

HO Rail Dragster

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How to Build a HO Rail Dragster

by Paul Shoemaker



I have always had a love for the high horse power nitro burning dragsters that I got to see at the local track during those hot summers of the past. Seeing the rails lift their wheels and scream down the quarter in the wink of an eye, the smell of rubber and fumes and smoke as they blow on by.

No one really built any rails in HO with the exception of the 4 dragsters that Aurora AFX came out with in the early 70's. Those were based on the wedge and Dodge Fever designs. Although they are very good in appearance, the chassis was built using the 4-gear Specialty AFX chassis and was never a "performance" package.

The basis of this chassis design originally came from a gentleman I used to race with years ago. Tom O'Riley designed and created this chassis in the early 70's and refined the design about 10 years later. Taking his ideas to the next stage I updated the chassis components to what was then Tomy's new Turbo Car. Most of this design is still Tom's original vision. Any inline chassis can be used for the rear component so let your imagination go from there. The assembly is fairly simple, you just need some basic soldering techniques and lots of patience to let each stage complete as you assemble the parts.

Building the Rail

Here is the list of parts you will need to assemble what I picture in this article. Some of these components may be scarce, like the old Tyco Pro guide and wipers. I still have quite a supply of "antique parts" but there are several new items out there that will work. One suggestion is to use braid instead of wipers for the pickup system. Also of

note, the plans do not originally specify the roll cage assembly.

I have added that phase into the instructions as well, but it can be left out if not wanted.

