

SICCOM MAGNUM PROPULSION



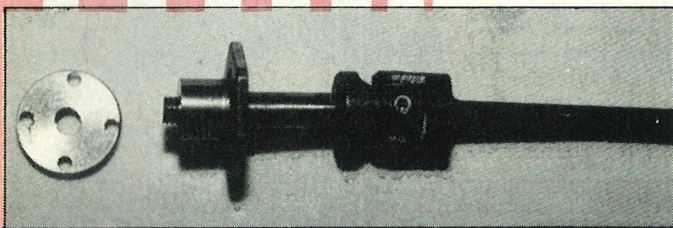
JOHN CHAMBERLAIN reviews this exciting new 2wd 1/8 off roader.

For any company to be successful and profitable it is essential for them to be able to react promptly to market trends, producing products the customer wants at prices they can afford. If a range of products can be marketed from a stock of common components, so much the better, resulting in smaller parts inventory, lower tooling costs for the manufacturer and lower stocking level for the retailer. A change in the French Model Car Federations rules for rallycross racing in 1987, saw the introduction of a new, separate championship racing class, rear wheel drive, joining the already established front wheel drive and four wheel drive classes. French manufacturer, Siccom reacted

swiftly to produce and market their Magnum Propulsion to provide their challenge for this new racing formula, the new car being based essentially on their internationally successful Magnum 4 x 4. The rear wheel drive class was designed to provide an exciting racing class in its own right, for those people who perhaps could not justify the cost of a full blown four wheel drive car. Additionally it was envisaged that new drivers would be attracted into the sport by the lower cost, yet with the new propulsion be, able to simply upgrade the chassis at a later date to full four wheel drive if the interest was there.

On opening the box, it was pleasing to find that all the major components were

blister packed onto large cardboard sheets, providing good presentation, that is so important to a new generation of model car buyers who have been nurtured on a diet of high quality Japanese model kits! The propulsion is in fact a 4 x 4 without the centre drive assembly and the front transmission parts, and so on inspection offers many of the same features. Excellent one-piece driveshafts incorporating outboard universal joints, long travel suspension with anti-dive front and anti-squat rear geometry, adjustable wheel camber all round, bevel gear rear differential, single disc rear brake and high strength alloy chassis and top plate. One continuing disappointment, is the absence of a really

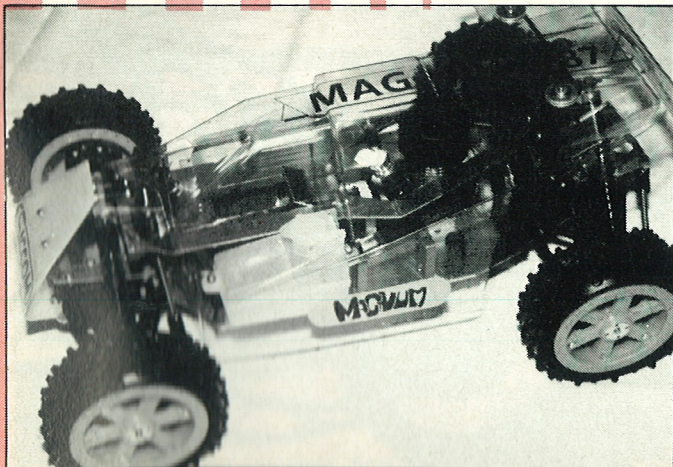
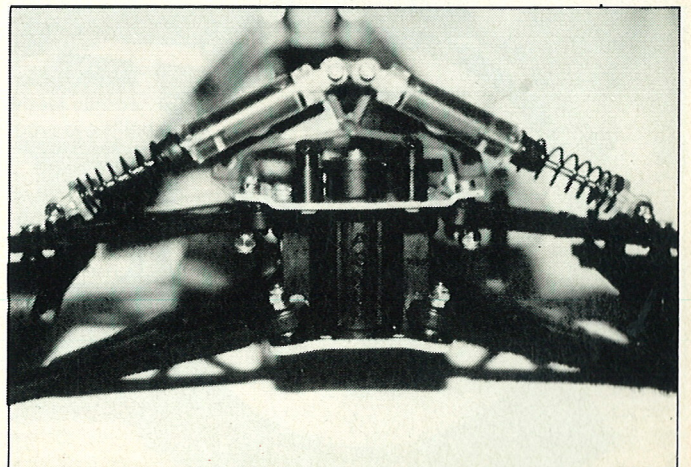
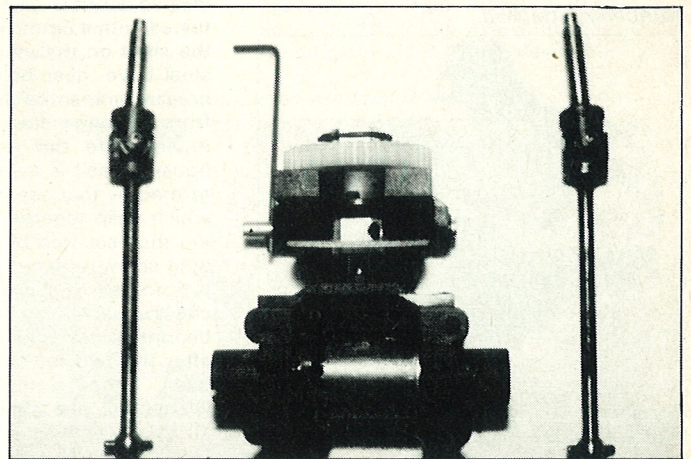


