MAGNUM FORCE

In the issue before last, we visited the *Siccom* factory in Paris and brought you the details of the new 'Magnum Force'. Now, days before the first National race meeting of 1988, we are able to bring you the behind the scenes view of the preparation of the 'Magnum Force' to full racing trim. Whilst the 'Magnum' can be built completely as per standard kit and provide excellent performance, I wanted to prepare my car to provide the highest levels of performance and reliability that can reasonably be achieved with the facilities at my disposal. Therefore this is not so much a kit review as it is one man's view of what is the definite competition version of the standard kit. Discussion with the factory and experience has indicated that reducing the standard kit weight from around 4 kilos to around 3.2 kilos provides benefits to fuel economy and performance without compromising on essential strength or reliability. Consequently, much of the emphasis during the build revolves around the quest for saving weight.

Much to our delight, *Siccom* were able to provide milled competition alloy chassis pans that were 100 grams lighter than standard, plus aluminium screw sets and special lightweight ball bearing sets with matching plastic adaptors to set us on the way to our goal. The first job is to build the differentials and assemble the front and rear ones into their moulded housings. The diffs are well machines sun and planet design and fit together nicely, remembering to grease all the moving parts well with Molybdenum grease and packing it into the diff assembly itself. We have found that to increase the service life of the output cups, it is worthwhile heating them to cherry red with a gas torch and then rapidly quenching them in cold water, naturally before assembling them into the diffs! Two of the smaller, lightweight bearings with their plastic adaptor sleeves support each diff assembly in its housing. The plastic gearbox mouldings are fitted together with aluminium screws from the screw set to complete the assembly. These are fitted to the chassis with alloy screws checking that they are going to rotate in the correct direction. Once tightened up, ensure that they rotate freely with a binding.

The centre diff is assembled next in the same manner as before, although no additional hardening is required here, and the centre drive shaft is installed. Useful weight savings can be made by cutting off the excess plastic "ears" on the centre drive train bearing support blocks as seen in the photographs. Ensure that the disk brake pads are de-burred and once fitted operate without binding and that the whole drive train is free to rotate.

The front and rear gearbox top plates despite being pressed from high strength alloy can bend in a hard crash and are worth modifying for greater reliability. At the front, obtain another top plate and cut off the two sides pieces to act as doublers to the original top plate. This can be seen more clearly in the photograph. At the rear, I use the original top plate to act as a template to produce a fibreglass plate cut easily with a coping saw from 3/32 in. sheet glass which has the double benefit of being lighter and stronger than the original. Again, this is seen clearly in the photo. Incidentally, all the fibreglass parts have been dyed black purely for cosmetic reasons. All you need is a tin of Dylon No. 8 hot water dye, mixed with enough water to cover the parts to be dyed when placed in a baking tray, and then boil the lot for around 30 minutes for a perfect black finish. Looks great!

The original chassis top plate is pressed from alloy and specifically shaped to accommodate the *Rossi* Motor and a brick servo fitted with a long extension arm. As I intended to fit my favourite *OPS* 'PRO' Motor, and didn't like the look of the linkage to the steering on the kit version, a new top plate was soon drawn out and cut from the same 3/32 in. glass fibre sheet also proving to be lighter than the original as well as bend proof! All is revealed in the pictures in glorious black dyed finish!

The radio installation is a per kit and can be clearly seen in the photo's with the required linkages installed as tidily as possible. Note the use of plastic Spirap covering any vulnerable radio wires to prevent chafting, and the use of the receiver mounting post doubling as the aerial mounting pillar.

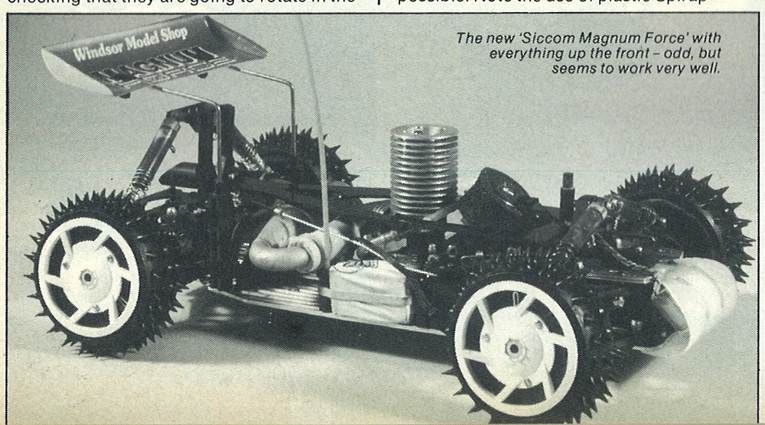
The suspension and drive shafts are fitted as per the kit, taking care to fit all the spacers in their correct positions on the suspension pivot balls, and make sure all the moulding flash is removed from the balls before snapping them into the wishbone. The steering arm assemblies are fitted with stub axle bearing inserts which can be rotated to set the amount of camber at each wheel. Using the recommended kit settings provides a good starting point and of course you can experiment with different tunes to find the setting your prefer.

The wheels are the new quick release version and work superbly. The alloy locking lever needs careful filing to ensure it is flat, and when clamped in place behind the outer wheel rim, it can be moved freely. Tyres need to be filled with 3/8 in. thick foam strip, 1 1/4 in. wide, their flanges roughed thoroughly along with the plastic wheel hub and then the tyre slid into position. This should then be glued with Loctite 495 Cynoacrilate adhesive which provides a superb bond to plastic and rubber.

Shock absorbers come ready assembled and pre-filled, but for serious facing need to be fitted with a pressure nippled into their upper section through which they may be emptied and refilled. *PB* nipples are ideal for the job, and a 2mm tap can be run down the inside of them, allowing a 2mm screw to be inserted to seal them after filling. A good starting point for damping oil is 20/50 oil in the rear shocks, and a mixture of 75 per cent *STP* or *Wynns* oil additive and 25 per cent 20/50 oil for the front shocks. The kit 1.3mm front springs and 1.1mm rear springs provide a good starting point, but will need a couple of coils cutting from the fronts and around one coil out from the rear to reduce the ride height to a more sensible level. Ideally, the car needs to sit as low as possible without excessive bottoming our when driven over the worst bumps at racing speed.

Finally, with everything installed in the car, set the geometry to provide a touch of toe in at the front and rear at running ride height. Using all the lightweight parts as described, we achieved our target weight reduction and yet have a chassis that in many vital areas is actually stronger than the original! Well worth all the effort. I'm sure you will agree - and doesn't it look lovely in Black....!

On the horizon for the 'Magnum' are new plastic drive gears which incorporate an alloy gear ring sandwiched in the middle for greater resistance to shearing teeth in stoney conditions, a new, improved final tank and all new large volume dampers with progressive, variable damping rates.



The new 'Siccom Magnum Force' with everything up the front - odd, but seems to work very well.