

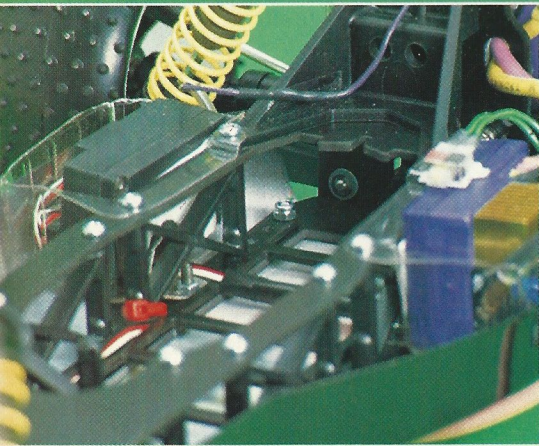
Since the Cougar 2000 was released in early 1993, the Schumacher Team have been busy beaver away trying out new ideas. With the Cougar '95, released not too long ago, some ideas have worked, some haven't, but Phil Booth and his merry men carried on regardless. With the release of the very latest Cougar 2000 '95 'Team' I think they may have it licked...

There have been some quite significant changes made to the car, so let's see why the Cougar 'Team' should be one of the leading contenders this season.

The Chassis.

Just one of the many changes that have been made to the latest Cougar, the new upper and lower chassis plates are quite different to earlier versions. What Schumacher have done is this: They have cut out a large rectangle from the lower chassis where the cells would usually lie, then added a moveable cell mounting plate, which enables the driver to alter the weight distribution by mounting the cells in any of three positions, allowing a total movement range of 16mm. The lower chassis plate is also extra narrow, being in fact the same width as the upper plate. This not only reduces the weight, but it allows the undertray to be lifted up either side of the chassis, the increased ground clearance allowing for more body roll during cornering.

All of the chassis parts are made of Woven Fibre Epoxy (WFE), and once their edges have been rounded off, superglued, then finished off with a black marker pen, they look very nice indeed. Carbon fibre parts are available as Speed Secrets from Schumacher, but as the Cougar is



The receiver and speed controller on the '95 'Team' are now mounted in two lexan boxes hung from the top plate. The cell 'sliding ladder' plate has 3 positions, allowing a movement of 16mm. The clamping bolt can be seen on the left between the moulded 'gate' and the suspension pivot pin.

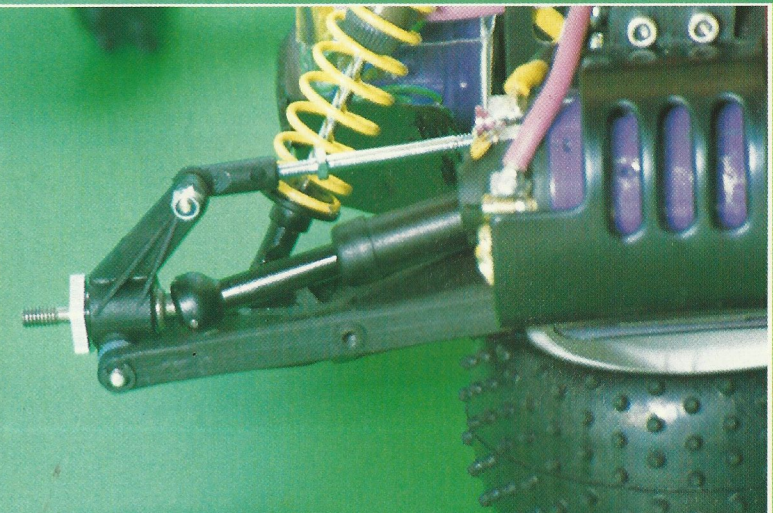
already very light, and the plastic 'gates' between the two chassis plates make the car very rigid indeed, the only reason that I could think of for purchasing these bits is to pose in the pits (believe me, they do look very sexy!).

As the lower chassis plate is now so narrow, there is literally nowhere to mount the radio gear as before. This problem is overcome by mounting the receiver and speedo in two lexan radio gear boxes. These are an excellent idea, as they hang very neatly off the upper chassis plate in much

the same fashion as motorbike panniers! Once the radio gear is fitted, the car looks very neat and tidy as the wires are tucked away below the Rx and speedo at the bottom of the boxes.

