



THUNDER TIGER 4WDS



John Varley looks at the latent 1/10 4WD off roader from Thunder Tiger.

Thunder Tiger of the Far East, have produced their own 1/10th scale off road car kit, to add to the plethora of kits currently available to the public.

Those in the know, will take a quick look at this car, followed by a lengthier study, and could easily be fooled into thinking that they have seen this one before.

With the exception of four-wheel steering attachments, a rear mounted motor, and subtle changes in the body shape, it does indeed bear very close resemblances to another Far East manufacturer, whose name escapes me at the moment.

Whatever the similarities, Thunder Tiger obviously believe there is a market for the product, otherwise they wouldn't undertake the expense of tooling up for a project like this.

The kit comes neatly packaged, with the outer box well designed to give the highest impact when displayed. Internally, all sections of the kit are retained in separate packets, best left sealed until you need to use

each part, and the entire build is displayed in a well drawn pictorial manual, with each section shown in an exploded view.

If you are an absolute beginner to the hobby, never be put off by what might appear to be the intricacy's of building a car. Most assemblies are relatively simple and need very few tools.

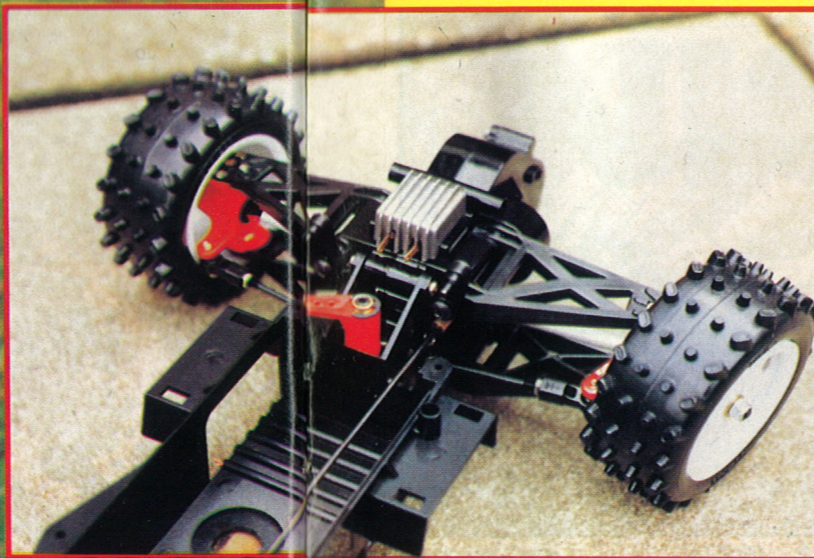
Let us break down each section, and see how simple this kit can be to build.

The Tiger 4WDS is designed to run on the roughest of terrains, with the minimum of effort to drive, hence the four wheel drive and four wheel steering.

Chassis and Gearbox

The chassis is designed as a box monocoque, the main member moulds as a V-shaped channel, to take all radio gear, with a moulded top plate retained with four self tapping screws. Once in place, the top plate gives a very strong box section, onto which is bolted the front and rear gear box housing.

The gearboxes are identical at each end, with the exception of the spur gear in the rear gearbox, which takes the direct drive from the motor, and the intermediary idler



in the rear drive train. Both gearboxes have nylon bevel differentials and spur gears, with nylon bevel gears for the output drive to the central prop shaft. Take extra care when assembling such parts. Apply lubrication where the instructions show, replace solid bushes with ballraces for faster running with less friction, and assemble thrust races on the output drives carefully.

On top of the gearbox housing is mounted the resistors in their own alloy heatsink housing, for the kit speed controller, if used. At this point, with the central prop shaft in place, the gearboxes have only four self tapping screws to be used, in order for them to be fitted to each end of the monocoque.

Suspension and Steering

The suspension is of of equal length wishbone all round, with virtually identical top and bottom wishbones at both front and rear. The pivots for all suspension points



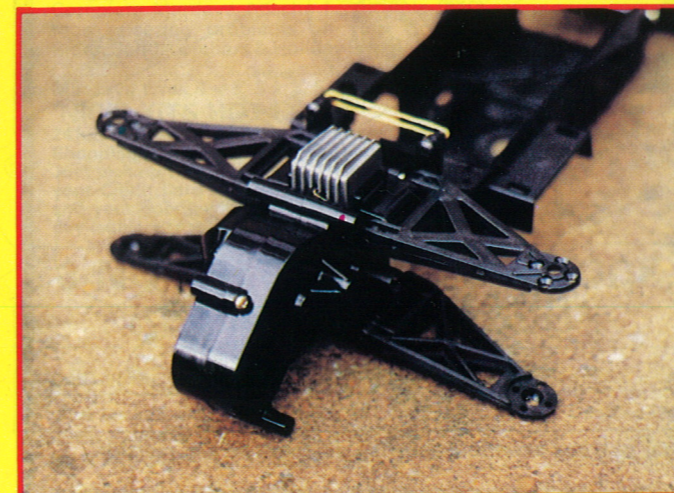
Knobby tyres are supplied for all four wheels. The steering arm can also be seen, this is identical at front and rear.