Parts

K&S Brass

1/16th Inch Rod 1 Piece

1/16th Inch Tube 1 Piece

1/8th Inch Tube 1 Piece

1/2 Inch x .010 Plate 1 Piece

Other Parts

Tomy Turbo Car Rolling Chassis

AJ's Front Wheels

American Line Drag Slicks

No Acid Flux, Solder, Etc

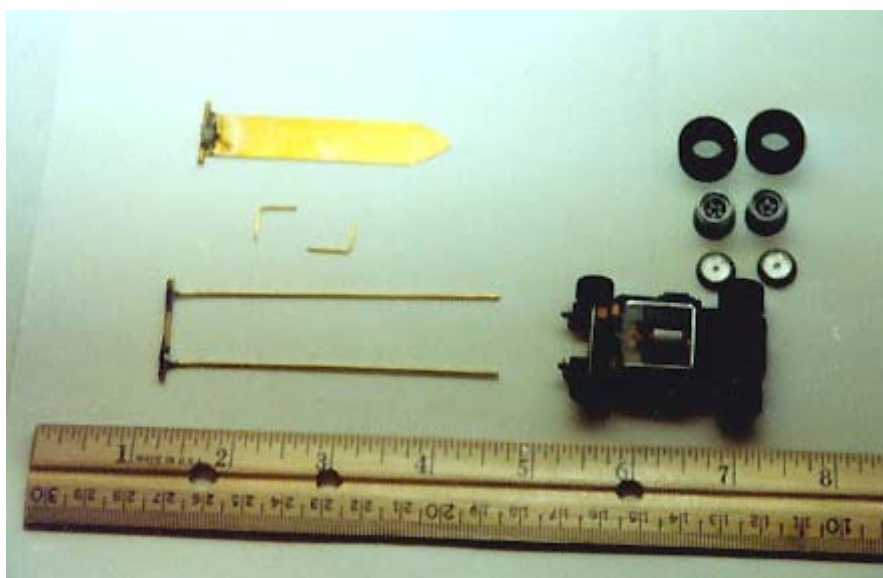
Light Gauge Wire 10 Inches Lead Weight

Tyco Pro Guide Flag 1

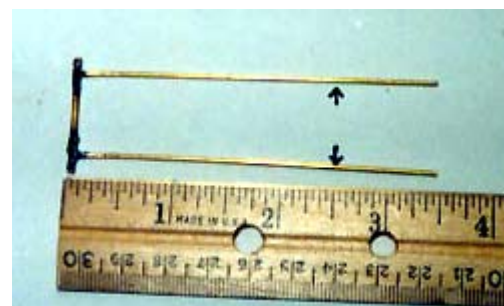
