Shown here is an exploded view of an AFX Super G-Plus chassis. There are a few parts on here that have different names that might be confusing when you're looking for a part to order. I listed other names for the ones that I've noticed that could cause confusion.

- Brush Housing = Endbell
- Motor Brace = Timing Bracket
- Rotor = Armature
- Magnet Retainer = Magnet Clip
- Busses = Pick Up Shoe Holders
- Ground Effect Magnets = Traction Magnets
- Body Retainer = Body Clip
Tools used in my build are:

Small Screwdriver
Motor Assembly Tool (AFX)
Wheel Press
Wheel Puller
X-acto Knife
Tooth Pick
Dremel with cut off wheel and wire brush

Now that the parts, tools and rules list are out of the way. Lets get started. If this is your first time working with a G-Plus, take your time. Ask questions if your not sure about something. This car I’m about to build is nothing special. There are no special custom parts that are not available to you. All the parts can be purchased through Lucky Bob’s and Scale Auto. Follow these steps in building and use the same parts and you’ll have a MM/PS that will be competitive. There are tricks that we all learn along the way in any heads up class and I’ll be sure to pass along any info I come across in this thread.

First thing we want to do is snap the rear axle out of the chassis. This is done by pushing down on one of the rear tires/wheel. Once you have one side out of the chassis. Push on the other tire/wheel to remove the rear axle assembly from the chassis.

Next we will be removing the Traction magnet clip. This is done by taking a small screwdriver and pushing one side of the clip away from the traction magnet.
Picture before removing traction magnet clip

After pushing one side off

Once you get one side off you can lift up and towards the opposite side to remove the clip from the chassis
Now your traction will come out with ease. Pull the magnet away from the chassis.

To remove the motor assembly we need to insert a small flat head screwdriver between the motor magnet and chassis. Only spread the chassis apart enough so the timing bracket tab clears the chassis. Once the tab clears, push the motor up from the bottom. The Armature, both motor magnets, timing bracket, rear bushing, pinion gear and endbell will come out together.

Screwdriver between motor magnet and chassis
After pushing the motor assembly up from the bottom

Pull your motor magnets away from the armature and set them aside. Now get out your motor assembly tool (part #28852). Insert the tool in the slots in front of the endbell and turn the tool counter clockwise. This will spread the motor brushes away from the commutator allowing you to pull your armature out of the endbell assembly without damaging the motor brushes.

Here is some more info on the motor assembly tool.
http://www.psychoslots.com/index.cgi?board=tdrt&action=display&thread=797
Insert your motor tool from the front. I forgot to tell you guys that this thread is PG-13. Kids, get your parents to read along with you ok? 😆

Your car should look like this now
Time for your new Armature.
Any of these two Armatures are great choices for this class.
Ohms 2.7 to 2.9

BSRT145--------High Power Can Motor

If you don't want to mess around with taking the can apart then get one of these just released Armatures for the Super G-Plus. The only one I have ohms out at 2.9

BSRT140--------G+, G3 & G3R HIGH POWER ARMATURE

Skip this area if you bought the BSRT140 Armature.

I drew some blue arrows on the endbell where I will be cutting using a Dremel with a cut off tool. Think safety when you use power tools. Wear safety glasses or goggles
to protect your eyes from flying debris.

Blue arrows indicate where to cut

Cuts made
Pull the endbell off. I use the motor assembly tool here also to prevent any damage to the comutator when pulling the endbell off.

**Prepping your Endbell.**

If you bought a Pre-Tweaked Endbell #HT092 or HT092S. You can skip the first tip.

Here are some tips from HO Slot Car Journal #9. If you want to save $5 then take a look at this tip on tweaking your own Endbell.

> Not only will it allow you to easily remove the armature from the endbell, it will also allow you to tweak the tension on the brush leaf springs. You merely place the tool in the endbell and turn it just enough so the brushes are separated from each other. While holding the leaf springs in this position, grab a BSRT screwdriver (or equivalent) and apply pressure to the leaf spring right by the brush. Go easy. This is where a delicate touch and practice comes in. How much of a bend should you make? Like most things in life, moderation is the key. Don’t crank in too much brush tension. You’ll not only have premature brush wear you’ll also be increasing the chances one of the leaf springs will crack where the bend is located. Once you’ve tweaked the first one, work on the second and keep in mind that you’ll want to increase the tension on both brushes the same amount. When you’re done, you should end up with the brushes sitting half-way against each other (see Figure B). Feel free to experiment with this but keep in mind that, the more you increase the brush tension, the shorter the life of your brushes.
you should end up with the brushes sitting half-way against each other (see Figure B). Feel free to experiment with this but keep in mind that, the more you increase the brush tension, the shorter the life of your brushes.

