

Drift Action at 1:10 Scale

Building the Yokomo Drift FC3S

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IT'S ALREADY BEEN ESTABLISHED in past issues of RX Tuner that I'm a bit of a nut when it comes to collecting rotary toys. Super detailed replicas of say a 787B are a must have, but the bad part of die-casts is that they just sit on a shelf, collecting dust. And it gets pretty old pushing them around on the floor muttering "vroom-vroom". What about those who want to have some fun with their scale toys? For you, the only answer is to go remote control. But beware, remote control cars, not those junky hunks of plastic you see at Wal-Mart, but REAL r/c cars can be addictive.

No place is that fact more evident than my own basement. I've been into r/c for the better part of 15 years. Over that time I've built a little bit of everything, Monster Trucks, four-wheel drive buggies, Stadium Trucks, Touring Cars, and Micros. But the one thing that's been missing to really grab the attention of today's import culture is a super detailed replica of your favorite car, that's also a capable performer on track. Yokomo realized this need and released a series of cars based on their race-proven MR-4TC chassis. The brains of the Yokomo marketing department also understood the surging popularity of Drifting, and created an entirely new segment of the remote control car market – Drift R/C.

I had known of the Yokomo Drift FC3S and Drift FD3S for awhile, and had been jonesing bad for one. FC guys never get any love, so when Yokomo release their FC car it's like they were after my own heart. I guess it was fate!

While checking out the r/c exhibition at JGTC, Brian and I both noticed the Yokomo booth. I quickly grabbed his shirt sleeve and said "ooh ooh, let's go

Photos: Ryan Scott



checkout their goods." We spoke to Butch Kroells at the booth, explained who we were and plopped down a copy of this little magazine we do. I guess Butch was impressed because he quickly reached into his stash and pulled out a shiny new Drift FC3S kit for both Brian and I. Like I said, it was fate.

I couldn't wait to get home and rip into the box. When I did, I was without a doubt impressed. The Yokomo FC3S and FD3S are part of the so-called Touring Car segment of r/c. Cars in this market are 4 wheel drive, either shaft or belt driven, these being shaft driven. Other features are a surprising rigid molded tub chassis (much stronger than tub chassis cars I've built in the past), ball differentials front and rear, totally adjustable suspension (caster, camber,

toe, wheelbase, ride height, and more), a superbly detailed body set, and chrome rims with Yokomo's own patented drift tires. Together it's a very nice package with a street price of around \$200. Like most kits, the car requires electronics for completion. Electronics specifically would be a transmitter, receiver, steering servo, speed control, either a side by side or stick battery pack, battery charger, and motor.

Assembly:

There's a good chance many of you reading this have never assembled a remote control car such as this. If not, there's nothing to be afraid of. There are a few basic things you'll need for the assembly, probably the most important of which is a good flat workspace where you have room to spread things out and keep them organized. Other than that, a sharp hobby knife and some good Phillips screwdrivers will get the job done.

Yokomo put together a very well organized and logical assembly manual, even a first timer will have no problem following along. They also organized the required parts and hardware into numbered plastic bags that correspond with whatever step you're on. Just rip open the right bag and inside it are the parts to complete that step, brilliant!

You'll find out right off the bat the importance of choosing the right Phillips screwdriver. The molded material is very rigid, also very hard to screw things into that first time. If you find yourself slipping the tip of the screwdriver off the heads of screws, you're not using the right tool. Get the right one or you'll end up with a car full of stripped screws. In **Step 1** you'll realize the importance of this when screwing in the battery post, trust me.

In **Step 3**, tighten the spur gear screws as you would lug nuts on a car, evenly. With an internal gear ratio of around 2.5:1 and most motors capable of 30,000 rpm, the spur gear will be spinning at close to 10,000 rpm so imbalance will create wobble.

