TheRcRacer TT-02F A Tamiya FWD Project for all

Anyone that reads this website will know I've always had a soft spot for racing Tamiya chassis. But one thing that's been missing for a while now is a proper, accessible Tamiya-based option for the FWD class.

Rather than waiting for Tamiya to release something, I thought I'd have a go at solving the problem myself.

The Idea

From the start, this wasn't about creating a high-end, complex race chassis. There are already plenty of those out there.

Instead, the goal was simple:

Create something affordable, accessible, and genuinely fun to race.

With that in mind, the TT-02 felt like the perfect base platform.

Why?

- It's cheap, some great offers out there and some retailers just sell the chassis in the bag.
- It has a huge range of option parts
- It's easy to build and maintain
- And most importantly… loads of people already have one

That last point is key. This needed to be something people could actually get involved with, I love the community of Tamiya racers, I want to make this very much something I can develop with feedback from you all.

Introducing the TT-02F

After a fair bit of tinkering (and plenty of help and input from friends along the way), I'm really pleased to finally share:

TheRcRacer TT-02F – a front wheel drive race conversion for the TT-02.

One of the main design goals was to keep things as simple and low-cost as possible.

So rather than redesigning the whole chassis, the focus was on making a minimal number of key changes that completely transform how the car works.

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(Check out the TRF419 in-depth build and review (Above) follow this link) So with the TRF419 being announced there has been a lot of di...

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Official cad image Tamiya has announced its new FWD chassis and for all of those that have followed the progress of the TRF417FF o...

In total, there are just three new parts:

1. Servo Plate
2. Front Shock Tower (There is one for the std kit, and one for the TYPE-S chassis)
3. Bumper (optional)

That's it.

SERVO PLATE

The servo plate is really the heart of the conversion.

It relocates the servo to the front of the chassis, mounting via:

- The two front screws on the upper bulkhead
- Two screws on the TT-02 bumper plate

This effectively moves the steering system to what would normally be considered the rear of the standard layout.

Because with FWD cars, front-end weight is everything.

Tamiya TT02 Build and Review

Fusion Hobbies recently delivered me a nice new TT02. Again it arrived quickly and well packaged with the great customer support and go...

RANDOM POSTS


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Tamiya TT02 First pics


Tamiya TRF417V5 has arrived!

ARTICLE ARCHIVE

May (5)

OTHER THINGS

This layout:

- Places more mass over the driven wheels
- Positions the motor effectively at the “front” of the car
- Improves traction and stability under power

As a bonus, by changing the steering set-up it also results in a much sharper and more direct steering feel compared to the standard TT-02 setup. I tried several steering solutions, including a vertical servo, however this was not great for steering feel.

FRONT TOWER

The shock tower mounts from above onto the rear of the front bulkhead, over the A2 part.

This does a couple of important things:

- Moves the shocks further inboard, similar to modern touring car designs
- Improves front-end response and consistency
- Helps create a more controlled roll characteristic

This part has gone through quite a few iterations to find a position that:

- Works well dynamically
- Doesn’t interfere with the front wheels
- Still fits within the constraints of the TT-02 layout

Yes this damper holder looks quite basic, but at the moment I want to ensure it works well in all scenarios. There’s definitely still room for refinement here, and that’s where wider testing will really help. Once it's locked down I can refine the aesthetics and make it look pretty.

BUMPER (Optional)

The bumper is optional, but recommended. *(Print in TPU and set the walls to 10) so it doesn't infill)*

