INTEGRA

Kyosho Land Jump 4WD 1/8 Scale Off Road Buggy

by J. B. Varley

The Japanese, and none more so than Kyosho, have had a preoccupation recently with four wheel drive models.

The idea will most likely prove to be uncompetitive on 1/12 racing cars, because of weight and added friction, while it is unlikely to be the eventual path to follow on 1/8 tarmac racing, but in the none too gentle art of off road racing the indications are already there, four wheel drive is better than two.

The latest Kyosho kit to follow the 4 x 4 format is the Integra, an updated version of the Land Jump 4WD.

I stand to be corrected, but it is highly unlikely that Kyosho developed this model exclusively for competition use, but once the car is finished, I think it would be difficult for anyone not to start feeling competitive.

My enthusiasm however has allowed me to digress a little, talking about the finished article before a mention of what makes it tick.

The kit comes in a very neat package, with the box lid carrying a multitude of colourful photographs of the finished car. Inside, parts are neatly packaged and numbered and accompanied by a comprehensive instruction booklet with exploded views of ALL sections of the assembly.

Starting with the chassis, this is a simple ladder type, based on two main longitudinal members from 10mm square duralumin bar. These members are pre-formed and drilled at each end, at the front for bumper support and location of suspension mountings and at the rear to safeguard damage from any rear end shunt and to give support and protection to the moulded nylon fuel tank.

Transverse chassis members are few and simple. One 8mm alloy rod is mounted at the front, clamped between the suspension support blocks, and two more at the rear where the rails are formed to take the fuel cell. Maximum strength and support is attained when the engine/layshaft and rear suspension/brake mountings are clamped across the main chassis members.

With the exception of pivot pins, drive shaft assemblies, gears etc. almost every component is formed from cast aluminium. Without exception, the quality of these parts is of the highest order, and did not require any extra finishing or deburring on my part, during any aspect of the assembly work.

Let's look therefore at this juncture at what the kit offers the builder, in the way of value for money.

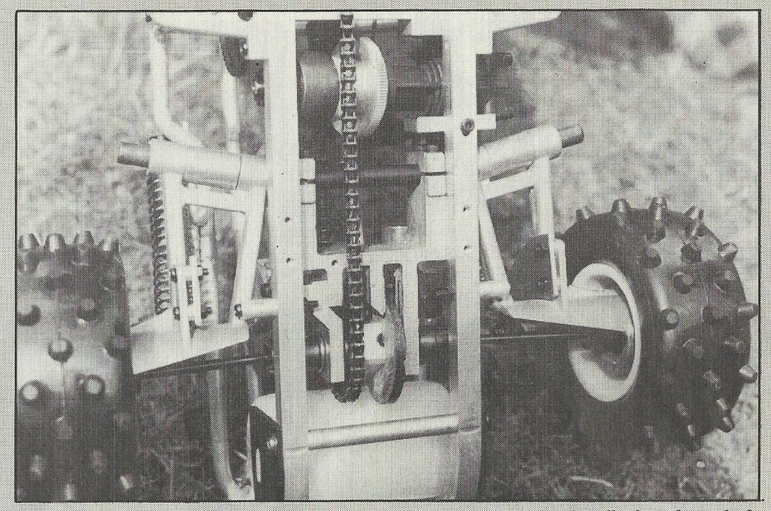
Although four wheel drive, the Integra kit employs only one differential. This is carried in the front wheel drive assembly and comes factory assembled. Very compact in design, and to the less engineering orientated parties, pre-assembly is an added advantage.

The differential support brackets incorporate roller bearings for smooth running, and are attached to the front suspension support brackets. Two tubular steel transverse rods pass through this bracket and act as pivots for the trailing arm front suspension assembly.

The suspension arms are spaced by a pressed steel plate, clamped by nyloc nuts holding the king pin support pivots. M4 threaded hardened king pins are loctited into each steering arm, then bearings fitted for the hardened steel stub axles and drive shafts to be fitted. All the drive shafts are ball ended with hardened driving dogs.

Working back from the front suspension, the steering servo saver is carried on a steel bracket protruding from the left hand chassis member. Aft of this is the nylon moulded radio box, equipped with a rubber seal to keep out dust and water and rubber grommets are fitted to seal the box where the steering and throttle linkages exit. A threaded stud fits into the box lid, to clamp down the lexan moulded driver form supplied with the kit.

Behind the radio box, giving the car a mid-engined configuration, comes the engine mounting blocks. A diecast bracket incorporates the layshaft and chain tensioner. The layshaft, as with all rotating shafts, running in roller bearings.



Rear underside detail showing chain drive and disc brake on rear axle.