Pickup/Wiper Material

AFX Rear Dragster Wheels 1 Pair

Lexan or plastic sheet for body



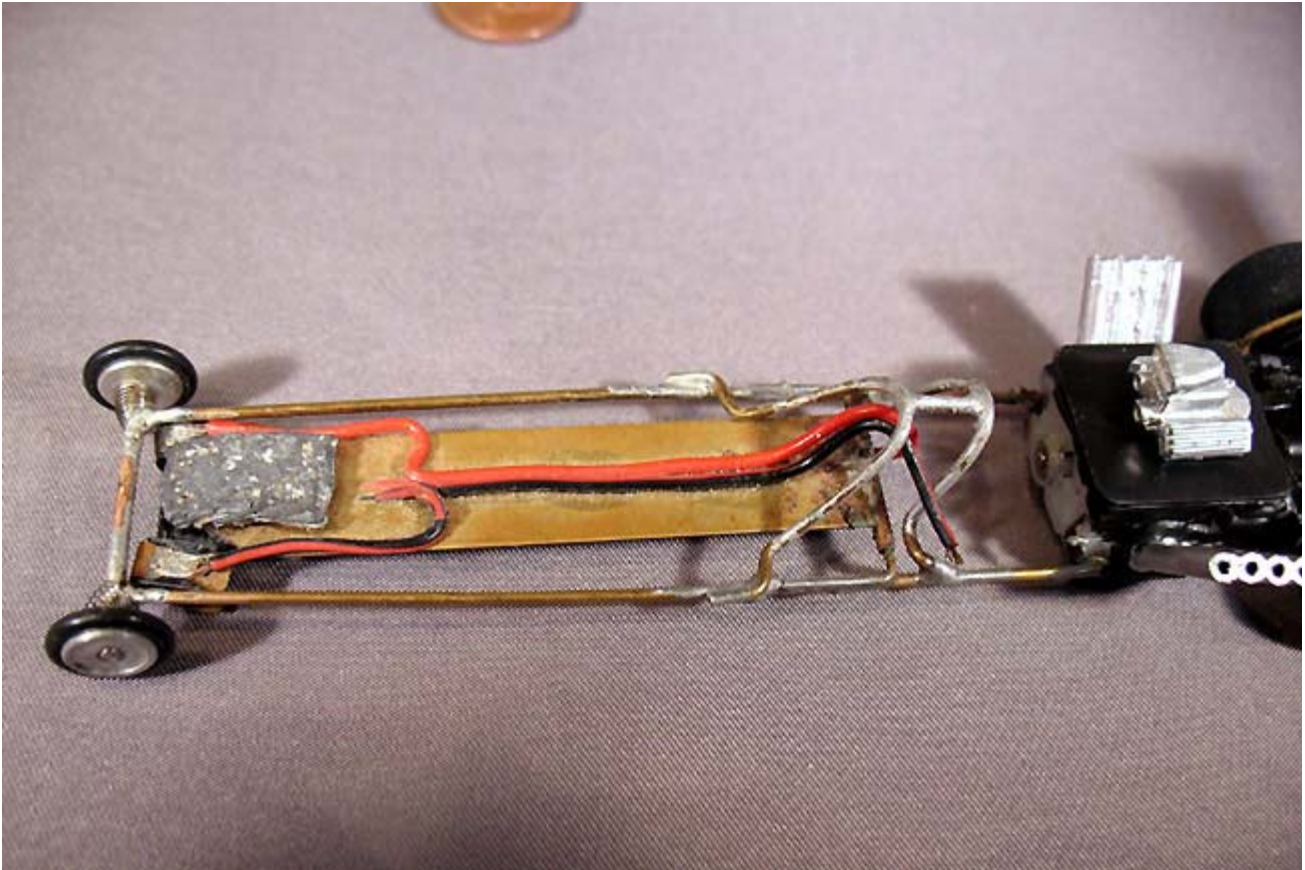
Cut two 3 ½ inch pieces of 1/16th inch brass rod and one 1 1/8th inch piece of 1/8th tube. Solder the 3 ½” rods to the ends 1 1/8th” tube at 90° leaving at least 1/16th space on each end. Make sure you do not solder over the tube ends. This will cover the where the axles go.