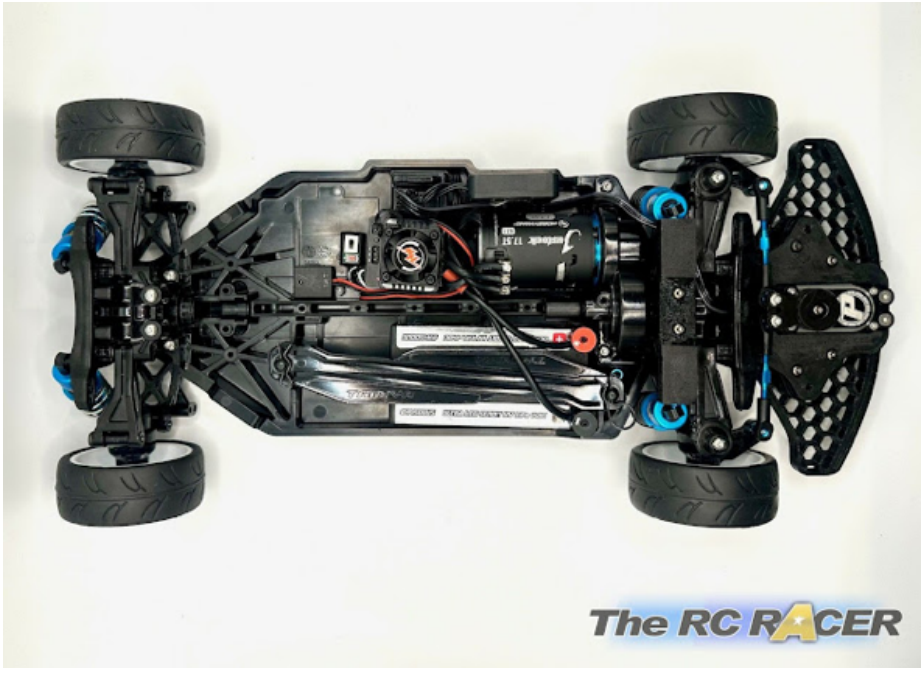
If you want to keep things ultra simple, you can:

- Run a standard foam bumper
- Cut a small clearance section for the servo, and the weights.

However, the 3D printed bumper:

- Adds a bit more protection
- Keeps everything a bit neater and more integrated

So three new parts is all that is needed for the the Whole Conversion, and that's really the point.

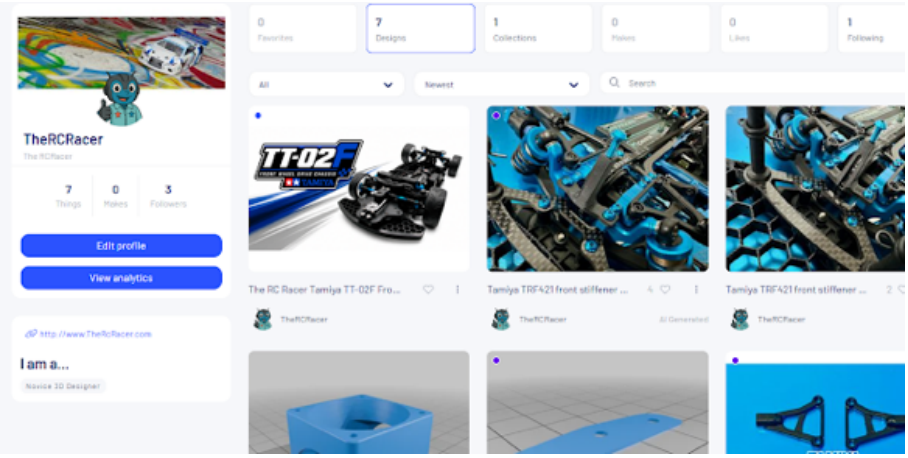


Three parts. One chassis. A completely different driving experience.

No complicated builds. No expensive upgrades required. Just a simple, effective way to get a TT-02 onto the FWD grid.

DOWNLOAD NOW AND GET INVOLVED

So now it's the best part, you can try this for yourself.



Click image to go to download page

All of the parts are available to download from TheRcRacer Thingiverse page, so you can build one, run it, and see what you think.

Test it. Break it. Improve it. Share feedback. Try different setups. Push it further and I will refine the parts.

At the track.

Even at this early stage, I'm pleased to say the TT-02F was surprisingly competent. The whole idea behind the project was to build something I could line up against friends running Schumacher kit and similar, and it was genuinely cool to drop a Tamiya on the carpet and just get racing.

It's been a while since I've raced FWD. M-chassis gives you a flavour of it, but these cars do have a different feel. That said, I managed to get into the groove pretty quickly. The TT-02F was incredibly easy to drive very stable and predictable, even running the kit rear hubs with minimal toe-in.

