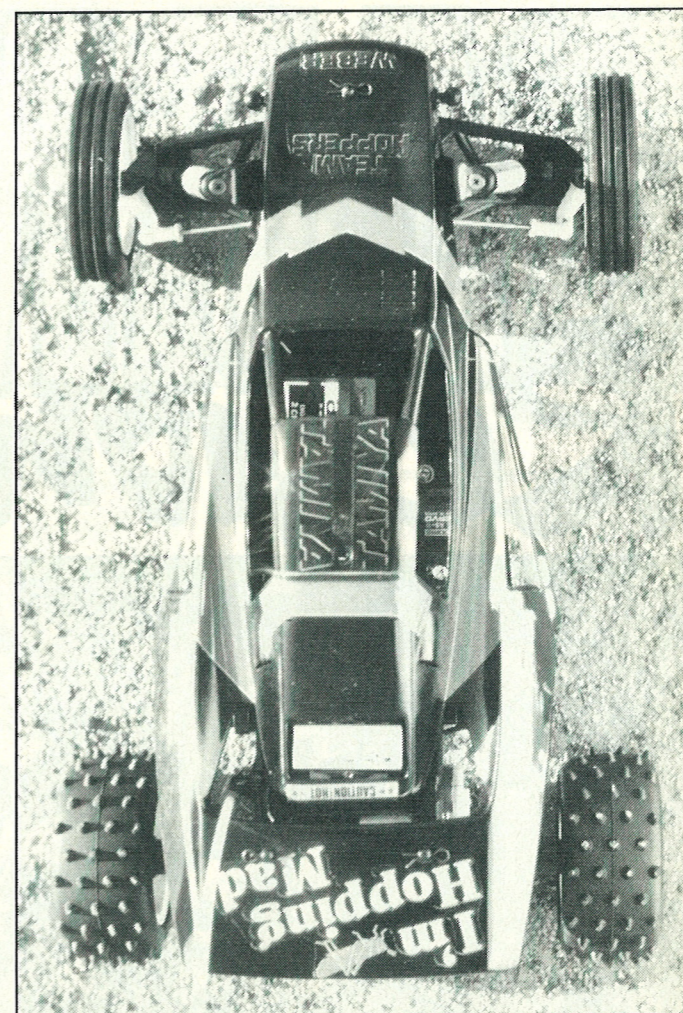
Fitting a larger motor is extremely simple and fits in exactly the same place as the 380 size but without the motor mounting plate. The instructions show how clearly.

You do need to change the motor pinion as well to an 18 tooth type otherwise the gears will not mesh.

Wheels and tyres

No matter where you are running the car sooner or later the tyres are going to wear out. Hard surfaces in particular will soon have you paying a visit to the local model shop for spares. While you are there, why not consider a different tread pattern to the standard kit types.

The pin spiked tyres supplied with the car are a good choice for grass and dirt surfaces but will wear out very quickly on harder ground such as concrete or tarmac. *Tamiya* have an



oval block tread pattern tyre which will probably give better grip and longer life.

For the front the pin spike tyres are ideal to give you more steering particularly on dirt and grass tracks. All the tyres are supplied with wheels so you can change them easily according to the type of track.

Track test

Fitted with the new shocks the 'Grasshopper II' handles much better than the original car over rough ground. The old 'Grasshopper' used to just bounce off even the smallest of bumps and was generally too twitchy to drive smoothly.

The CVA shocks go a long way to overcoming this and produces a car that is much easier to drive and quicker because the suspension actually keeps the car in contact with the ground and not in the air.

The '380' size motor gives enough power to make the 'Grasshopper II' interesting but for more speed and excitement the 540 motor is a must. The gearbox is quite able to handle the

Simple layout, simple construction and cheap spares contribute to Tamiya's leading starter package.

extra power although we haven't actually tried it with a full blown modified motor yet.

With the 540 fitted the 'Grasshopper II' becomes much more tail happy and can be spun out easily on loose surfaces. The trick is to apply the throttle gently to begin with then speed up as the car gets going. The rear suspension even fitted with the CVA shocks is still pretty basic which means there is a limit to the amount of power that can be transmitted through the rear wheels to the ground in one go.

Against the old 'Grasshopper' the 1989 version looks better and goes better when fitted with the optional tune up parts. The other bit of good news is that you can fit them to the old car as well.

Manufacturer: *Tamiya*, Japan.

UK Distributor: Richard Kohnstam Ltd.

Price: £55.00 (approx.).

