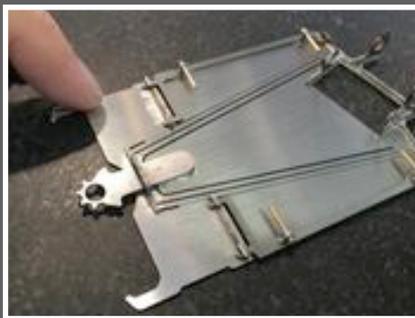
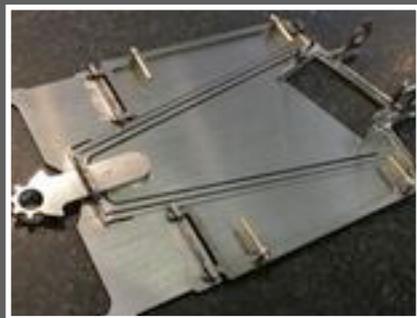
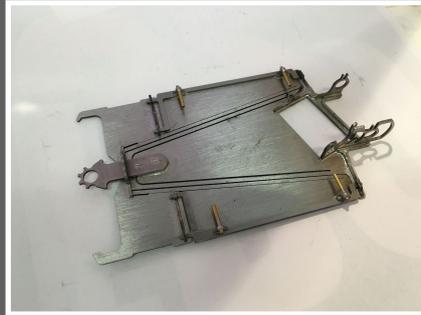


INTRODUCTION

The new INTRO 32 class was introduced as a low cost, low maintenance introduction into the world of performance orientated slot car racing. Building and racing a "Genesis" chassis will teach basic construction, driving and setup skills that can be transferred when taking the step up to 32Production or 32Saloon class racing. This article is intended to guide clubman and novice racers through the process of assembling a BSCRA Genesis INTRO 32 car.



Preparing the chassis

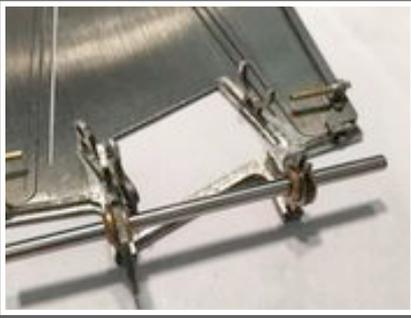
Upon opening the packet I found the chassis to have a light coating of oil to help prevent rust. Before washing the chassis, the first preparation task is to carefully radius the outer edges on the underside of the chassis using a sanding drum and a rotary tool (Dremel or equivalent). It is not entirely necessary to radius the edges but it helps the chassis to drive more smoothly on the track and prevents damage to the track surface from sharp chassis edges.

Genesis

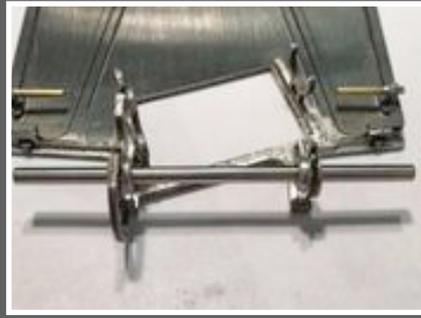
writer : James Cleave
photographer : James Cleave

BUILD

Fitting the Rear Bushes



My chassis kit came with PARMA rear bushes. I pushed them into the rear chassis uprights and fitted the rear axle to align them. Although the bushes were quite a tight fit I was not going to take any chances of them becoming misaligned so I



decided to solder them in place. If you don't feel confident with a soldering iron, you could glue them in place with "Super Glue" or an epoxy resin such as Araldite. If you do decide to solder them, make sure you oil the axle and use a good

quality acid flux, applied sparingly with a small paint brush and give the chassis and axle a good clean in warm soapy water after you have finished.