In fact, the main challenge was almost the opposite the car was too stable. As my confidence grew, I started looking for more rotation, but I didn't have the right springs with me to really dial that in.

Even so, the pace wasn't far off. By the end of the night, I was only around three seconds behind P2, who was running an FT8. Afterwards, it became clear I was off on the FDR, and I also got some solid recommendations on springs to try.

Plenty to build on.. but importantly it was a very good introduction to the TT-02F :)

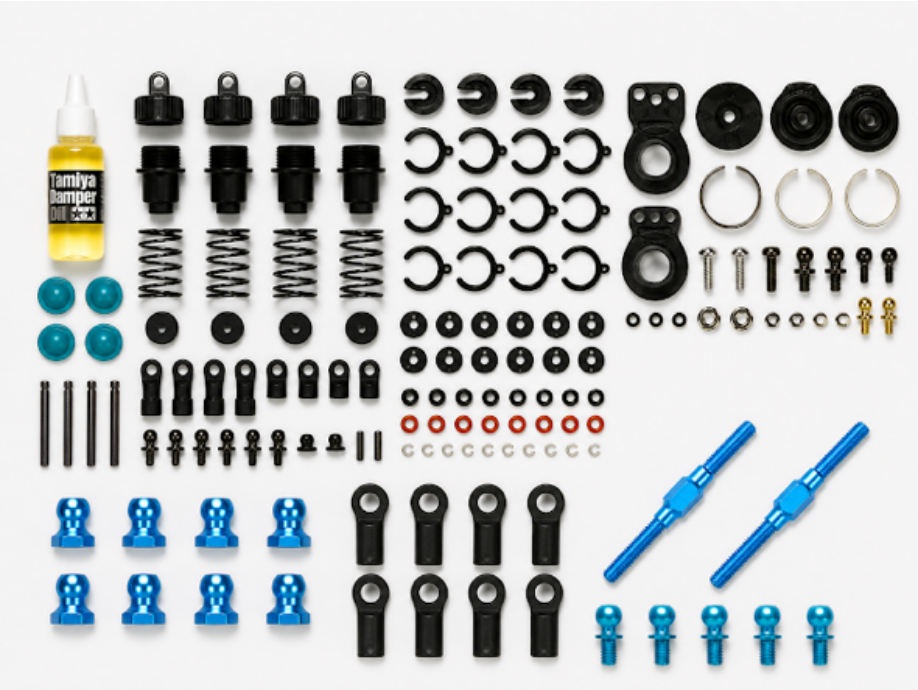
Assembly instructions.

I wont go into how to build a TT02 here. This is just detail for the TT02F specific parts.

** NOTE ** you need a low profile servo.

The first thing to remember, its that the front of the TT02F is actually built at the rear of the conventional TT02 chassis.

Note, this kit should work on all onroad TT02 chassis variants including the TYPE-S cars. The main difference is that you will need to drill a hole for the suspension arms on the Std TT-02 but the TT02-S will be fine.



These are the parts needed to build a TT02F, I used Tamiya parts as they are easily available, good quality and cheap.

- 1 x Tamiya 51000 Hi-Torque servo saver set
- 1 x Tamiya 54249 Aluminium 32mm turnbuckles for a std TT-02 /R /D /RR
- *1 x Tamiya 54250 Aluminium 42mm turnbuckles for a TT-02 Type S/SR/SRX*
- 1 x Tamiya 54869 Open face 5mm adjusters
- 1 x Tamiya 53640 5mm Aluminium Ball Nut (or 53599 or 19804206)
- 1 x Tamiya 53907 5x8mm Alu hex ball connector. (or 53569 or 54208).
- 1 x Tamiya 54753 TT-02 CVA super mini shock set. (I used some TRF shocks I had spare).
- Various screws (I will call them out in the build).

Nice additions

- 1 x Tamiya 53539 Aluminium spacer set for adjustability. (The 3d files will have have default spacers included).
- 1 x Tamiya 54500 High speed gear set (This allows you more flexibility with gearing).
- Front Universals.. I have only raced this car with front universals.