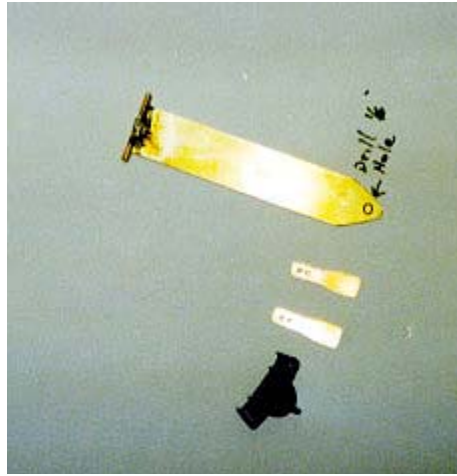


Cut two pieces of 1/32nd Inch rod $\frac{3}{4}$ inch long. Bend each piece in a 90 degree angle as in picture #1. Solder these on the units near the 2 $\frac{1}{2}$ " mark (arrows in picture 2) facing each other. These will become the hinges for the drop arm/pickup mechanism.

Cut and bend three pieces of 1/16th" tubing to create the shapes for the roll bar. I found it easier to solder the front and rear sections to the rail assembly first and then solder the connection between them. This step is optional, but does add some rigidity to the chassis. So if you are not going to include a roll cage, cut a single piece of 1/16th " rod and bend it to shape and solder it just behind where the drop arm will start, closer to the motor can.



Cut a section of brass plate 2 $\frac{1}{2}$ " long and shape one end to a rounded point.



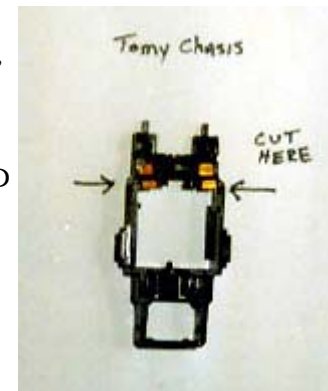
Cut a piece of 1/16th inch tubing 5/8th" long. Center and solder the tubing to the plate's square end. Keep this solder joint square and level to the edge of the plate. This will ensure the swing arm moves without binding. See picture above.

On the end of the plate that has been rounded over, drill a 1/16th hole for the guide flag. Using the Tyco Pro guide flag, insert it into the hole to test fit. After making sure it sets level, remove and reinstall it, making sure it is square and level using JB Weld to hold in place. This car won't be turning any corners and a rigid guide will help reduce drag in the slot. See picture above.

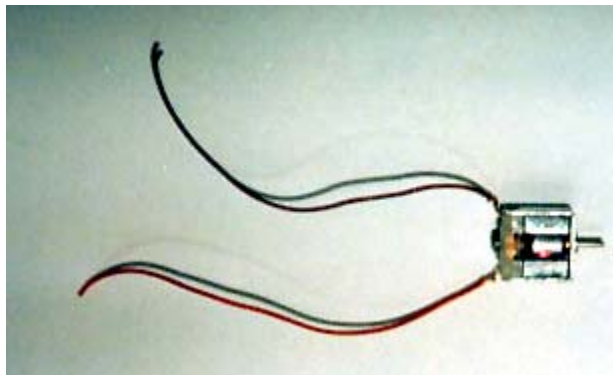
You can now slide the angled pieces on the assembly into the drop arm tube. Oil lightly and test the motion making sure nothing binds. See Picture above.

