

SCHUMACHER Mi2 EC • XRAY T2-06 • TT-01 RACING

Racing Lines

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**REALITY RACING:
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MAY 2006



When XRAY launched the original XRAY T1 it was hailed as one of the highest quality kits on the market and it performed very well indeed on racetracks throughout the world.

We saw the growth of the

brand and subsequent on the fly changes to the T1 to keep it at the head of the pack.

The T1 FK05 was a fairly dramatic change in design and perhaps should have carried the T2 moniker but there is little doubt that the latest offering from XRAY is a significant step in performance design and it

fully deserves the generational change to T2 status.

It's too simple to dismiss the T2, as so many have done, as a copy of such and such (in fact those types of comparisons are pretty pointless for any car).

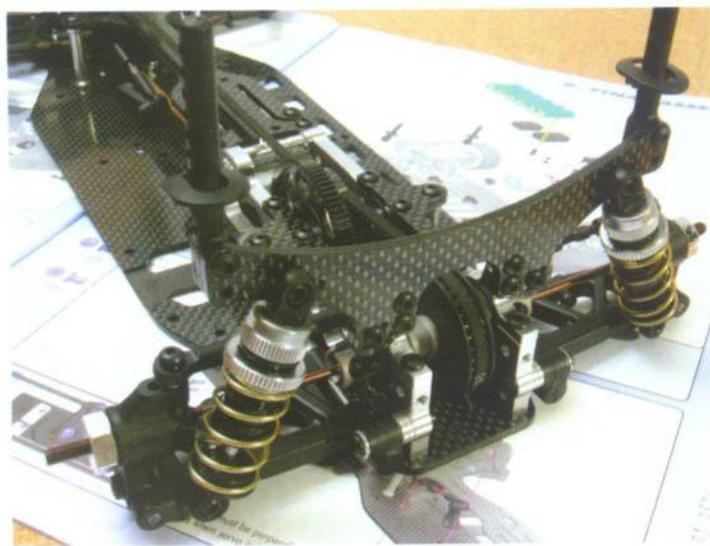
XRAY have incorporated heaps of new ideas and ways to tune the chassis and by our

reckoning, the car boasts three patents.

But beyond that it's the XRAY "luxury" that goes even further to set this car apart from the others.

No RTR here!

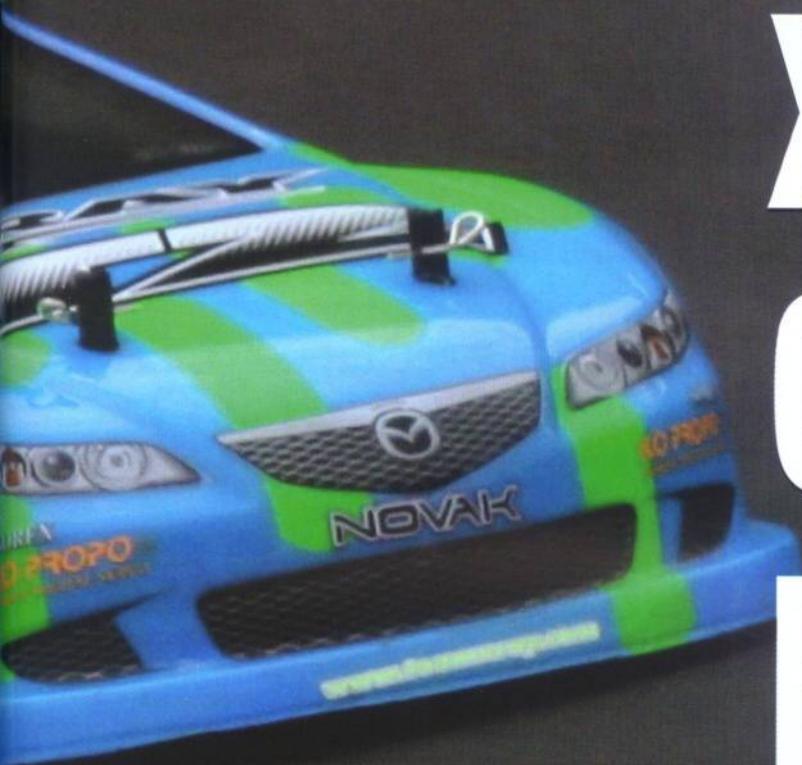
The T2 is a top line race car, when you take it home all you



T2-06:

XRAY GETS IT RIGHT

Is this the car that will capture
the World Championship crown?



have is a box of parts and an excellent set of instructions—the rest is up to you!