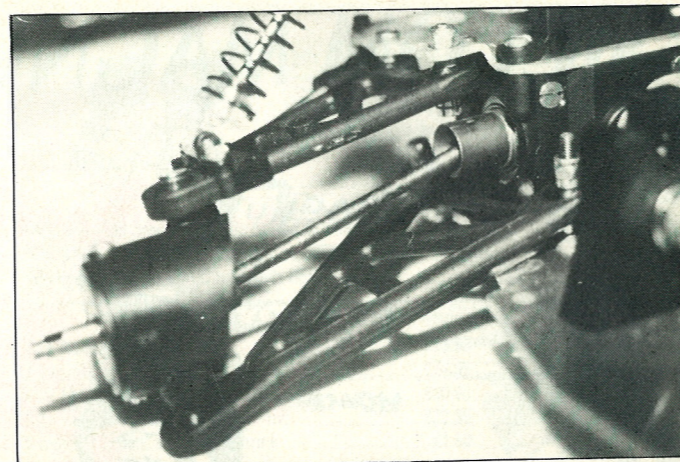
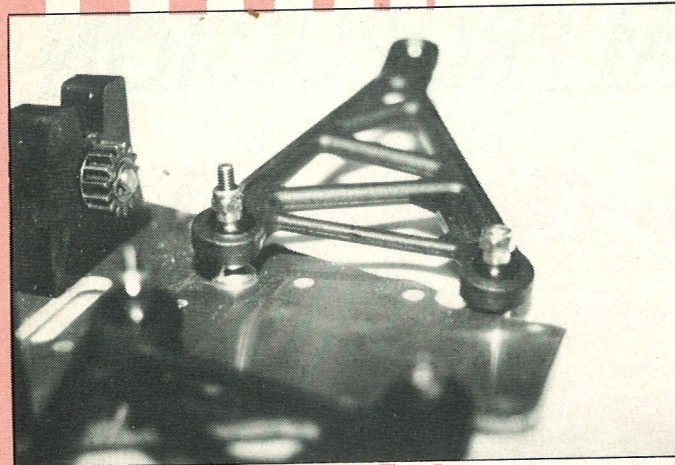
Above, drive shaft with hexagonal wheel drive and wheel 'nut'.

Top right, rear gearbox assembly, showing differential fitted, disc brake and plastic drive gear 'in situ', and one piece drive shafts alongside.

Bottom right, front suspension assembly.

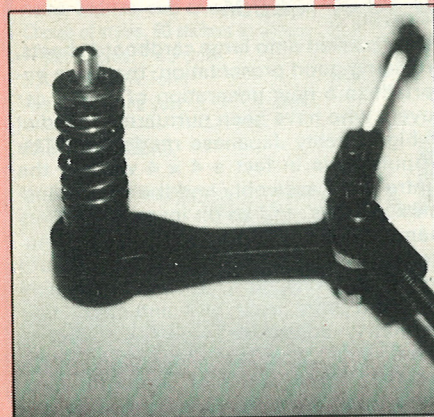
Below, complete car with body ready for painting.