Also remember this a TT02 based conversion, you can add loads more hop-ups as you go along..

FRONT SERVO PLATE

If you have the 3Dbumper, you want to slide it over the TT02 lower bumper mount now before installing the plate.

Tamiya Hi-Torque servo, you need two 8mm m3 screws to attach a 3mm spacer and the ball nuts to the servo saver on the underside.

Next up you want to make the two turnbuckles. I have a 19mm gap to provide a good amount of toe-out for the steering. Attach these turnbuckles to the servo saver

You next want to attach the low profile servo to the plate. There is 4mm of plastic for the screws to grip onto, this seems fine, but if you want there is space below the servo player to use m3 nuts to attach the servo even more firmly into the plate. (Note, I will offer a carbon version from Fibre lyte at some point soon).

There are two additional screw holes to add circular brass weights. I used two 20g weights here and attached them. These weights are for tuning the handling.

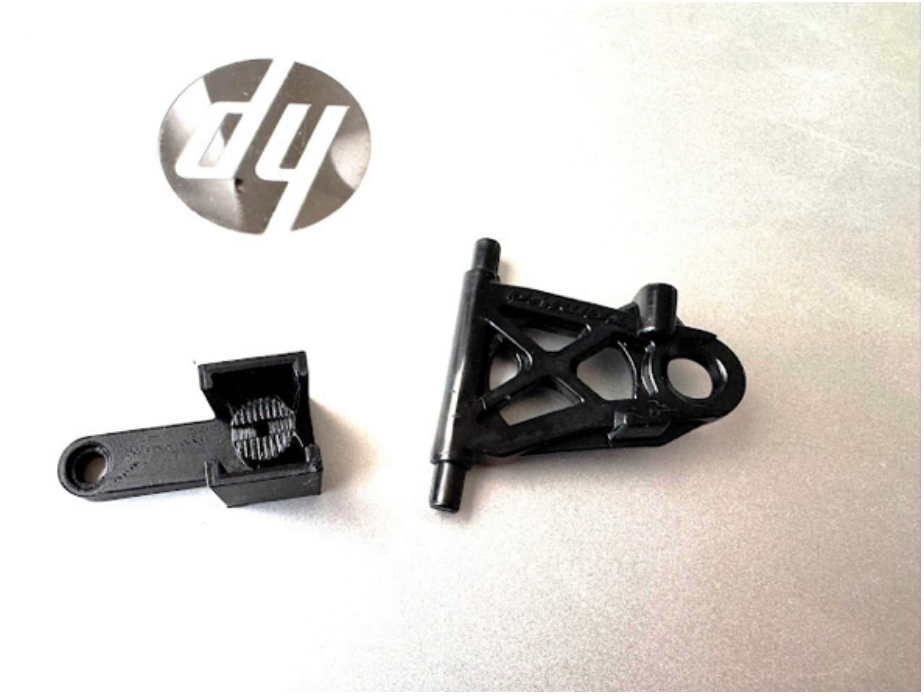
With the servo installed you want to use two 14mm screws to attach the plate to the front bulkhead.

Attach the plate to the lower bumper mount with two 10mm screws..

Whilst here I also trimmed the bulkhead so I could feed the servo wire through.