You will need quite a list of extras to complete the T2, from the ground up: tires and inserts, steering servo, receiver, speed controller, motor, a battery (in a “ladder” configuration), battery tape, 190mm body shell, paint (if the body is clear) and finally, a transmitter.

We used Sorex 36R and Jaco Nitro Shoes tires, KO PDS2363ICS steering servo, KO KR301 receiver, Novak GTX speed controller, Orion V2 Hara Edition 9x1 motor, Fantom Intellect 3800 batteries, 3M fibreglass tape, PROTOform Mazda 6 body painted with Tamiya spray packs and a KO EX10 Helios transmitter.

If you’re going racing you will need some weight as the T2 comes in a bit light, especially if you’re racing on foam tires!

One gem that’s in the

box and well worth a mention is the accompanying T2 setup manual.

It’s sensational and is something every racing car manufacturer should include.

Building

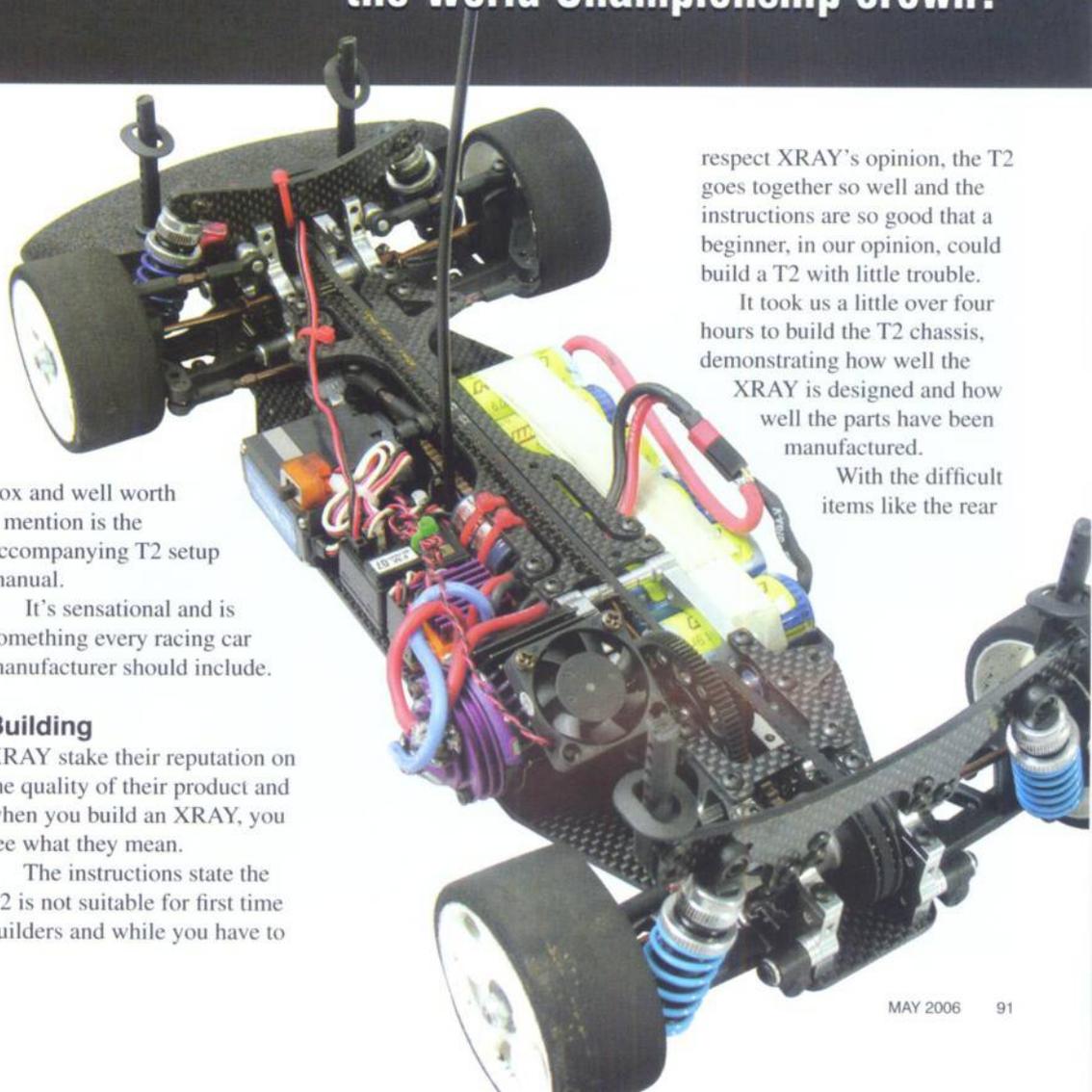
XRAY stake their reputation on the quality of their product and when you build an XRAY, you see what they mean.