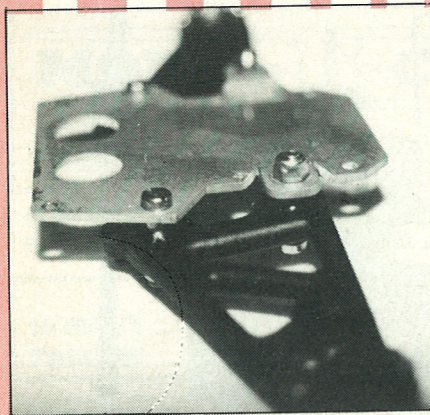


Above left, rear wish bones in place with appropriate spacers for anti-squat geometry. Above, completed rear wishbone, carrier and driveshaft assembly.

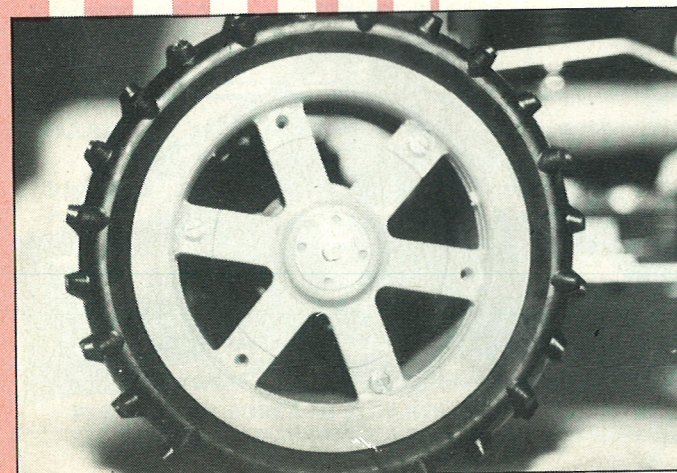
Below, servo saver and track rods.



Rear gearbox alloy top plate with wishbones attached.



Below, wheel and tyre assembly with unique wheel nut.

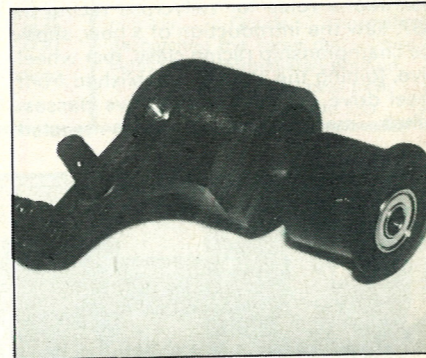


good, illustrated construction manual that would be much appreciated by the newcomer building his (or her!) first 1/8 scale car. The instructions have been improved by additional clarification written by our own Ralph Allum in England, but this one area is still not in the Japanese class. However, on with the good news and there is plenty of that, I am pleased to report.

To ease the building task for the beginner and more experienced constructor alike, the build up is suggested to be carried out on a sub-assembly basis. The rear gearbox and differential assembly is the heart of the machine and from experience with its four wheel drive companion, should provide totally reliable in operation. The differential is of the sun and planet bevel gear type, the robust pinion gears located on flats on the drive cups and retained with a 3mm set screw threaded into the shaft on the inner end. A lightweight, steel bevel gear bolted to the differential housing transmits drive to the differential from the large diameter steel pinion gear driving into the gearbox housing. The housing itself is a very compact assembly formed by four separate plastic mouldings which snap together on locating lugs and are then secured by countersunk self tapping screws. (See photo 1). This assembly is screwed to the substantial 3mm thick chassis plate along with the pinion support bearing block and disc brake assembly, after the two lower rear wishbones have been bolted in place (Photo 2) top wishbones are attached to the gearbox alloy top plate, and this assembly is

screwed to the top of the gearbox (photo 3), remembering to fit the rear plastic shock absorber mount first. The novel hub carrier assembly, incorporating the adjustable, concentric axle bearing holder, is then fitted between the wishbones, bolting through the plastic ball swivels, again remembering to locate the driveshaft assembly at the same time (photos 4, 5, 6, and 7). The long travel shock absorbers come

Below, hub carrier assembly with adjustable camber insert.

