

# SCHUMACHER Mi3.5 PRO & S1

BY MARK BURGESS



TelsShells tribute to 'The Doctor', Moto GP's Valentino Rossi, a similarly iconic leader of the pack

**FOLLOW THE LEADER!**  
Schumacher Mi3.5 Pro & S1 get a visit from the Doctor!

## IT'S ALL IN THE GENES

For many years I've driven Schumacher cars, visited the factory many times and am on first name terms with the team in Northampton. I'd like to think this gives me a valuable insight into this kit and its genetic bloodline. Back in 1996 Schumacher released the SST, its very first 1/10th Electric Touring car. Available with stick and saddle pack options it immediately set the pace in the new scale touring class. Remember back then we were still racing 1/10th Off Road cars converted to 'on road' spec by lowering suspension and fitting large saloon shells?

The lessons learned from the SST were designed into the next generation SST Pro 99. This is a car I have fond memories of racing at the 1998 Worlds in South Shields. It had good tuning options, predictable handling and could survive a knock or two. It also brought the first 'blade' driveshafts that used plastic mouldings to reduce wear on diff outputs.

A move towards mid-motor chassis designs brought first the Axis and then the Axis-2. The weight distribution made them tricky to set-up, but were stunningly fast. I remember watching factory driver Steve Pole win a BRCA National with an Axis at the (much missed) Ashby track.

The next evolution was the Mission kit, which returned to a more traditional weight distribution and not surprisingly proved to be a much easier car to set-up and drive. A car I have fond memories of as it brought me a National victory at the WLRC track.

Its replacement was the Mi2, which moved away from the DNA of the touring kits to date with innovations and fundamental design changes. Still very different to the other kits on the market, this was a car I clicked with straight away. It brought me a clutch of BTCC and STCC round victories. I wasn't the only winner with this car, as Teemu Leino won the very wet 2005 European Championships in Denmark with a factory modified version of the Mi2. Shortly after the Northampton factory produced the Mi2 EC version to celebrate the European win. This brought some useful upgrades to the winning Mi2 formula, but

also included some parts that were specific to Teemu's preferred driving set-up and Euro track.

The third generation of Mission kits came with the Mi3. This was a major surprise as it brought the design and set up of Schumacher's touring cars more in line with the rest of the market, while featuring Schumacher's now legendary innovations, so it was now possible to compare and contrast set ups with other cars using similar basic suspension geometry.

The Mi3 has been a very successful car, taking the top six positions in the 2008 BRCA National Pro Stock class, and backing this up with other national titles across Europe, so another evolution of this successful design was the sensible move.

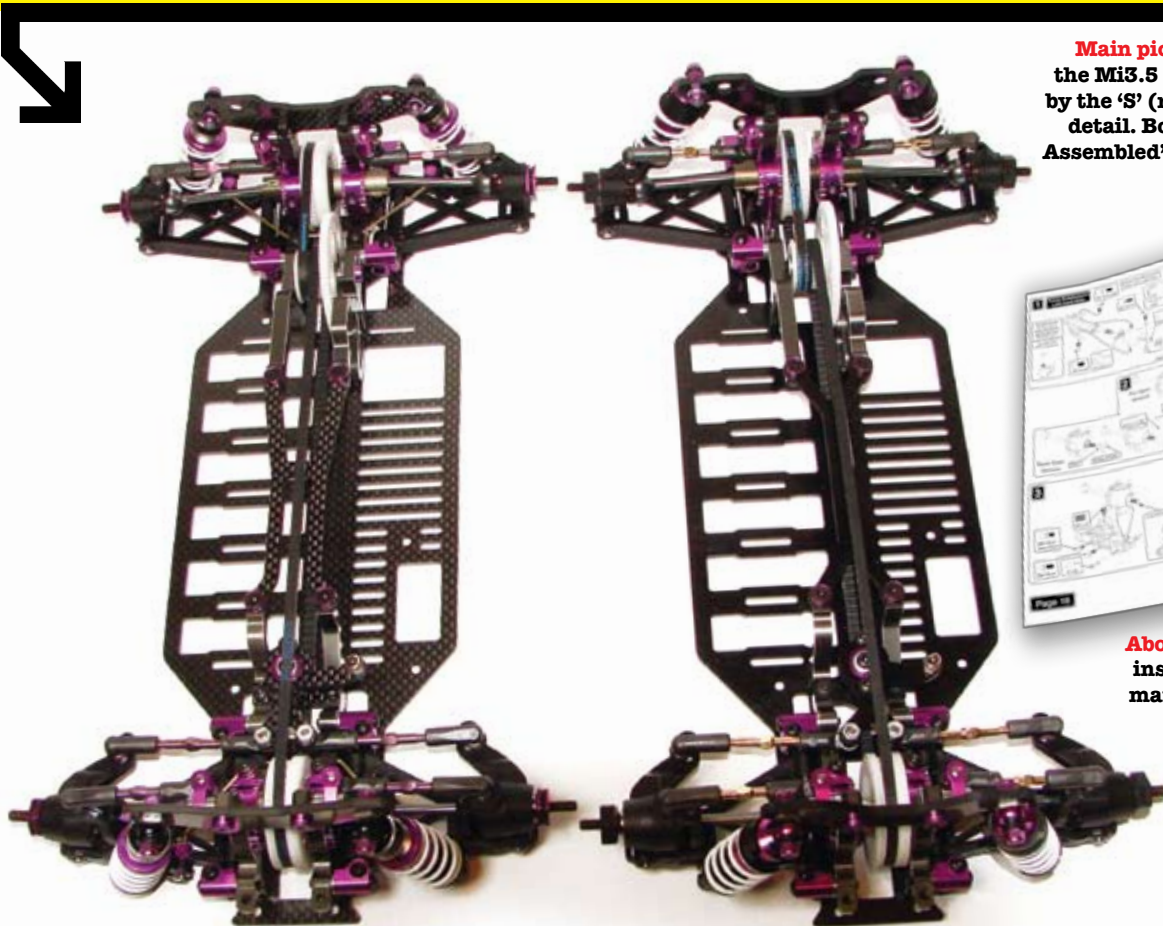
And that brings us to the Mi3.5, where once again Schumacher bring the parts tested on the racetrack to the next generation of kit. Think of it as the ultimate Mi3 kit, with every option and upgrade pre-fitted.