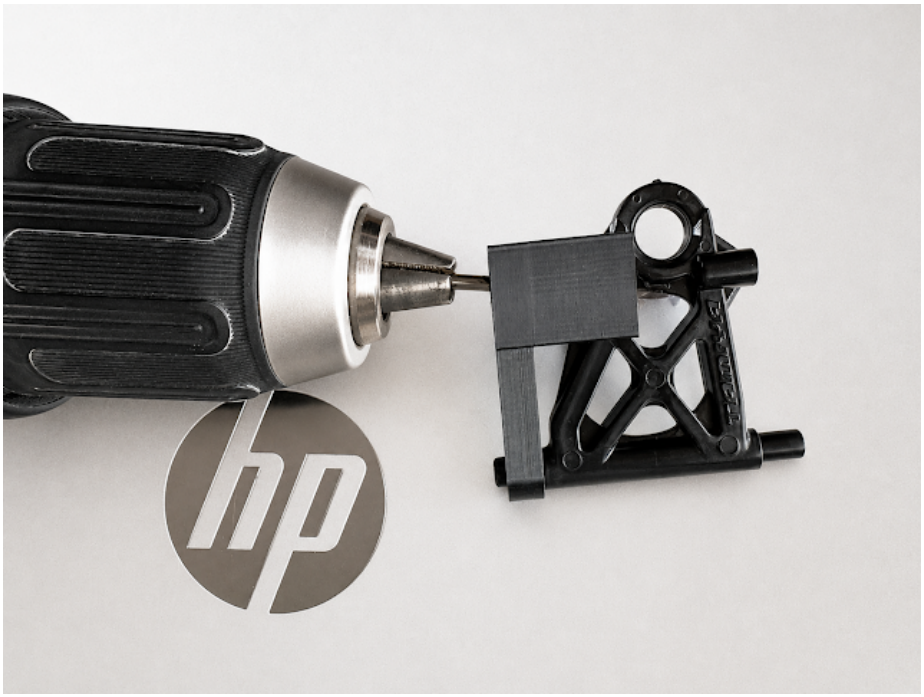
SUSPENSION

The TT02 upper arms need the steering stops trimming (Not an issue on the TT02-S). I just used some pliers to cut mine off, it's very easy as the plastic is quite soft.



The lower front arms need you to drill a 2.5mm hole in the steering stopper. Included in the files is a Jig that allows you to perfectly drill the hole.

You slide the jig over to align the drill hole



Now drill away. (I actually use a pin vice hand drill).

Then attach the 3mm spacer and the 8mm hex head ball connector. Make two of these, this is the single most difficult step.

If you are using a TT02-S for the donor chassis, you can just attach the ball connector and spacer in the front arm. (Note you want hole 4 which is the most outward position).

Assemble the suspension but with the front hubs facing the opposite way, towards the servo.

You now want to use 14mm screws to fit the ball nuts and 4mm of spacers. (Note you can change the amount of spacers to tune Bump steer). Also trim the steering stoppers off the uprights to stop potential binding on full lock.. (Again this should not be an issue on the TT02-S

Important, you want to mount the ball nut on the inner hole of the upright (On both the TT02 and TT02 TYPE-S). This is important for the Ackerman design for the steering.

Use two m3 16mm screws to attach the shock tower over the a2 part and screw it

into the bulkhead.

Now add the hex ball connectors. I would suggest 1mm as a starting spacer, but you can add or remove these to change the damper angle.

Other things of note:

- I put some diff putty in the differential. It still has some diff action, but not a lot.
- The diff can be placed right or left for Clockwise or counter clockwise rotation.
- I recommend 7mm wheel Hex's (There are some included in the print file).
- The rear of the car has no diff, just the wheel axles spinning in bearings.

With that in place, you now have your own TT02F..

Joint the community

Here is the Facebook group for the TT02F conversion to help share info on your

builds and issues.
Tamiya TT02F community link

Bodyshells

As you can see the conversion has the servo out at the front of the car. This obviously will give a certain amount of overhang at the front. At the moment I have tried two shells and they have both been fine.

Tamiya Mazda 3.. There is lots of extra room here.
Tamiya VW Scirocco GT
Blitz YRS. This also fits. It is quite snug at the front, but is does fit (This is a very popular shell for Frontie cars, I have been told I should have mounted it more forward as that is what the fast guys do, so it should have even more space).

More links

The PetitRC Tamiya TT-02F Home page (Click Here)
Editable Setting sheet (TT-02F) Click here
Editable Setting sheet (TT-02F TypeS) Click here

Help develop more parts

If you appreciate the non profit work I have done, please feel free to tip me to help me to afford to develop more parts. You can make a safe Tip by clicking this link https://www.buymeacoffee.com/TheRcRacer

Disclaimer and thanksThese have been made as a contribution to the Tamiya racing community. There is no profit for myself

As mentioned before, these are a community project which I have invested in designing and manufacturing for my fellow racers, so please let's share feedback and set-ups and I can try to refine or design other parts in the future :)

Featured, New, tamiya, thercracer, TT02, TT02F

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