The steering servo sits transversely across the lower chassis plate on two adjustable pillars, very neat, but it's a little tricky to get to the servo once the chassis has been built. The steering ballcrank is angled to achieve the ideal height for the inner ball joint for the track rods to remove all possibility of bump steer. A modification has been made to the steering layout, and that is that one of the steering posts has been lengthened to allow a bush bearing to be added, which then

Schumacher Cougar 2000 '95 'Team'

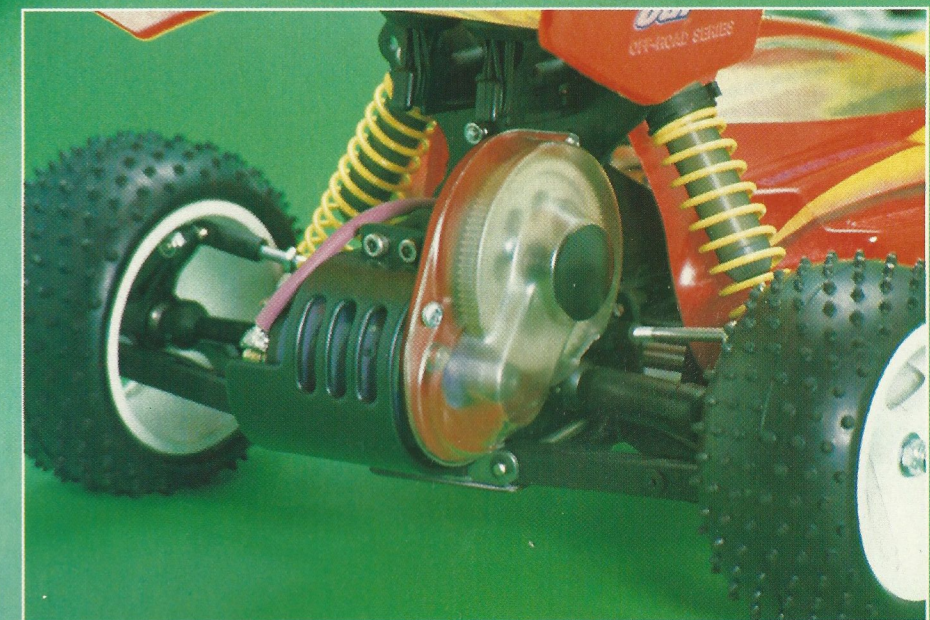


The rigid one-piece hubs and Co-Axial driveshafts.

slides very neatly into the new moulded steering post support attached to the upper chassis. Two different lengths of drag link are supplied to give two different amounts of ackermann angle, this feature being only one of a few adjustments used from the original Cougar 2000 design.

The SACS MK2 Front End...

I feel that this latest Cougar is a lot more 'driver friendly', particularly for younger drivers and the inexperienced, because the earlier version was quite involved when it came to it setting up. The original Cougar's front suspension had the option of four castor inserts, in 5° steps, and three

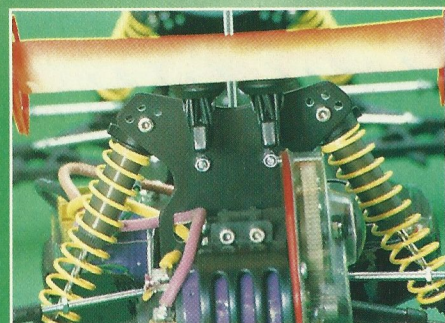
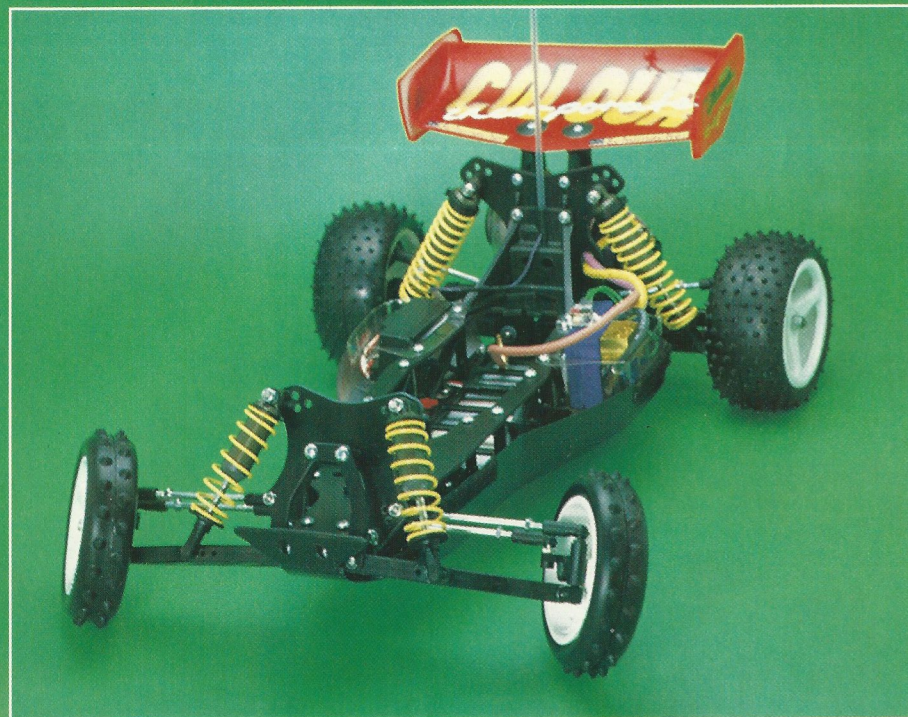