Soldering the Pinion



The shafts on some Falcon motors can be very difficult to solder to. The easiest thing to do is to slightly roughen them up with a piece of 400grit wet and dry paper. Connect the motor to a power supply and set the voltage at around 3.5V. As the motor is spinning, rub the shaft against the wet and dry paper until the shine on the shaft has gone. This is a very quick process; you do not need to spend ages wearing away the shaft and making it too

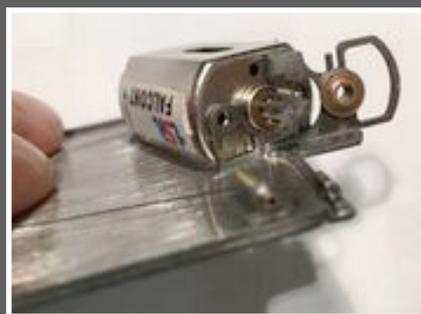


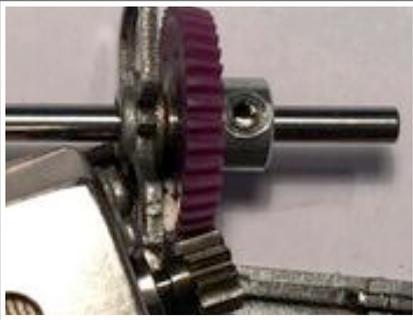
small. Lightly oil the bushes on the motor and apply a small amount of acid flux onto the shaft using a small paint brush. You can then heat the motor shaft and apply solder to give a thin, even coating of solder all around the shaft. Be careful not to get flux or solder too near the motor bush. Take the pinion and gently push it onto the end of the shaft. It should be a tight enough fit to just hold itself onto the end of the shaft. Apply a small



amount of flux to the exposed motor shaft and inside the pinion. Heat the motor shaft with a soldering iron and push the pinion onto the shaft (I use an old craft knife to position the pinion onto the shaft). To ensure a good solder joint, I usually slide the pinion slightly off the shaft again and apply a little more flux before sliding back onto the shaft again. This makes sure that the inside of the pinion is properly coated in solder.

Test fitting the motor and checking gear alignment





The easiest way to insert the motor into the chassis is to first push the motor into the bracket at the opposite end to the pinion allowing the pinion end to just fall into place. Before screwing the motor in place, check the alignment of the gears. If the pinion and motor shaft stick out



beyond the angled spur gear, you may need to move the pinion closer to the motor and shorten the motor shaft, pinion or both. If adjustment is necessary, first move the pinion to the desired position by removing the motor and reheating the motor shaft to allow the pinion to be



repositioned on the shaft. To shorten the shaft or pinion, connect the motor to a power supply set to 3.5V and, using a cutting disc in a rotary tool, cut/grind the pinion/motor shaft to the desired size.

Final motor fitting



Depending on where you have bought your Genesis kit from, you may have different types of motor screw. The round head screw is slightly easier to fit in the rear mounting hole. Use an appropriate hex key to fit the mounting screws. My kit came with a very handy "ball



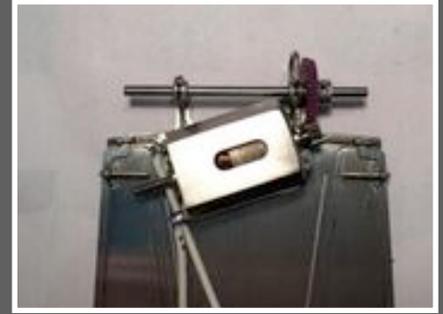
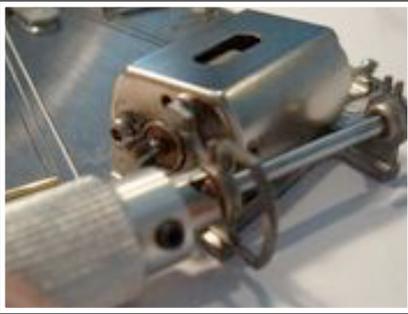
end" hex key which made the fitting of the rear motor screw very easy. If you look at the photos carefully, you will notice that I have fitted the motor with the red dot towards the front of the car. It is not essential that you fit the motor with the red dot at the front, but if you do, it will



match the pictures later in the article when I attach the lead wires. Before fully tightening the motor screws make sure the motor is properly aligned with the bottom of the chassis and is not installed at an angle.