Take the Tomy Turbo Chassis (or whatever your choice is) and strip the chassis bare of parts. In the case of the Tomy chassis, I cut the chassis just in front of the rear bulkhead, removing the side pieces as well. See picture at right.

Then using JB Weld, I glued the can motor to the rear bulkhead making sure that the motor was aligned. Take your time on this part of the process. **DO NOT GET JB WELD IN OR ON THE MOTOR BEARING OR ARMATURE!** Let set overnight to completely dry!

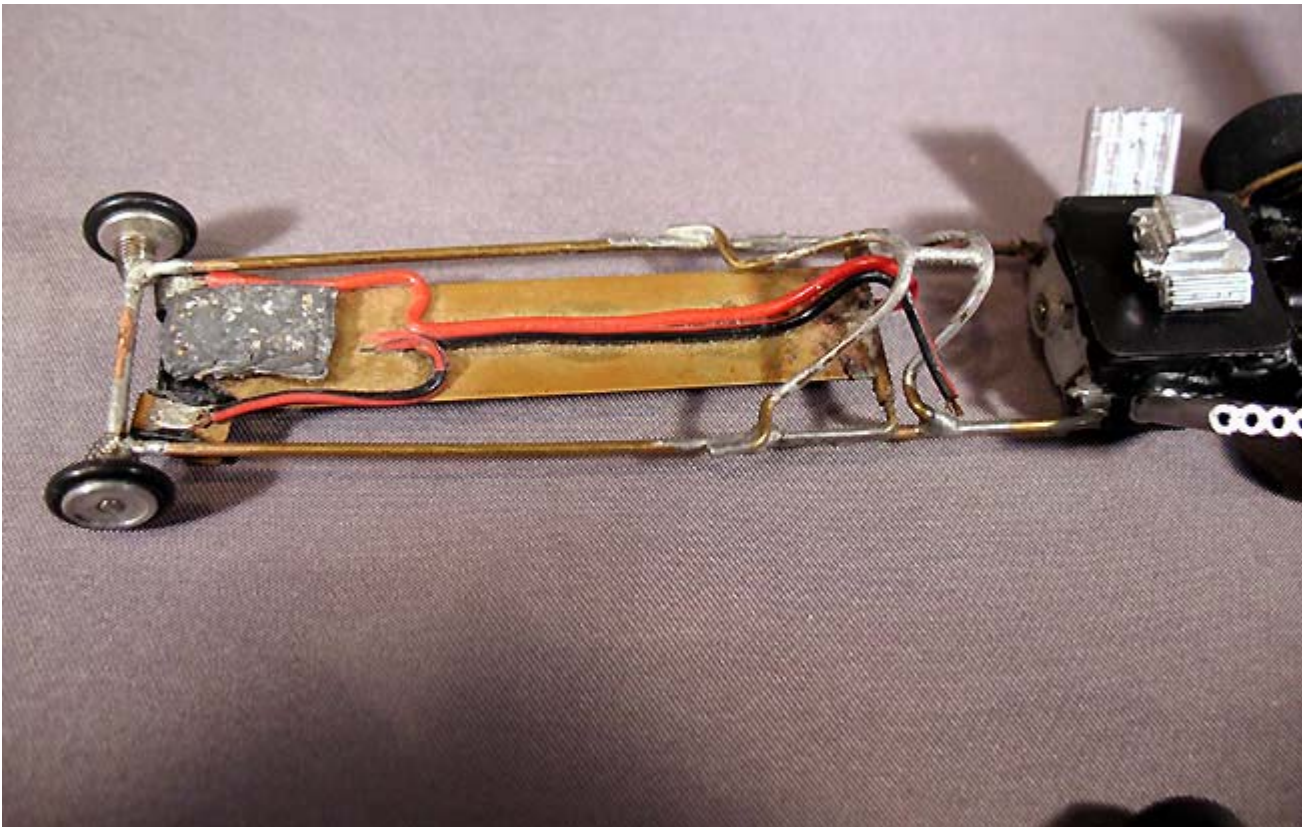


After the Chassis has set overnight, take your light gauge wire and solder one lead to each of the tabs on the can motor. Leave extra wire so you do not have to splice in any later if you leave it too short.