Behind the engine is a U-shaped diecast transverse member which supports the rear drive sprocket, disc brake and single trailing arm suspension arms. Across the front of this is a cranked suspension arm axle which can be adjusted to change the suspension geometry at the rear from positive to greatly accentuated negative camber.

A fibre disc brake with metal pads, actuating cam and all necessary linkages is provided.

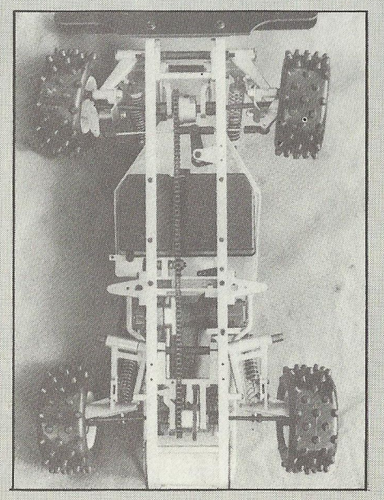
Located above the rear drive, on a single aluminium arm is a two-part diecast silencer box. This comes in two halves and allows the builder to change the direction of the exhaust outlet.

Positioned at the rear of the chassis is the moulded nylon fuel tank, incorporating outlet and pressure pipes installed in rubber grommets for good sealing and screw-on filler cap.

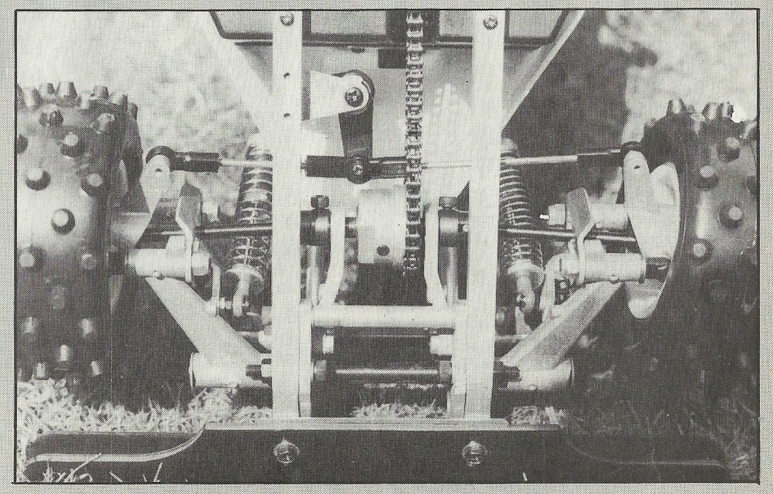
With everything in place, the welded aluminium roll cage 'body' is installed, this is easily achieved with the use of six M3 pozidrive screws and nyloc nuts. The suspension units can now be fitted and in this instance the coil over (oil filled) shockers came ready assembled. The coil springs are chrome plated and the shock absorber body is anodised red, thus giving an extra dimension to the car's outside appearance.

Semi-pneumatic knobbly tyres are firmly clamped in place with M6 semblies are used and each wheel is firmely clamped in place with M6 nyloc nuts on the stub axles.

General view of the underside with its strong alloy chassis rails. I think a thin lexan chassis pan would help protect the chain and would be simple to fit.



Front underside — note front axle differential unit.