The rear gearbox assembly. The resistors are carried in the alloy heatsink housing above left.



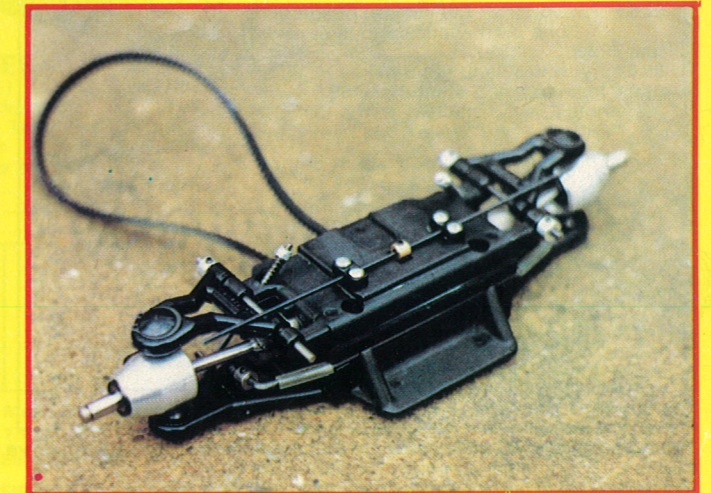
Coil over oil filled mono shock absorbers are used at both ends, giving adequate suspension movement.

Identical gearboxes are used at the front and rear with nylon differentials and spur gears. Also common to both ends are the equal length suspension arms.



A sturdy roll-cage neatly covers the resistor, speed controller and driver figure, the rest of the car is covered with a moulded red lexan body and aerofoil.

The four wheel drive toothed belt is shown here on the front axle. Hardened and ground stub axles run in bronze bushings in each steering arm.



are simple Phillips drive pins, with short threads beneath the head to self tap into each wishbone.

The upper wishbone at the rear, and the lower wishbone at the front, incorporate a moulded extension that takes the pivot/location point for the monoshock system, but more of that later in the article.

With the four wheel drive system incorporated in this car, the steering arms have been designed as one part, to suit either the front or rear assembly, always a useful thought when considering replacing worn or damaged parts.

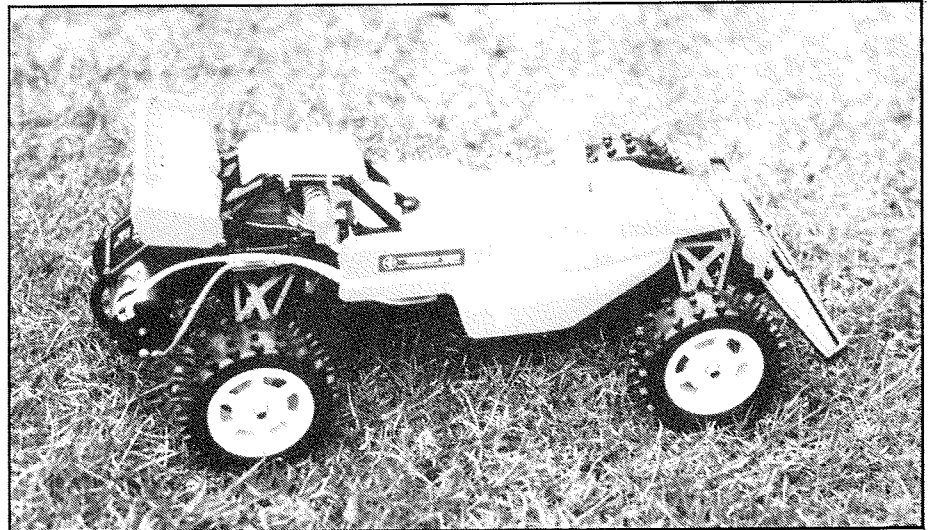
The king pin pivot joints are robust affairs made from brass, and screw directly into the steering arms. A clamping collar is retained beneath each pivot and retained in place on each wishbone with four countersunk self tapping screws. Take care with the tension of these screws, always leave the pivot and wishbone to move freely.

The hardened and ground stub axles run in bronze bushings in each steering arm, and coupled with these and the similar axles in each gearbox, are fabricated drive shafts. The drive shafts are again identical for each corner of the car, and incorporate ball and pin drive ends press fitted into an alloy centre section for lightness.

The steering is effected through identical servo savers at the front and rear, with robust rose jointed track rods. These track rods with right and left hand threading for easy length adjustment, would appear to be taken from one of the Thunder Tiger's 1/8th kit cars. Take note, where as the front steering would be set to give maximum throw, the rear steering only requires a minimum of movement to assist in the tighter cornering, without the tendency of too much rear and steering and as such the "the tail wagging the dog" situation.

Suspension movement is contained via coil over oil filled mono shock absorbers each end. Oil is supplied with the kit to fill both dampers, which feature a simple hand adjusted cam, giving three spring tensions.