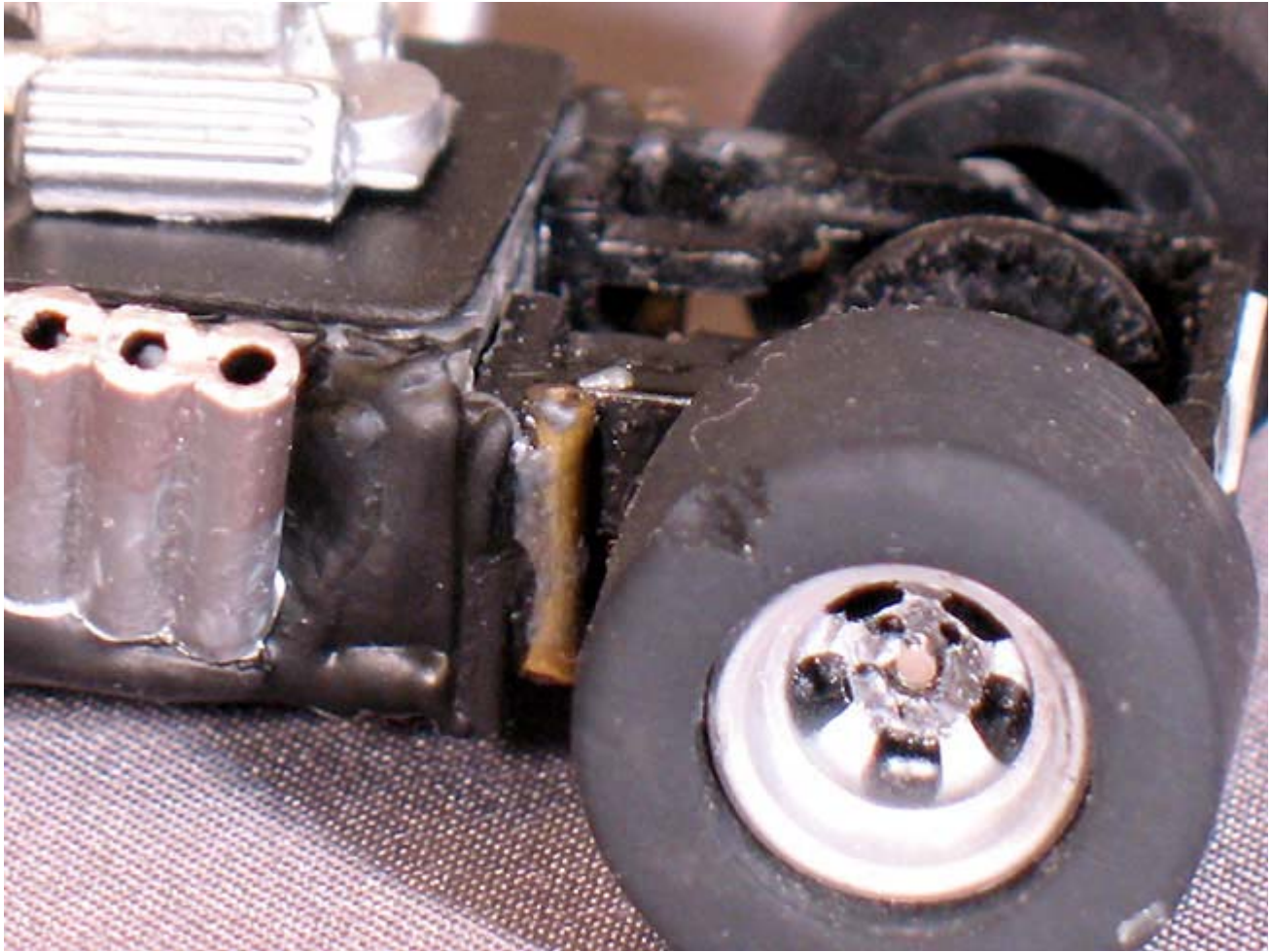
Now the tricky part, assembling the brass rail and the Tomy chassis. It's actually pretty simple, but take your time in this step. Square and level application pays off in better appearance and performance of the car itself. Get the JB Weld out again for this step. I apply a good layer to the side of the motor can just above the bottom edge. Once again be careful where the glue goes. Once you have that layer, I fit the rail assembly over the motor can, embedding the brass rod into the glue. Make sure you keep your frame as square and level as possible. It is easy for this to twist and that can result in wheels or pickup not contacting well. After I see the frame is where I want it, I add a bit more JB Weld making sure I coated the rails at the motor can. Once again let set overnight to make sure it is completely dry.