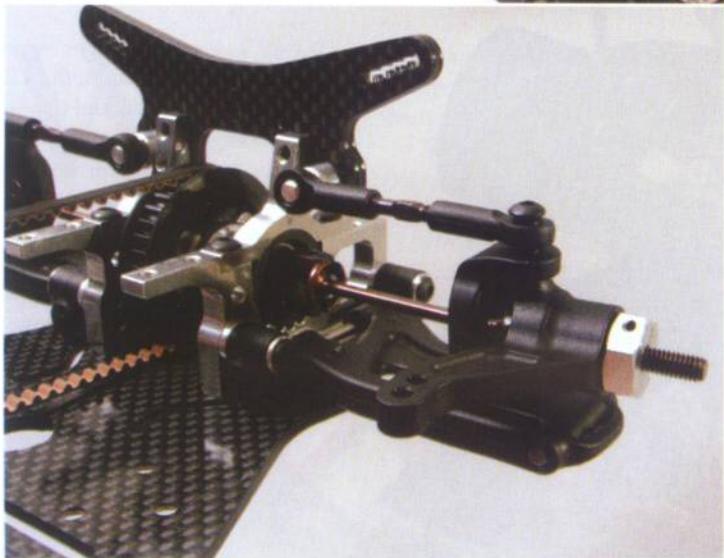
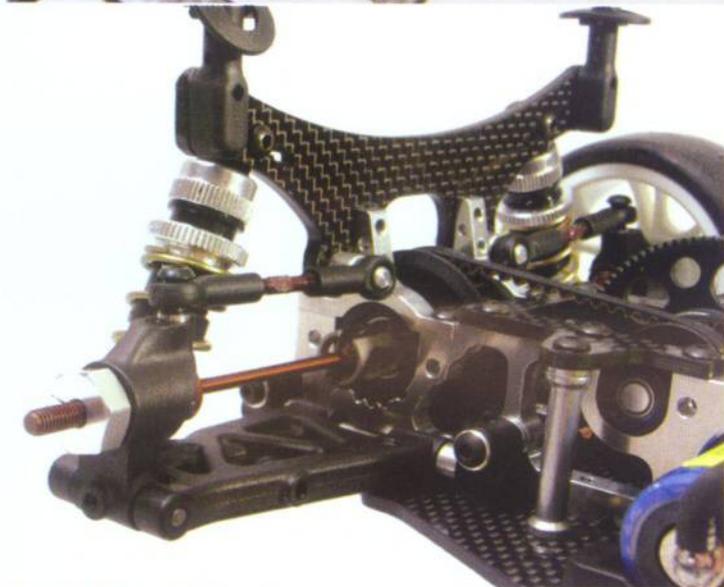
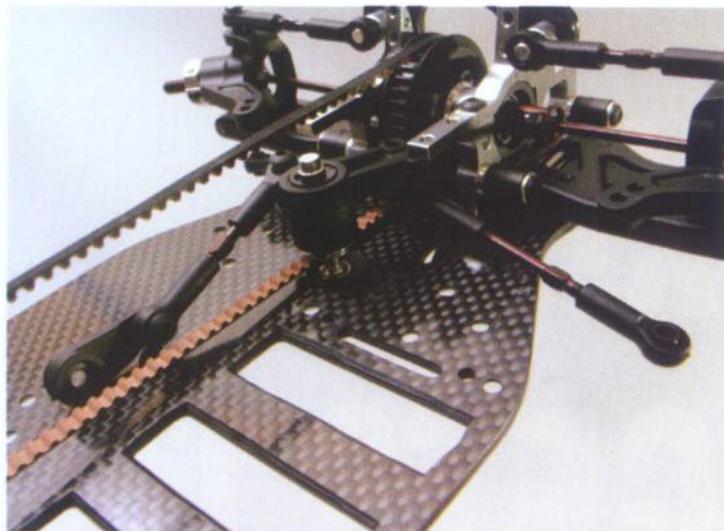
The instructions state the T2 is not suitable for first time builders and while you have to

respect XRAY’s opinion, the T2 goes together so well and the instructions are so good that a beginner, in our opinion, could build a T2 with little trouble.