The new parallel pin, 6mm shorter rear wishbones now feature the inner pivot mounted through an alloy bracket. No aftermarket 'uprate' part needed here!

ANTONY GRIFFIN REVIEWS THE VERY LATEST VERSION OF SCHUMACHER'S 2WD CONTENDER

Schumacher Cougar 2000

'95 'Team'



The new one-piece shock bracket also mounts the pick-up for the rear top link.

different rake angles. The rear suspension allowed for two different anti-squat angles to be used, and it was also possible to alter the amount of toe-in and the height of the axle line in relation to the suspension pivot point, added to which the wheel base could also be altered. A mind blowing choice of settings, and all these before even thinking about the shocks!

The latest Cougar has changed all of that. The new Cougar sports the new MK 2 SACS (Schumacher Active Caster System) which has no adjustments to be made on it. This is an ingenious invention, which appeared towards the end of last season. How does it work? Well, the SACS front end increases the caster angle when the nose dives into a corner or off a jump, and decreases the caster when the front end lifts, ie accelerating out of a corner. This geometry enables the wheel to be kept flat on the floor thus giving consistent grip around a corner, and extra

incorporated with the shock bracket. Schumacher have done this by moving the rear links mount backwards, making the rear tumbuckles straight, and this extra space in front of the new rear shock mount allows the cells to be moved backwards. Schumacher have done away with the rear pivot blocks and pivot brace, giving a fixed anti-squat angle of about 5°, reducing the tendency for the car to understeer under power. The new parallel pin wishbones are 6mm shorter and have parallel pivot pins, now attached to the chassis with the inner pivot pin sliding through the new aluminium rear strap, through the wishbone and into the rear shock mount. This is a lot neater, and because the rear of the chassis is now much narrower and the pivot blocks have been done away with, there is of course less weight.

The hubs are now made in one piece offering only one pin position. The original Cougar's toe-in hub inserts did confuse people, especially when trying to alter the car's set-up in a hurry, so I for one welcomed the rigid new hubs with open arms. The kit is supplied with hubs that give 3° of toe-in, which will work well on almost any track surface, although I suspect that Schumacher will soon release hubs to give varying amounts of toe-in for fine tuning. The new rear end still offers the useful facility to change the wheel base, but altogether the Cougar is a lot easier to set up without becoming confused.

The Shocks

The shock absorbers, as always from Schumacher, are of excellent quality. The pistons etc are made from low friction molybdenum disulphide loaded plastic, whilst the super hard anodised alloy bodies with micro polished stainless steel rods give really low drag (and no corrosion). The triple diameter, colour coded springs are so designed not to touch the shock's body and in conjunction with the silicone seals, give a beautifully smooth action.

Schumacher have again kept their easy adjustable pistons, which offer a choice of one to four holes, thus altering the shock's damping without changing the oil. Schumacher also provide two sets of piston seals: The white low drag versions, and the standard red ones, but as there was little real difference between the two

and the white ones leaked a little, I chose to use the red seals. I found that getting rid of every bit of

air from the shocks took a little patience, but once this was achieved the shocks were extra smooth.