It's the next day and it's looking good! Everything should be dry and ready to work with. The next step is to finish the electrical parts. Start by measuring how much wire you have from the motor can to the pickup guide. I like to leave a 1/2 inch extra just in case. Strip a bit of the wire and solder the pickups to the wire. Then slide the pickup/wire assembly into the guide flag. I then test the connection with a 9 volt battery to make sure everything is getting power. Then I glue the wire down to the drop arm plate so it doesn't interfere with the body and stays in place. Super glue works fine for this and is easily removed if the wire needs to be replaced at a later date.

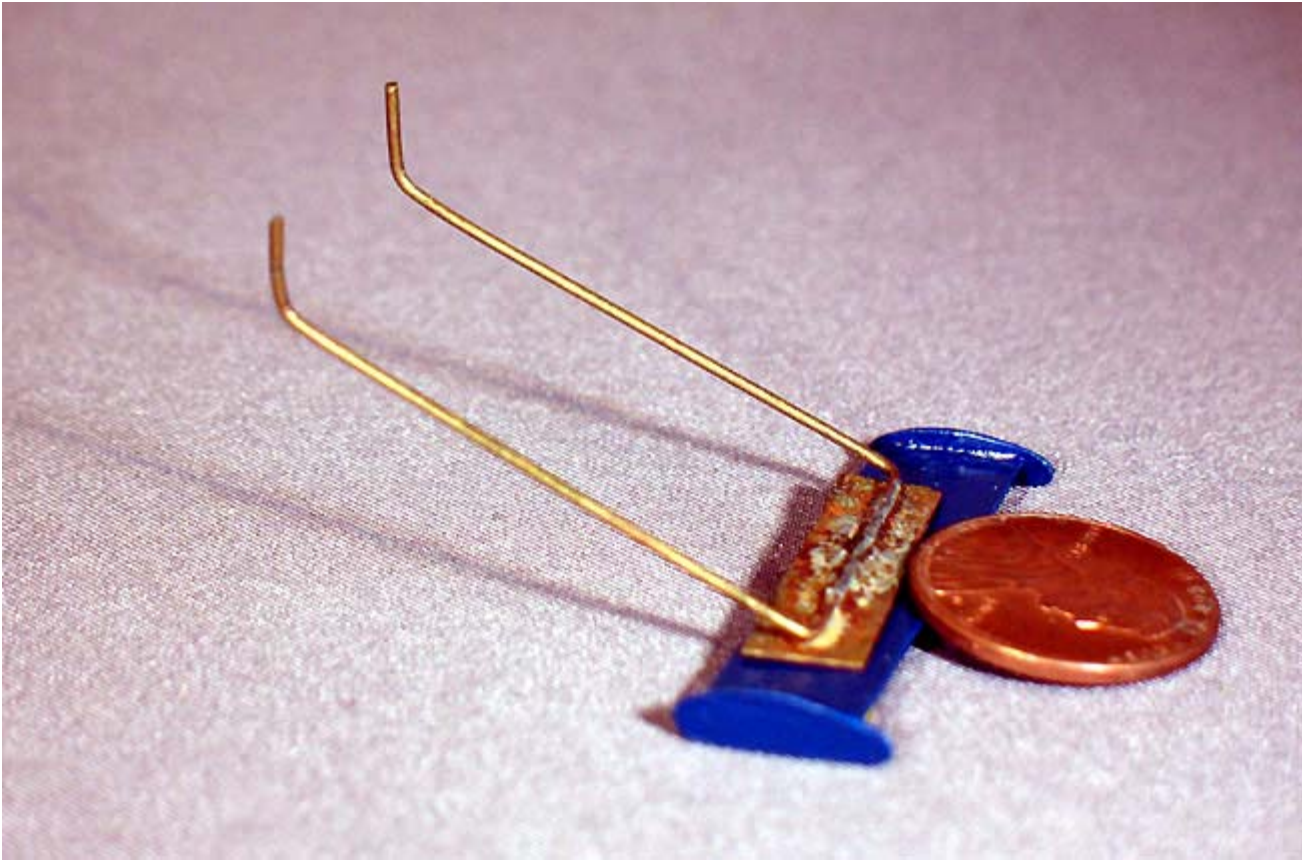


I used the AJ's 0089 wheel set for the front wheels and straight pins for the axles. I placed old pickup springs over each of the ends of the front axle tube to act as spacers, slid the AJ's wheels on and used a slightly bent straight pin to retain the axle.

The rear wheel assembly consists of an AFX rear axle and Dragster rear wheel set and the Tomy standard crown gear and pinion. American Line Drag slicks are used to get the power to the road. The Dragster wheels usually have a wider flange that makes the tires distort. You will have to sand/grind that flange down to accommodate the wider drag tires.



The rear wing assembly is made from two 1/16th" tubes cut 3/8th" long and glued to the rear of the chassis. Cut a 5/16" long 1/32th rod and bend it to shape for the rear wig struts. Once again this is a tension fit piece so you can remove it for storage.