## LITTLE BOXES

Three boxes arrived for this review, two we'll cover now, and the contents of the third will wait until later in the review.

The Mi3.5 is offered in three kit specifications, reflecting the wide spread of the 1/10th electric touring car market. Two are clearly aimed at the serious racer, and are labelled as 'Pro' specification to reflect that. Of these the first of the two is designed around a carbon-fibre 6-cell chassis that will accept either a traditional 6-cell pack of sub-C batteries or the increasingly popular LiPo batteries. In the UK this is clearly aimed at the Pro Stock class and the wide range of 10.5 brushless motors. Other markets still run modified 6-cell, emphasising the difficulties manufacturers like Schumacher have when designing a car to suit the diverse rules across the world.

The second of the two Pro kits is designed with a carbon 5-cell chassis, aimed squarely at the BRCA and European modified class. Aside from changing the weight distribution of the chassis for the lower weight of five cells, this is in all other respects the same design and specification kit as the other Pro 6-cell kit.



**Main pic:** Spot the difference, the Mi3.5 Pro (left) is mirrored by the 'S' (right) is almost every detail. Both arrive as 'Factory Assembled' chassis to get you on track quicker

**Above:** Clear and concise instruction manual aids maintenance and tuning

# SCHUMACHER Mi3.5 PRO & S1

**Below: Mi3.5 Pro chassis complete, carbon chassis, TiNi shocks, purple turnbuckles**



**Above: Super smooth shocks, the Titanium Nitrided shafts denote the Mi3.5 Pro spec versions**



**Above: Belt adjuster eccentrics allow fine tuning and easy maintenance**



**Above: Blade driveshafts get, 'CV' style UJ's and lightweight drive hex**



**Above: Ball diff (left) and Spool (right) have very different jobs to do**



**Above: Spool has castellated output cups for easy replacements**

The third kit in the Mi3.5 range marks an interesting departure for Schumacher. Previously the budget kits sold by the company for impressively low prices would be from the previous generation, but now the latest version is available in budget spec using S1 composite material for its chassis. The advantage of this is the Mi3.5 S1 costs some £100 less than the Pro version and yet can be upgraded in stages to the full Pro spec. This has to be good news for both beginners and club racers looking for a competitive kit with room for growth. For this review we were very fortunate that Schumacher provided us with both the Pro 6-cell kit and the S1 kit.

## CHASSIS AND DRIVE TRAIN

One thing that has hugely improved over the years are the instructions that Schumacher include with their kits, always perfectly clear in the way they demonstrate how the car fits together, and provide tuning tips to get the best performance on the track.