It took us a little over four hours to build the T2 chassis, demonstrating how well the XRAY is designed and how well the parts have been manufactured.

With the difficult items like the rear





It's all new

It's remarkable how different the T2 is to the T1 FK05, there are very few parts that carry over from the T1 to the T2.

It's really the new innovations included in the T2 design that really stand out.

The carbon fibre chassis is the narrowest chassis yet for a touring car, meaning everything has to be close to the centre line.

When you're finished, everything will nearly touch everything else... nearly touch!

XRAY include the first of their new designs in the chassis.

The lower plate has a number of 'wavy' slots milled in it.

The reason for this is to allow the carbon plate to flex.

The upper deck is also carbon and it has been extensively milled to also allow the top deck to flex.

Control of the chassis flex is teamwork between the upper and lower decks and the alloy bulkheads.

Screws are removed from the bulkheads to allow more or less flex.

Some 25 screws can be removed and the car will still work!

Needless to say, this is a new innovation to build in such adjustments into the chassis.

The alloy bulkheads accurately locate the front Multi-Diff (one-way or spool) and the rear ball diff.

The rear bulkhead incorporates the countershaft and motor mounts.

The T2 design allows for super quick access to the spur and both diffs.

Belts can be tensioned by eccentric adjusters which carry the diff bearings.

The car is fully ball raced—and what bearings they are!

There is no need to wash and prep these bearings, they spin super free out of the box.

New CVD driveshafts, made from the famous Hudy Spring Steel, are used.

Gone are the integrated CVD's come hex drives.

XRAY has joined the masses with a more normal wheel nut arrangement and alloy clamp hex drives for the wheels.

We like this change as we were never big fans of the T1 system, although it does have some benefits, like larger wheel bearings.

The suspension is all new, the adjustments for roll centres and inboard toe are achieved through the use of offset bushes and shims.

It's pretty easy to make changes on the lower arms.

Upper links are Hudy Spring Steel turnbuckles.

Another new innovation is the "quick roll centres".

By using an eccentric ball stud with a locating pin, fine adjustments to the roll centre can be made very quickly.

Both front and rear shock towers are carbon fibre and have a myriad of alternative positions for the shocks.

The composite lower arms have two alternate locations for

ball diff already assembled, some of the hard work is done for you.

The only annoyance—common to most carbon fibre touring cars—is the sanding and sealing of the chassis edges.

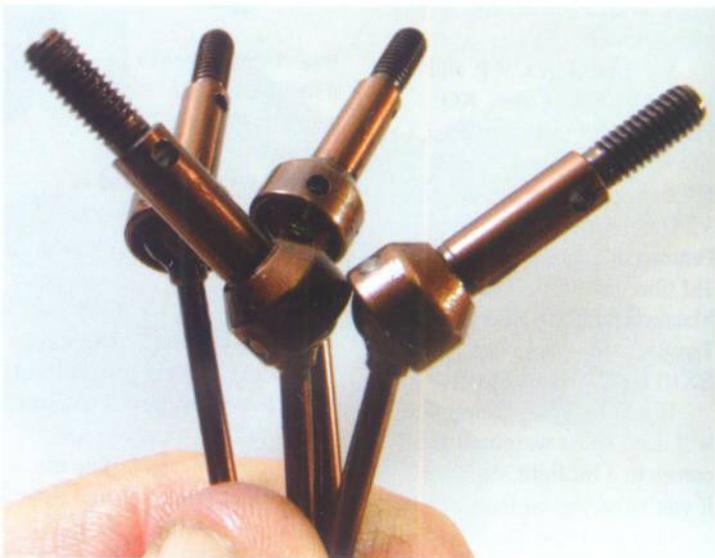
With the T2 this also extends to the filing of the battery slots.