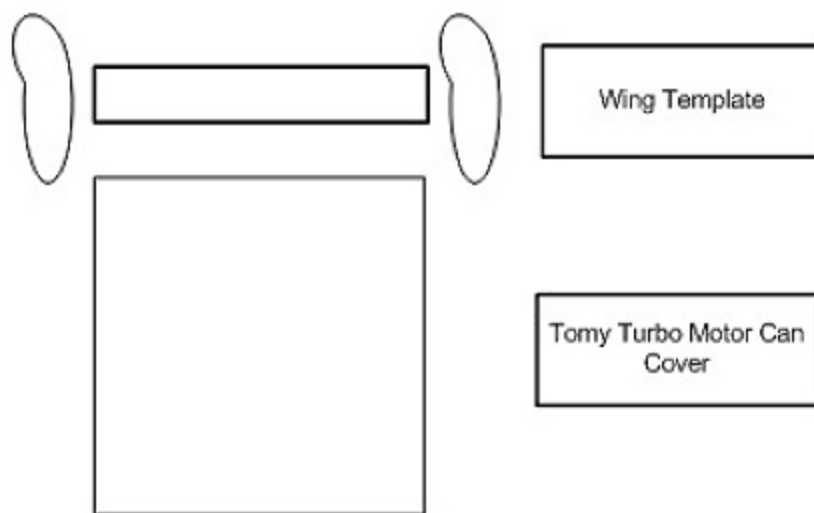
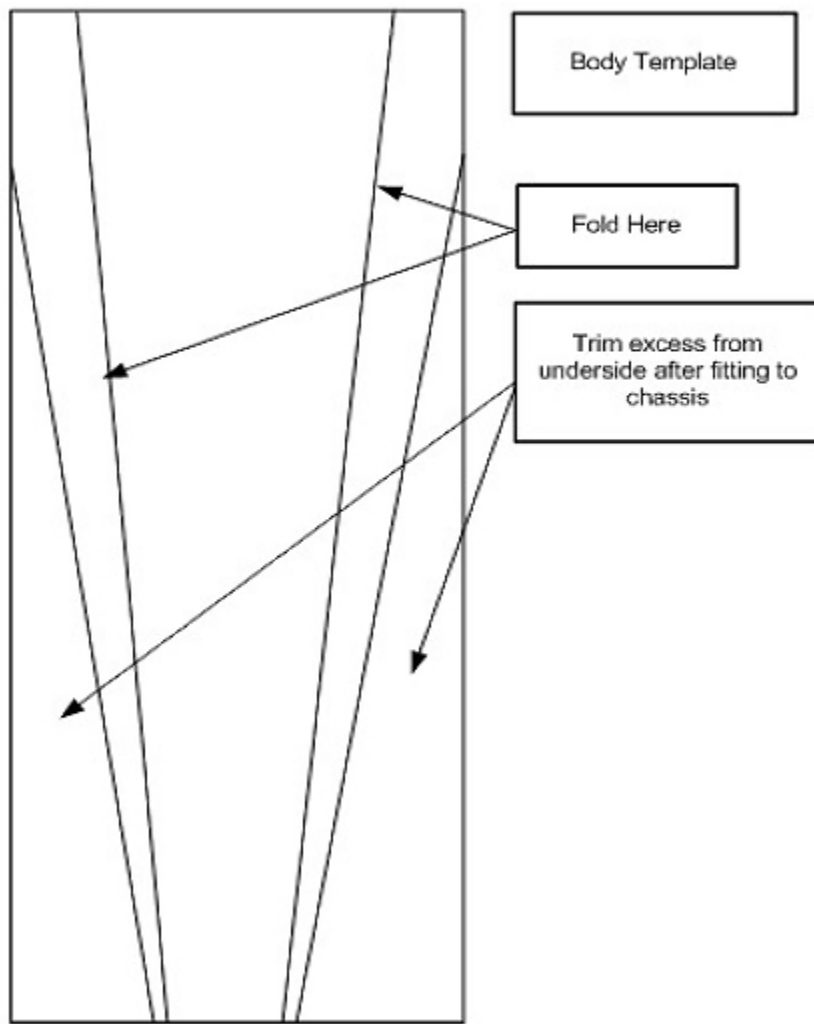


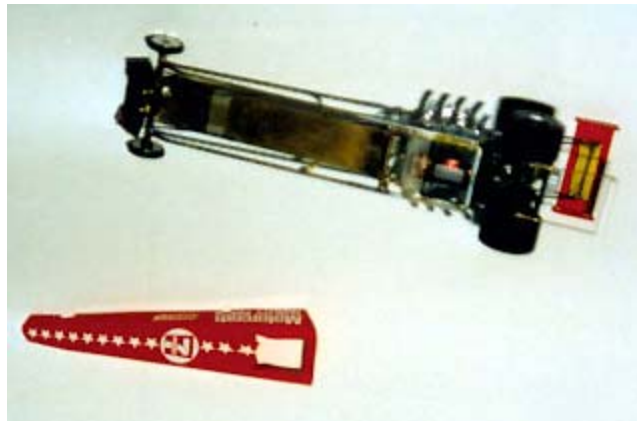
The body and wings are made from sheet plastic. I used styrene for the rear wing assembly and the body of fashioned from a piece of .007 Lexan that was simply folded over to the pattern below. After painting, glue the rear wing to the strut assembly and let dry. I use super glue for this step. JB Weld holds too well, and it's easier to re-glue the wing than replace the struts in the event of an accident. I use double sided foam tape to secure the body. It's light and easily worked with and holds everything down where you want it to be. See Wing Template below.

The motor can is covered by a piece of styrene cut to shape and super glued. The engine is pirated from die cast car and the exhaust pipes are 1/16th Plastruct tubing cut and shaped. All assembled with super glue.



Templates and more pictures







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