All three of the Mi3.5 kits come pre-assembled from the factory, and very well built they are too. There are some minor parts to complete and of course fitting the electronics, tyres and bodyshell of your choice.

The chassis on both Pro spec kits is cut from carbon fibre for lightness and improve stiffness. This is complimented with four main chassis rails that the front and rear suspension attach to. The very latest 2008 Euro top deck is included to control chassis flex.

The S1 kit uses the same basic layout, with the chassis and top deck made from S1 composite material. This is a much easier material to cut, and is slightly more flexible than carbon, so should make the S1 kit an easier car to set-up and drive.

All of the Mi3.5 kits come with the same two belt drive train. Drive from your choice of motor hooks up to a 48DP spur gear, and drives both belts from a compact centre pulley. The shorter rear belt transmits drive to the back of the car through a pre-built ball differential. The front belt hooks up to a spool which demonstrates the improvements racing has

brought to the design. Previous Schumacher spools used a one-piece alloy part to transmit drive, which was fine until an accident chewed one of the out-drives, meaning a full replacement was the only option. Now two replaceable spool outputs bolt on, driving through castle connectors to the centre spool unit.

Further evolutions of the Schumacher driveshafts are common to both cars. The Pro kit uses an alloy wheel hex to transmit drive to the wheels, whilst the S1 kit uses a one-piece plastic moulding.

## SUSPENSION AND TUNING

Both kits share the same suspension geometry. The lower wishbones connect via screws and washers to the four chassis rails. These washers are found throughout the suspension and are the secret to dialling in the handling of the Mi3.5 kit. Adding or removing washers will move the wishbones up or down to adjust roll centres, and in or out to control inboard toe in. Simple and easy adjustments all round.

The top suspension link is fully adjustable, the Pro has purple anodized turnbuckles, while the S1 kit has spring steel versions. The inboard link has more washers to adjust the length of the link, while smaller washers adjust the height and angle.

The chassis rails also have the front and rear shock towers bolted securely to them. The towers have a choice of four holes to adjust the angle of the shocks, with more choices to mount the bottom of the shock absorber in the wishbones.

The S1 kit shocks are a tried and tested Schumacher design. A single purple alloy shock body connects to a plastic moulding that contains the foam volume compensator and O-rings. Ride height is adjusted using a range of plastic spacers included in the kit.

As impressive as these shocks are, they are outshone by the latest Schumacher race spec shock included in the Pro kits. Threaded shock bodies allow fine tuning of ride height. Instead of foam volume compensators, these shocks use a rubber diaphragm, which makes

replacement of the shock oil a breeze. The Mi3.5 brings an improvement to the shock top design, which makes bleeding excess oil much easier.

We've described a myriad of tuning options already, but the Mi3.5 isn't done yet. Grub screws in the wishbone allow suspension droop to be adjusted. The steering yoke can be moved backwards and forwards, which is useful for the Speed Secret set of steering yokes of different lengths and widths. With such a wide range of options, this car can be dialled into any track conditions either outside on tarmac or indoors on a variety of surfaces.

## POWER IS NOTHING WITHOUT CONTROL

After adding the front bumper and rear body mount, the Mi3.5 rolling chassis needs fitting with your choice of electronics. I have a long successful history of using the Futaba range of servos, and the latest S9551 servo fitted a treat into the supplied mount. I chose a fixed servo arm rather than the servo saver supplied in the kit, but I'd recommend looking at a more compact aftermarket servo saver to protect the servo gears.

As I'd be racing the Mi3.5 in the ProStock class I chose to fit a Speed Passion Gran Turismo speed controller paired with the Speed Passion 10.5 motor. The speed controller can be tuned through the servo lead by a programming unit.

On the battery front I'm a convert to LiPo power, and fitted the full fat Core RC 5000 Ah 7.4 V LiPo battery. The chassis rails are designed to accommodate LiPo cells, and the only real choice for mounting batteries in a racing kit is of course battery tape.

It has to be said the advent of larger brushless speed controllers with their power wires and one sensor cable does reduce the space for radio gear. Thankfully a micro Spektrum receiver squeezed in nicely between the servo and speed controller. Larger receivers could be mounted on top of the servo.

Finally, fitted with Sorex tyres, the kit was ready for a bodyshell.

## A VISIT FROM THE DOCTOR

Remember the three boxes that arrived for this review? The third was a very special paint job from that master of the airbrush Terry Atkinson. Schumacher had kindly supplied an East Coast Mazda 6 shell for review directly to Terry to spray in a colour scheme of my choice. Now I'd always wanted a shell painted in the colours of my favourite MotoGP rider, the one and only Valentino Rossi. Turns out Terry is also a big fan of 'The Doctor', and set about the challenge with gusto.