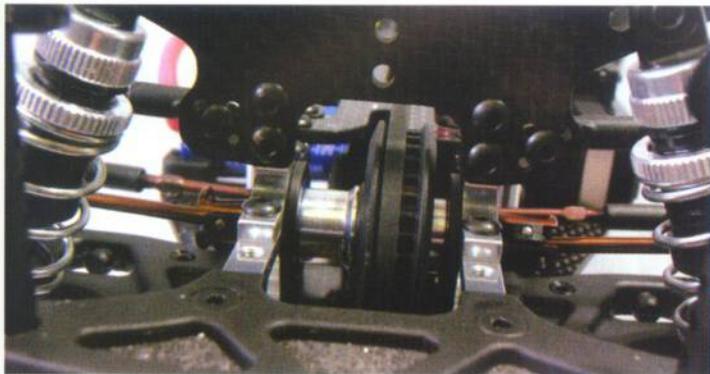
Bleeding the shocks and getting them right can be a bit

fiddly and time consuming but no more so than most high performance shocks.

The time involved in building the shocks is certainly rewarded with the T2.

We didn't need any specialist tools not already in the pit box but if you don't have allen drivers, they are worth picking up to build the XRAY.





the shocks.
Shocks are composite items and are very smooth and unlike our build up of the FK05, we chose to use the adjustable pistons—we are at a loss as to why we didn't do it last time as these worked very well.
New springs have been released with the T2 and they slot in at the softer end of the XRAY spring weights.

The T2 is basically setup for racing on rubber tires out of the box, like nearly all of the current electric race cars.

A foam bumper finishes off the package.

There is the option for swaybars and, unlike the FK05, the T2 apparently responds well to the use of swaybars.



The Specs

Manufacturer
XRAY

Model
T2-06

Type
1:10 EP 4WD Touring Car

Importer
Custom Model Cars

Dimensions
LOA 425mm
Wheelbase 262mm
Track rear 186mm
Track front 183mm
Weight (as raced) 1536g*
* Minimum legal race weight is 1525g, including transponder.

Technical Chassis
Carbon fibre twin deck, 2.5mm main chassis fully countersunk, 2mm upper deck, alloy bulkheads.

Suspension
Carbon fibre shock towers, threaded body composite oil filled shocks, Hudy Spring Steel upper turnbuckles, composite lower arms, C-hub suspension, fully adjustable, full bearings.

Transmission
Twin belt drive, rear ball diff, front "multi-diff" (one way, locked one-way, spool), internal ratio 1.7:1, supplied 84 tooth 48 pitch spur gear.

Gear used
KO Propo EX-10 Helios transmitter, KO Propo KR302 receiver, KO Propo PDS2363ICS steering servo, PROTOform Mazda 6 body.

Power
Novak GTX ESC, Team Orion Hara V2 9x1, Fantom matched Intellect 3800mAh NiMH cells.

With the 2006 Team Orion Summer Nats just around the corner, we were keen to get the T2 built and racing.

The build was great, the car went together really well.

There is not a lot of room on the chassis, we had no trouble fitting our 'race' electronics on the lower chassis but anything bigger and the receiver will have to be relocated to on top of the servo.

Wire layout does need some consideration.

We like using the no loss Deans plugs and this does not necessarily make it easier to do the fit out.

Racing at the Fairy Meadow track was hot—both racing and temperature wise!

So for the meeting we added a Tamiya heat sink and

a Much More cooling fan to cool the Orion 9x1.

We built the car as per the instructions and with the Team Orion Summer Nats an open tire event, we changed some of the box settings to better suit foam tires and our driving.

This included a change of springs, roll centres, droop whilst we also removed some of the screws to make the chassis flex a little.

What was really impressive was the difference each change made to the car's handling.

By the time we had finished, the rear was pretty close to stock and was unflappable but we still desired more turn in—there is little doubt the T2 can be tuned for whatever conditions you come across and characteristics you desire.

We did try turning the multi diff into a spool during practice and this was very different to drive but did take away some of the steering we were chasing.

Fortunately we had a no major strife with other cars or the track boarders but if the T1 is anything to go by, the T2 will prove a robust racer.

Despite the heat, all the electronics ran faultlessly, the only problem we had was where to load the ballast for race weight—we ended up with much of it under the front belt, which isn't a bad spot for extra weight.

All up we were very happy with the XRAY T2's first outing.

In a race of attrition (and with little Modified racing experience), to finish well up in the C wasn't bad.

The T2 had a good outing at the Team Orion Summer Nats, Damien Zarb and Luc Botton finished 1-2 in Stock and whilst a win eluded the XRAY guys in Modified, the T2 showed enough to indicate it will certainly be a force to be reckoned with during the 2006 racing season—a testament to a well thought out racer that it can do so well so soon after release.