The piston has four ports and dependant on what type of terrain you are driving on, thin nylon valves are supplied to fit on top of, below, or either side of the piston, to give variations in damping effect. A spring loaded contra-piston is installed into the top of the cylinder body to finalise the assembly of the shock absorbers.



Radio Installation and Final Assembly

With box monocoque style chassis, this greatly aids the installation of radio gear away from the elements. In this instance we are installing the latest steering wheel radio from Aristo-Craft, the Challenger 2P. Made in Korea, the Challenger 2P comes as a low priced, pistol grip, lightweight transmitter. It incorporates a steering rate adjuster, steering wheel operation, neutral adjustment and servo reversing switches. The two channel receiver is reasonably lightweight and of narrow band design to resist adjacent channel interference. The servos are watertight and dustproof, with a 90° inclusive angle of movement with a high enough torque and speed to suit any first time buyer.

Operating linkage is supplied in the kit to fit your radio up to the front and rear linkage for steering, and the mechanical kit speed controller. This controller comes with all hardware and wiring harnesses to fit straight up with your motor, batteries and resistors. It is of the three speed printed circuit design, and is adequate for any beginner, because of its simple, cheap design, and easy installation.

The kit is finished with the addition of a nylon roll cage, alloy roof, full width front bumper and underbody skid pan.

Knobbly thermoplastic tyres are supplied

and stretched onto one piece nylon lightweight hubs. There is a correct way of fitting the tyres, so look for the directional arrow on the tyre sidewall.

Cut out the lexan moulded red body and aerofoil, attach the decals and you have the finished kit.

Conclusions

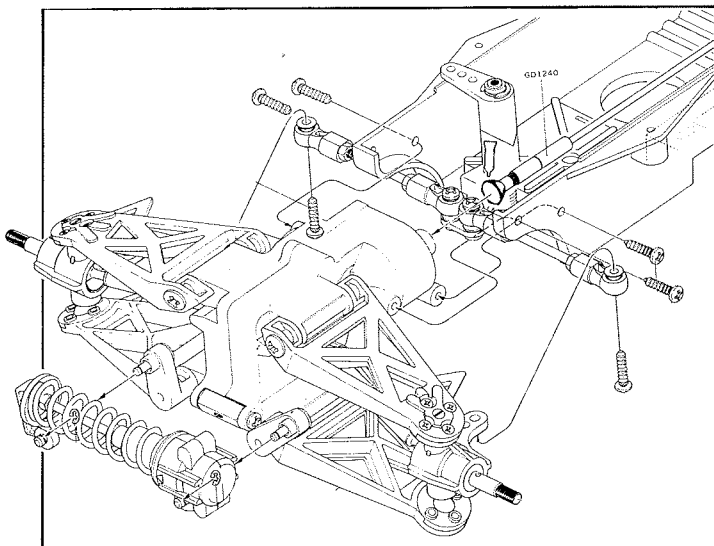
The Thunder Tiger 4WDS is not a pure bred racing machine, it will however be worth reviewing by any first time buyer. The parts in the assembly are kept to a minimum, and easy to build, and at the same time need no finishing off when assembling.

The suspension movement is a little restricted by what I feel is a far too strong coil springing. Best results would be found by possibly keeping the tension at the softest setting.

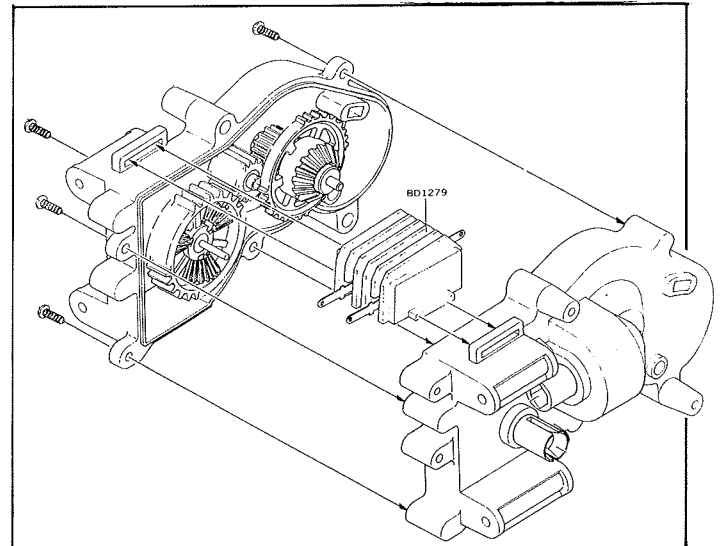
The Mabuchi RS540 motor is supplied with two pinions to suit various driving conditions, and gives the car more than ample speed.

The four wheel drive gives easy control, especially in loose conditions, and the four-wheel steering allows very responsive cornering, which requires a driving style of its own, compared to the front wheel steering only.

Priced at £89.99. Imported by Amerang Ltd., Commerce Way, Lancing, West Sussex BN15 8TE.



Front end of chassis connection to suspension. Also four wheel drive shaft.



Rear gearbox assembly showing differentials and resistor.