Another time saving step already done with the kit is that the ball differentials come pre-assembled. If they weren't, it's a rather tedious job with tiny diff balls, washers, springs, and screws. For the daring ones, you can disassemble the diff and repack it with your diff oil of choice. But if you've never done that before, leave it as is, they will eventually need rebuilding anyway. **Step 4** shows how to assemble the differentials for the day in the future when you'll need to tackle the job.

Steps 5 and 6 are assembly of the front and rear differential cases. It's pretty straight-forward, and Yokomo even thought to apply thread locking compound to the screws that hold the drive gears onto the steel input shafts. It's not necessary to apply any oil or grease to the internal gears of the transmission case, but should you wish only use a couple drops of a light machine oil, the

gears are made of a self-lubricating compound.

Step 7 is a simple assembly of the steering bell crank. Part of this is threading the ball cups onto the turnbuckles, take care not to cross thread the cups ... it's easy to do.

By **Step 8** you'll start to



Pre-assembled diffs



Steering assembly

seen on other cars.

Step 9 is installation of the motor and pinion gear, get familiar with the process of removal, you'll likely be performing it regularly. Reason being is that the gearing of your motor is crucial to acceleration, top speed, and track layout. Running the wrong pinion gear could cause the motor, battery pack, and speed control to overheat, potentially causing damage. Yokomo included a 30 tooth pinion which is good for providing the acceleration and torque necessary for drifting, but not so good for top speed. Having an assortment of pinion gears would be a good future investment. No motor is included, but Yokomo provided to me one of their 21 turn Drift-spec motors which I installed.

Step 10 – install of the steering servo; **Step 11** – building front and rear camber links; and **Step 12** – install of shock towers are all relatively simple and well explained in the instructions.

Step 13 is assembly of the hub carriers and universal shafts. This is an area

where it pays to read the instructions before starting this step. Universals can be tricky to build, so just pay attention. When applying the grease to the joint, don't leave excess. It will just spin off when you run the car and attract dirt. Make sure to get the grease well down into the joint, spin it a few times, and then wipe off any excess with a rag. Also when assembling the front hub, do not overtighten the king pins. Tighten them right to the point where it's difficult to turn any further, then make sure the assembly is still free moving. If you feel any binding, loosen the king pin slightly. One of the tricks in building a fast car is making everything as free moving as possible. So for my car I polished all of my ball studs, a trick I've learned over the years. To do this I put the studs into a dremel, wrapped some 1500 grit sandpaper around the ball, and spun it for a few seconds. I then follow up with some polishing compound. The result is a shiny smooth ball (something the ladies will love) which in turn makes suspension movement the tiniest bit smoother. This isn't necessary by any means, but doesn't hurt to do.



Completed hub carrier

In **Step 15 and 16** you put these freshly built suspension members onto the chassis. For both front and rear you need to place the right size plastic spacers onto the suspension pins as detailed in the instructions. Don't think

see real progress as the transmission cases are both installed onto the chassis, and chassis braces are applied. Go ahead and give the chassis a twist, see just how strong it really is. It's easily as strong as some double deck graphite chassis I've



Chassis

pension movement the tiniest bit smoother. This isn't necessary by any means, but doesn't hurt to do.

Step 14 is install of the hub carriers onto the suspension arms. Again, make sure to carefully read the instructions and use the right holes for the pins and screws.

this isn't important, changing these spacers can dramatically affect the handling of your car, and is a method used by racers to tune for specific tracks. Unless you're an expert, it's best to stick with the recommended setup. Since these spacers come off a plastic parts tree, it's important to remove any little bits of flashing (old modelers term) from the pieces with a hobby knife. Flashing is that little bit of plastic left on the part when you break it off the tree – scrape it off with your knife, not doing so could cause some suspension binding ... and it's ugly to leave it on.