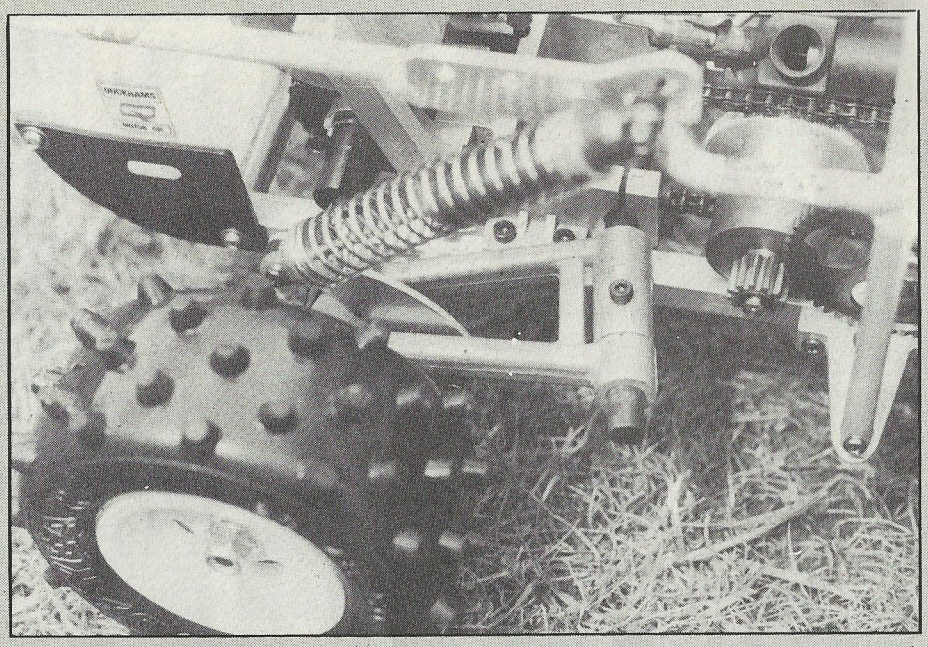


We chose to fit an HP20 engine with its own slide carburettor and Sanwa radio. We found in use that the HP20 engine, with its moderate power band, allowed even inexperienced i.c. drivers to handle the car quite effectively.

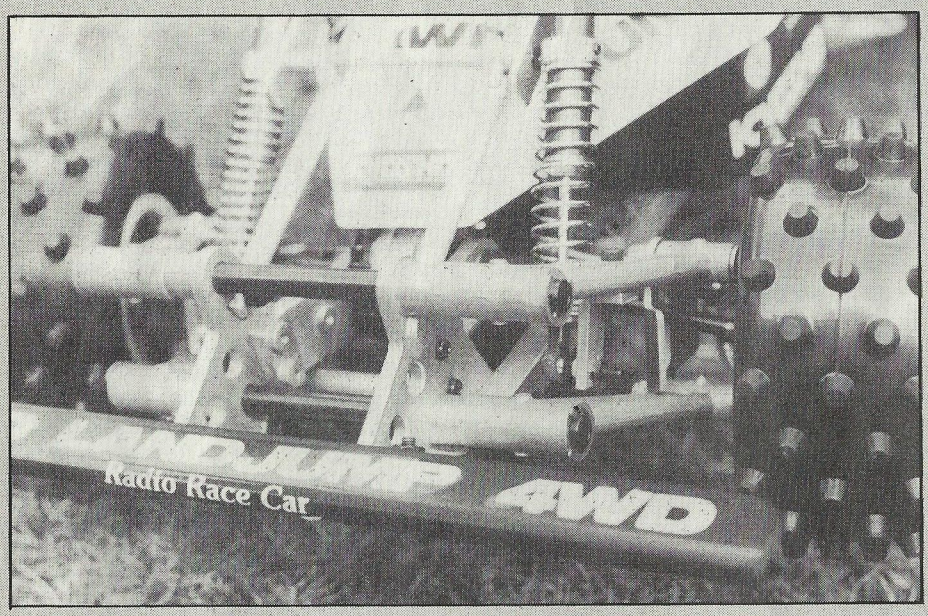
The four-wheel drive i.c. car is without doubt far more effective than any rear wheel drive off road car we have had through our hands.

We had initial doubts about the end to end chain drive, but with proper assembly and regular inspection, this gave no trouble at all in use. Careful attention should be made to correct tensioning of the chain, remembering the initial stretching that will take place.

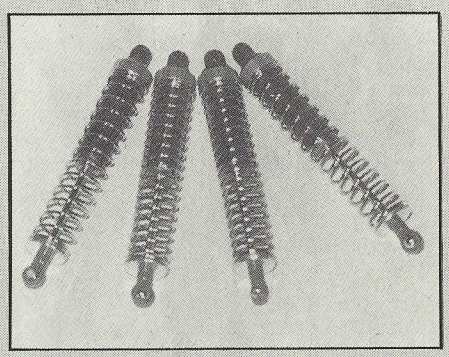
The four wheel drive enabled some pretty hairy power-on cornering, and the ability to pour on the power on loose surfaces without the car getting tail happy as with some rear-wheel drive cars.



All metal suspension arms, note adjustable 'ride height' shock absorber mounting holes. No, we haven't forgotten the air cleaner — it hadn't been fitted at this point. An air cleaner is essential on all I.C. motors in cars!



Sturdy front suspension.



Rear view shows the good protection afforded by the alloy cage. Note how well the fuel tank and silencer fit, both supplied in the kit.

The sizeable dampers were definitely not just for appearance's sake, really working well to keep the tyres on the ground over very rough ground, and when one really did overcook it, the strong roll cage saved everything from damage.

In all, the Integra presents a high level of quality in its individual parts. Building such a kit can be interesting and educational, with the end result more than justifying the effort put in.

Care must be taken to thread-lock all fixings, because believe me if you don't, then that screw will fall out sooner or later.

Engine installation is simple, and the mount is adjustable, allowing the use of pretty well all currently used power units.

To finalise then, immense pleasure to build, and even more to drive, obtainable from Ripmax stockists at £225.00. □