**Below:** Minimalist chassis can accommodate 4, 5 or 6-cell battery classes, plus LiPo of course. Just tape it down where you need it



A large cardboard box arrived while I was working away, so I had to wait for the weekend to see the finished shell, what a masterpiece! Based on the Rossi "sun and moon" helmet design in black and yellow, with a rainbow sparkle catching the light from the black sections. 'The Doctor' logos both sides, the number '46' in the roof and the finishing touch the Rossi sun-face sprayed into the bonnet. Simply stunning, and I have to say I've never cut out a shell as carefully as I did this one. Thanks again Terry! (hmmm, two more closet bikers identified – Ed!)

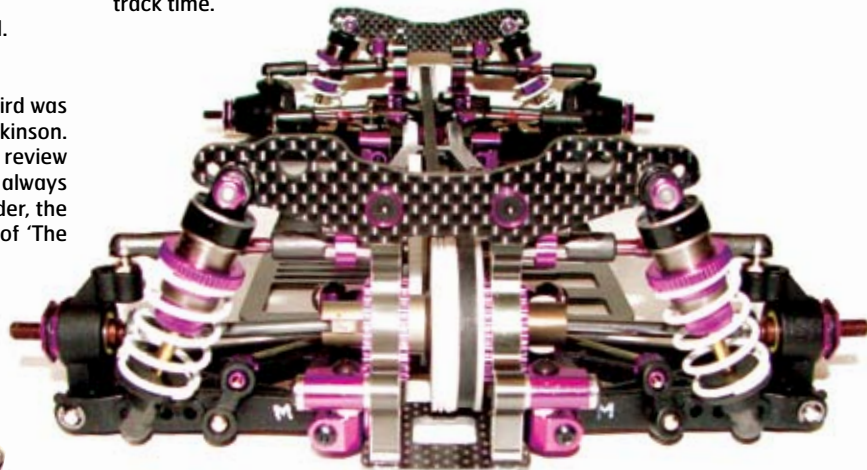
## HITTING THE TRACK

Photos taken and we were ready to hit the track with the Mi3.5 Pro. A visit to a local club meeting racing on carpet was the ideal place to test the Mi3.5 against some decent competition.

Initially I left the set – up as assembled in the kit as I suspect this is a generically safe set – up for all surfaces, and the first round saw the car ride very soft with more body roll than I wanted. As the carpet takes a couple of rounds to settle down I decided to stiffen the suspension up with harder Schumacher springs (the kit springs are the softest white springs). The second round saw better handling but still not quite where I wanted it.

So back to my trusty Mi3 set-up book, for a previous carpet set-up. Based on a DHI cup winning set – up published on the Schumacher site, this set up takes some time to change to so I missed the third round and went straight to the final.

Straight away the car felt more positive and could carry much more corner speed. I immediately found myself dicing with the leader, and tucked in behind him to see where the Mi3.5 had an advantage. With a couple of minutes to go I got a better line onto the straight, and used the corner speed to make the inside line at the next corner. A win first time out was impressive, and I felt there was more to come given more track time.



**Above:** Rear end sporting real low anti – roll bar and drop links



**Left:** Most adjustments are made by adding or removing washers between mount blocks for an easy, accurate set-up

# SCHUMACHER Mi3.5 PRO & S1



**Above:** Completely wired, super low centre of gravity  
**Left:** Keep it tidy, and away from the drive belts, and you'll still find room for everything. Larger receivers can mount on top of the servo

## QUICK SPEC

**Class:** 4WD Competition 1/10th Electric Touring Car  
**Type:** Factory Assembled Chassis  
**Manufacturer:** Schumacher  
**Price:**  
**K080** – Mi3.5 Pro Carbon 6-cell  
£299.99 RRP  
**K081** – Mi3.5 Pro Carbon 5-cell  
£299.99 RRP  
**K082** – Mi3.5 Race S1 6-cell  
£199.99 RRP

## REQUIRED TO COMPLETE

Motor  
Motor pinion  
Electric Speed Control  
Wheels and tyres  
Battery (5, 6-cell or LiPo)  
Charger  
Radio  
Servo  
Bodyshell and paint