Step 17 is shock assembly, a tedious task with lots of small parts, but fortunately very well detailed in the instructions. When building the shocks I scratched my head many times wondering if I had missed something, why it didn't call for adding any oil to the shocks. It's obvious the shocks were designed to have oil in them, they have shock pistons and o-rings on the end, so why no oil? Well, a little tidbit I picked up from talking to Butch on the phone is that in testing Yokomo discovered that the car performed better in drift with no oil in the shocks, so none was included. You can however simply put shock oil in these shocks with the addition of a standard shock bladder. This will give you a little bit smoother suspension travel, and would make the car handle better for non-Drift use.

By now the car is pretty much complete. The remaining steps of body post and bumper installation is a no-brainer. **Step 22**, assembling the drift tires is not however. The tires and drift rings are very hard and don't like to bend. The first tire I assembled, I didn't follow the manual advice of soaking the tires first in hot water to soften them. Consequently I broke one of my drift rings trying to slip it onto the tire. So follow their advice, soften the tires before assembly, maybe even put a touch of light oil onto the tires to help the rings slide into place. Once assembled and installed onto the car, I moved on to finishing the lexan body shell.



Shock tower and shocks

bodyshell before, the trick is that you paint it from the inside. Then obviously since the plastic is clear, you see it fine and it stays somewhat protected. Another trick is that you MUCH use paint designed for lexan, not plastic



Hub carriers installed

Body Finishing:

This is the part where everyone gets to apply their own personal touches. For mine, I recreated the infamous metallic Barney purple of my '87 Turbo. If you've never painted a lexan



Completed chassis

model paints. The difference will be clear first time you ram into a curb at 20mph, the lexan paint will flex and stay on the body while the model paint will flake right off.

Prepping the shell is pretty simple, just wash it with soap and water then blow-dry it. Don't use a cloth or paper towel to dry it off, because you'll get lint that will end up sticking in your paint. After that, apply your pre-cut window masks to the inside of the shell. After that, my advice is to do things opposite of how I did them. I started painting the body next, but I think it would have been better for me to cut it out first. Reason being is that you will undoubtedly scratch your paint a bit doing it how I did. So cutout the wheel wells and body lines, then paint it.

For the actual paint I used a high-end Badger airbrush, but have also used rattle cans for paint in the past with good success. It just depends on what you have available to you. The Fascolor line of acrylic paints is very nice for this application though, and can only be used with an airbrush. You get unlimited color options, and they now have very cool prismatic and color-change effect paints. Spaz Stix is another relatively new line of paints with some incredible effects possible.

Once the body is painted, be patient. If you can, let the body dry overnight before peeling off the window masks and the clear protective layer on the outside of the shell. A full night for the paint to set will make it more durable and scratch resistant. The next step is to drill out the body post holes, and other holes for the spoiler and windshield wipers. It's recommended that you use a body reamer for this, but I didn't have one and just used a Dremel and drill bits. Just tap the hole with a small bit, then move up to a larger bit to get it the size that you need. Yokomo wisely put little dimples in the body molding in the exact spots where you need to drill any holes, this helps greatly in lining them up correctly.

The last step is by far my least favorite, cutting out and applying the decals.



All I can say is get a good x-acto knife and be patient. It's a tedious job, but doing it good is very important for the finishing touches of your body shell.

Next Month:

In February we'll actually run the car, install the electronics and see how this thing does on the street. In addition I'll be installing the hop-up parts that Butch from Yokomo sent me. I have a variety of things to test such as the one-ring drift tires, a hot 19 turn motor, Yokomo SCR-6712 electronic speed control, front one-way assembly, sway-bar kit, aluminum oil-filled shocks, and precision bearing kit to replace the stock bearings. I'll also put the car on a setup board designed for touring cars to precisely adjust the suspension, and explain how these changes affect the handling of the car.

Maybe if I'm lucky Yokomo will send me an Apexi FD3S body to finish and picture in the story as well. But one thing is for sure, my productivity level will certainly decrease over the coming months ... I've gotta practice my drifting and get this thing ready for the upcoming race season! **RX**

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