The only real difference between the two Cougars on the shock front, is that Schumacher have chosen on the new car to use short shocks on the front, rather than intermediate types. Having tested the car with both short and intermediate shocks I could find very little difference. The short shocks lower the ride height, but as the SACS front end raises it a touch this doesn't pose a problem.

The Transmission

The transmission is the same as the original Cougar 2000, but is now removable by just undoing 6 screws. The gearbox uses low inertia 48dp gears for outstanding efficiency and acceleration off the line. The gearbox is designed to allow the motor to be fitted very close to the differential, leaving very little overhang thus allowing the car to land almost vertically off a jump, and still land on its rear wheels.

The differential comes ready built, uses large diameter balls for increased performance and is sealed for long life. The slipper clutch with its quick change 'whisper' gear went together nice and neatly, and responds well to fine adjustments.

The only difference about the transmission is the new 'Co-Axial' driveshafts to replace the old alloy tubular versions. The Co-Axial shafts, which I'm sure all of you



The extended servo saver shaft is now braced at the top by a plastic moulding. Rough tracks - no problem! Short shocks are now used at the front.

have seen on the very successful Cat 2000, have a sealed telescopic sliding action and twin universal joints, which allow the wishbones to drop really low without them dropping out, which is what tended to happen with the alloy ones. These are tremendously effective. You can buy ballraced versions of these driveshafts, available as Speed Secrets parts, but as these driveshafts are so well engineered I don't think there is any real need to modify them.

Have you ever raced on a track where a ton of dirt has accumulated inside the wheels, therefore causing the motor to drag the extra weight around? Well, that problem has now been cured by the change to 3 spoke wheels. Mind you, whether that is the reason for them or not, who cares? They really look so sexy!

The Test

The Cougar 'Team' features a restyled bodyshell, which

was farmed out to Marc Parsons of Colour Incorporated (01354) 036904. Marc did his usual super airbrush job, well up to Concours standard!

To test the Cougar, I chose to run the new speed controller from M-troniks, the CM 900 VHF. This proved a good choice, as this speed controller is extra efficient, whilst the ABS braking system is superb and really comes into its own with a 2wd car on slippery surfaces. I tested the Cougar on Kidderminster's newly revised purpose built track, which just has got to be one of the best tracks in the country. The track's bumps and jumps were perfect to test the Cougar out on, and I must say because of the efficiency of the car, combined with the track's surface, that I could afford to gear my Trinity 12 x 2 on a stupid ratio, therefore the speed (in between crashes!) was incredible.

I initially found that on the less grippy parts of the track, that I was lacking front end grip. This was soon overcome by moving the battery mounting plate to its most forward position (the cells were initially mounted as far back as they would go), but this caused the back end to become a bit lively over the bumps, possibly calling for slightly lighter damping. Relocating the cells in the middle position improved the car's manners, but then the rain came down (again!) bringing the test to a halt (there is nothing worse you can do to an electric motor than run it in the wet).

Obviously some experimentation is needed to find the optimum set up, but because the latest Cougar's only real variable (apart from springs and damping as with any Off Road car) is the positioning of the cells, finding the optimum set up won't be too difficult.

After just a short acquaintance, I felt quite at home with the Cougar '95 'Team', so can say with confidence that not only will the serious racer appreciate the improvements, but the novice racer too, as the car is now so easy to drive and set up.

Good News Time!

For original Cougar '95 owners who wish to bring their cars up to the specification of the latest car reviewed here, a complete conversion kit (U17860) is available for a bargain 1/2 of the recommended retail price, but even more interesting is the fact that Schumacher's viscous drive unit (VDU) is to be available in April! Easy to adjust, with a vernier measurement scale, its hard anodised alloy parts and simple design should make it a must. What is more, it will be available to fit the Losi XX and Associated RC10 as well as the Cougar and Cat 2000 from Schumacher. The viscous drive unit is a universal fitting on all of the above cars, merely requiring the fitment of the correct layshaft. The VDU (part no U1787P) requires layshaft No U1791T to fit the Cougar, and layshaft No 1788Q for the Cat 2000. See 'Racing Lines' next month...

The Cougar 2000 '95 'Team' is manufactured in Britain and distributed World-wide by: Schumacher Racing Products, Hanson Business Park, 71-73 Tenter Road, Moulton Park, Northampton, NN3 1AX. Available from all good model shops.