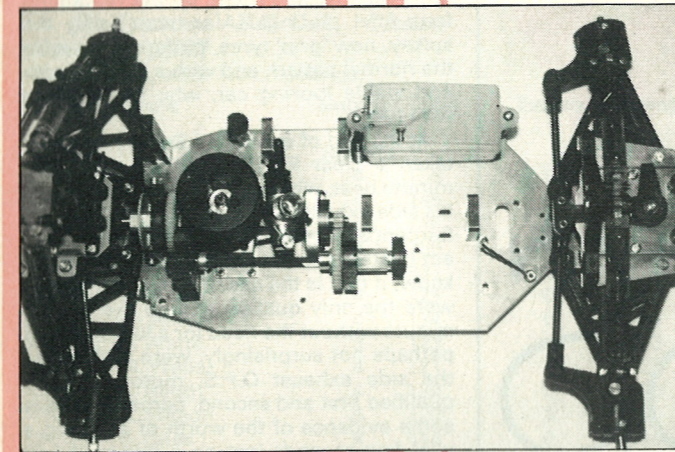
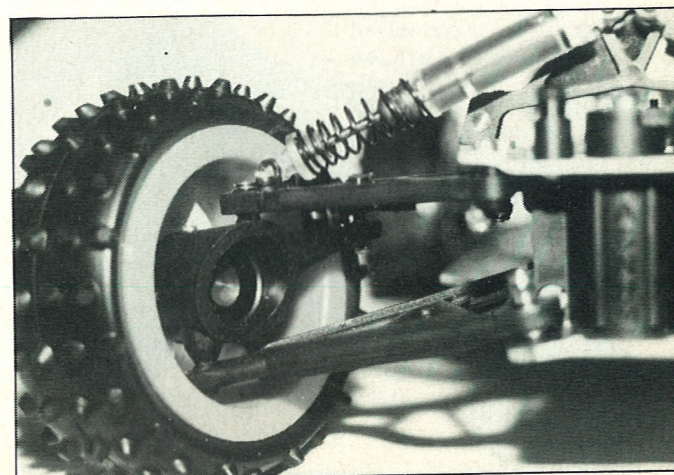


ready assembled and pre-filled with oil and are simply bolted in place.

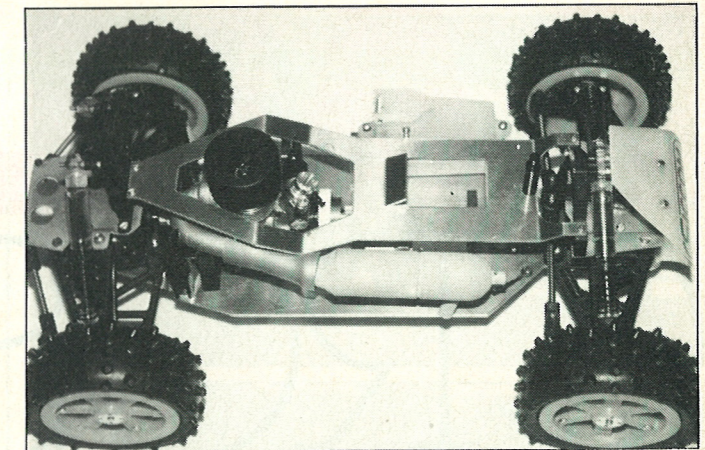
The centre drive assembly is now easily fitted and amply supported by three substantial bearing blocks. A suitable .21 car motor is then fitted to the pre-drilled and tapped engine blocks which are secured to the engine plate/chassis plate by two allen cap screws

At the front of the chassis, a similar

Below, front suspension and hub carrier assembly.



Completed chassis minus top plate.

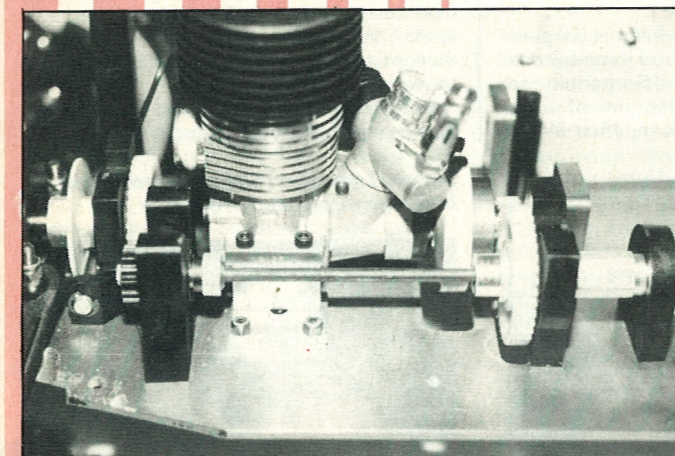


Completed chassis.

assembly to the rear gearbox is constructed with identical plastic mouldings, but here we have to fit a neat steering servo saver but of course minus the transmission components. The completed assembly should look as per the photos, the track rods are then fitted along with the fuel tank, plastic servo mounting posts and wing mounts.