INCREASE BEND HERE

UNMODIFIED

MAKE IT LOOK LIKE THIS

MODIFIED

Figure B
Another Endbell tip from the HO Slot Car Journal. Arching the thin tab that comes in contact with the pick up shoe holder allows for a better electrical contact surface. I place a X-acto knife between the thin tab and Endbell and push down on the thin tab with a small screwdriver.

![Diagram of contact surface improvement](image)

The next tweak is perhaps the most difficult. The Super G+ endbell does away with the usual brush and spring set-up

Re-assemble

One last thing to take off of the chassis that will make the motor assembly installation go easier. With the pick up shoes installed the pick up shoe springs puts pressure on the pick up shoe holders pushing them rearward. This leaves little room for the motor assembly to fit.
Take a toothpick and push down on the pick up shoe where it contacts the pick up shoe holder. Push down and forward. This will allow the pick up shoe to clear the hanger. Remove the pick up shoes and also the pick up shoe springs.

Timing Bracket. Make sure the tabs on the side are on top. This side of the Timing Bracket shown will go against the Endbell.
More pictures showing the correct side of the Timing Bracket that mounts to the Endbell

and put together
Take your rear Armature bushing off of your old Armature and place it on your new one. Go ahead and add your new 8 tooth pinion gear as well to help hold the rear bushing on. Line up your Armature, Timing Bracket and Endbell. Place your Timing Bracket on your Endbell. Get your motor assembly tool and spread your motor brushes apart then insert your Armature.
The next step we will install the motor assembly and shim the slop out of the Armature.

**Shimming the Armature**

Place your motor assembly on top of the chassis. Make sure your pick up shoe holders are out of the way. When you push the Motor assembly down in the chassis you need to make sure the rear bushing is lined up to drop back into position in the chassis. This picture is not the same car. There's no pinion gear on this one.
Once the motor assembly is in place. Take your finger and check the slop in the armature's by moving it forward and rearward. If there is slop then take your red washers off of your old armature and place them on your new one. Taking slop out helps in two ways. When power is applied the armature will move taking up a little energy that could of gone directly to the gears. How much? probably not measurable but still enough for me to want to shim the armature as much as possible. Also if the armature is not shimmed then the motor brushes will ride back and fourth on the commutator. I feel it’s best to keep the brushes riding in one spot. Shimming requires you to take the motor assembly in and out a few times to get the right amount. Make sure your armature turns freely and has a little back and fourth play.
Installing the motor for the final time

Install your motor magnets. The magnet with white paint on it goes on the passenger side of the chassis.

Same method as before but you have magnets to put in place with the rest of the motor assembly.
**Pick Up Shoes/ Shunts**

Install your pick up springs and pick up shoes.

Cut your shunt wire to length. Install one side through the pick up shoe and loop the wire through.

Twist the end
Place the other end between the Endbell and pick up shoe holder. I use a toothpick or a dull X-Acto knife to push it down between the two.

**Wheel Press and Puller**

This is a much easier way of pulling off wheels and pressing on gears to your rear axle. Ragu, if you can't get the wheels and gear on then go ahead and send it apart and I'll get them on for you for the race. Same goes for anybody else having problems. If you just getting into racing then check out these tools. They will save you some pain for your fingers as well as some frustration. I show a press and puller from Lucky Bob's. There are other pullers and presses floating around the web. Do a google search for HO Slot car wheel press and puller and see what you come up with.
Pulling the rear wheels.

This is a wheel puller from Lucky Bob's part #LB 2001 HO Gear & Tire Puller

After both wheels are off I put the axle in the press and push the stock gear over as much as possible with part #LB 2000 HO Gear & Tire Press then use the puller to finish the job.
Final pull to get the stock gears off
Take your new 22 Tooth Crown Gear and press it on your axle

Slamming the body

One thing that sets HO Drag Racing from 1/24 Drag Racing is the realism of the cars. Without a doubt the 1/24 cars look more realistic with the slammed look and the better selection of wheels.

To give my cars more of a true 1/1 stance I trim the traction magnets so I can get my wheels closer to the chassis. This will allow the body to be lowered.
Here is how the traction magnets look stock.

The top magnet has been shaved down with a straight file. Not hard to do at all. Only takes a minute.

Slammed
I also trim off the nipple on the back of the rear wheels.

Of course body mounts have to be modified. This will be covered in another thread.

Slamming your car isn't necessary to run this class.

**Cleaning up old parts**

I know a few of you guys have told me that you purchased cars off of eBay just for this race. One thing you can do to clean up the electrical parts that contact one another is use a soft bristle wire brush on your Dremel.

Clean the pick up shoe hangers where the pick up shoe springs touch and where the pick up shoe hangs. These hangers have been thrashed but they cleaned up nicely. Also clean where the pick up spring rides on top of the pick up shoe and don't forget to use shunt wires. The one on the left was cleaned as described above.