## DISLIKES

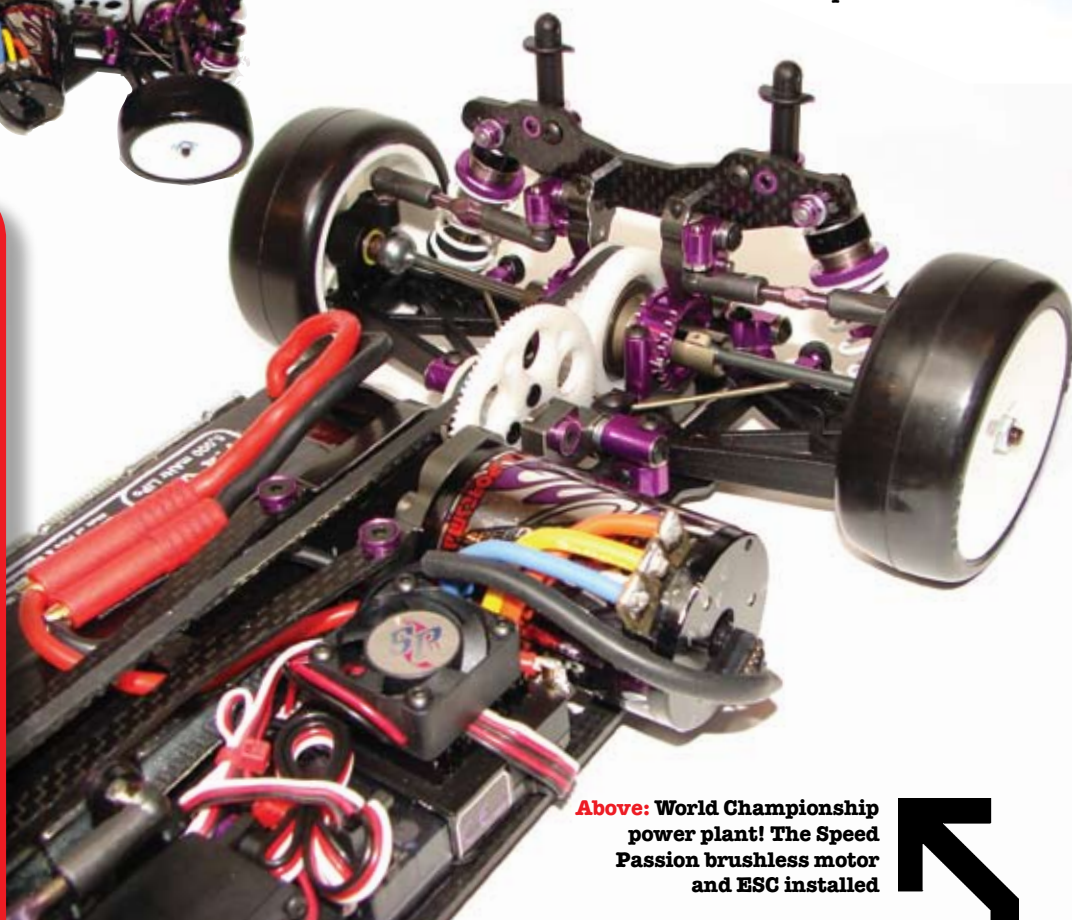
Carbon prep needs disassembly of kit  
Electrics can be a tight squeeze

## LIKES

Factory assembled  
Championship winning design  
Can be tuned to any track conditions  
Clear instructions  
Entry-level S1 spec Mi3.5 kit

## CONTACT

Schumacher Racing Products  
Tel: +44 (0) 1604 790 770  
or visit [www.racing-cars.com](http://www.racing-cars.com)



**Above:** World Championship power plant! The Speed Passion brushless motor and ESC installed

## SO...WHAT'S THE VERDICT?

The Pro spec Mi3.5 kit is the very best Mi3 you can buy. A successful 2008 season from the Schumacher team has improved the solid Mi3 design, and you have a National class winner ready to go. I'm not used to a pre-assembled race kit and it certainly helped speed up the review and get on track sooner. I can see and feel the improvements that the Mi3.5 kit brings, and it is an evolutionary step forward. Whether existing Mi3 owners feel it is worth the cost to upgrade is a harder question to answer, and an upgrade conversion kit would make that upgrade more affordable.

The big surprise is the S1 kit. National winning design for club racing money will be a winning formula for those on a budget. The review S1 kit is being prepared as a car for a new racer, and it will be interesting to see if the more flexible and forgiving handling shines through.

We like the Mi3.5 and can't wait to get it out at larger meetings. It has the DNA of a winner and has tuning options to suit all tracks and driving styles. So I ask you, why follow when you can lead? **RCR**