At this point the radio, servos and exhaust system are fitted prior to attaching the chassis top plate. Whilst the expansion type silencer is supplied in the kit, a suitable selection of throttle override mouldings, piano wire and springs, are required to form the appropriate linkages for throttle and brake activation. P.B. Products of Havant produce an excellent pack which should make the job much easier and is to be highly recommended! The wheels are strong plastic mouldings in two halves and traction tyres as supplied in the kit are easily fitted to the hubs, prior to screwing

Centre drive assembly with motor 'in situ'.



the parts together. A neat feature of all Sicom wheel hubs is the built in sidewall flange which supports the tyre and eliminates the problem of pulling tyres from the rim during hard cornering. The completed wheel assembly is attached to the twin ball raced stub axles by a unique flush 'nut'. Finally the lexan body not supplied in the kit, but recommended as a straight fit is trimmed to size and fitted onto the body post at the front and held by the supplied wing assembly at the rear.

Setting The Car Up

With the construction complete, final set-

ting up of the suspension and linkages is required before running the propulsion for the first time. At full ride height the rear track control rods are adjusted until the rear wheels are parallel to the chassis centre line. At the front of the chassis the track rods are again adjusted so that when the servo saver is centralised, the front wheels are parallel at full ride height.

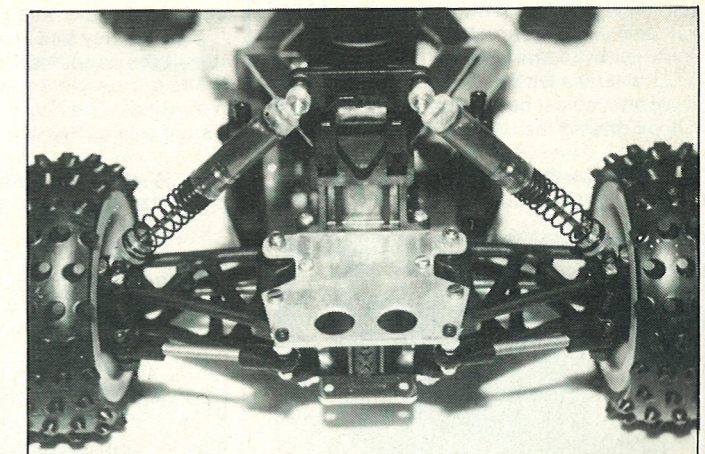
The camber of the four wheels can be altered by rotating the inserts in the hub carrier. Experience has shown that leaving the front inserts in their factory pre-marked and drilled position is generally the best setting. However, for the rear some additional negative camber is generally preferred and this is achieved by rotating the bearing carrier insert by 45° in a clockwise direction, drilling new holes for the self tapping lock screws and then re-assembling, any changes to the camber setting must be followed by a re-check on the wheel toe in/toe out setting which are

machined and supported by the usual needle roller bearing which should be lightly lubricated with Moly slip grease for maximum reliability.

Conclusion

The Sicom Propulsion is a rear wheel drive version of the internationally successful Magnum 4 x 4, offering all the chassis refinements of its more sophisticated and expensive brother and with its simpler transmission system is considerably cheaper. Without a separate racing class in England, it is difficult to see how popular it might prove in the market place and on the track. However it must make sense for the person who wishes to get started in rally-cross, where for the minimum outlay a car with a proven pedigree can be built and raced and by the simple addition of the appropriate transmission components, can be up-graded to top level international race winning standards when desired.

Rear end view of completed assembly.



altered by a change in wheel camber.

The shock absorbers come pre-filled with oil of approximately 20/50 engine oil viscosity and this is a good compromise grade for most applications. However, the springs as supplied in the kit may be a little on the hard side and again we prefer a change to 1.2mm linear front springs and 1.1mm progressive rears for the best all round handling compromise.

The standard Sicom clutch is of the P.T.F.E. three shoe variety, restrained by a steel 'O' ring spring. The shoes, trimmed to the recommended shape and tensioned by a correctly joined spring 'O' ring works well. The standard clutch bell is nicely

On the track, the Magnum Propulsion is very fast on acceleration due to its much lighter weight and handles remarkably well for a rear wheel drive car. Naturally, some care is required on the throttle, particularly in low traction conditions to avoid terminal oversteer, but it certainly provides some exciting driving. However, as we said for real numbers to be seen at race meetings, we need a separate class as in France where two wheel drive is at least as popular as four wheel drive. What about it, readers? Write in and let us know if you are interested in this cheaper, but equally exciting class of racing, and we will see what we can do!