Gear mesh adjustment



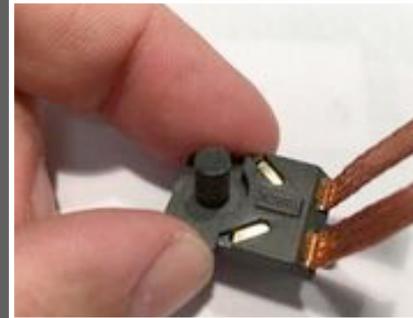
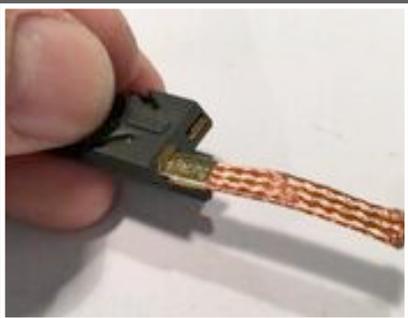
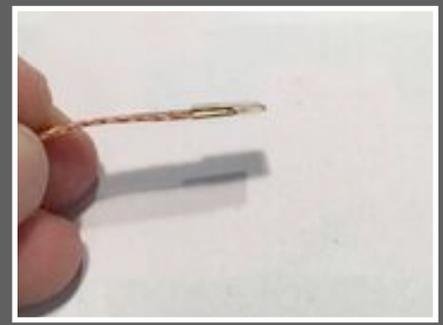
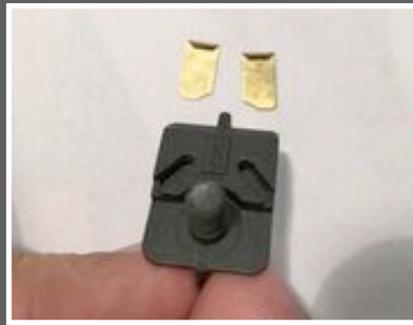
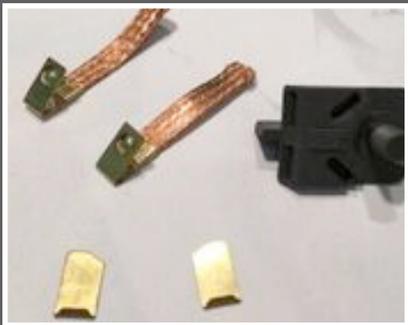


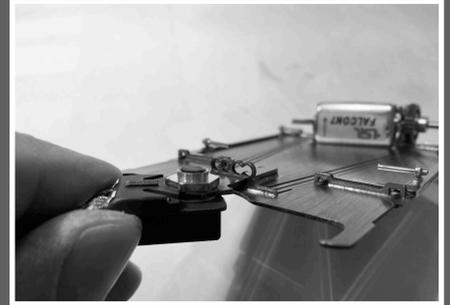
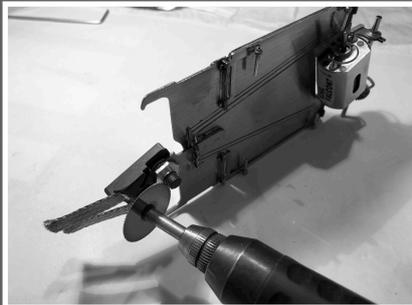
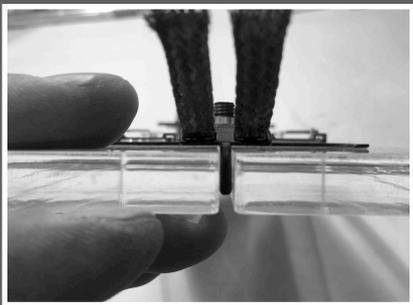
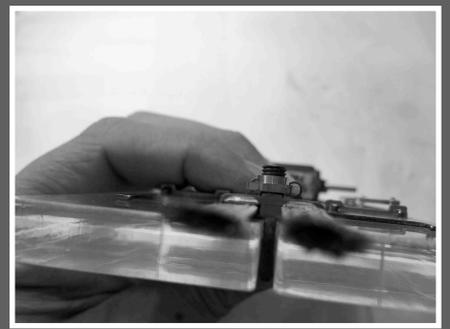
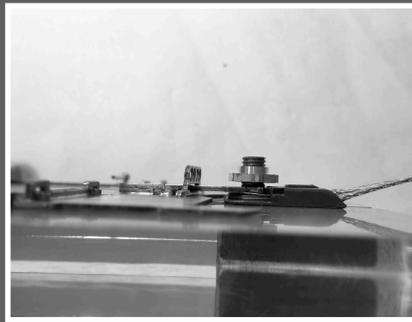
After finally tightening the motor screws and refitting the axle and spur gear, I found that the gear mesh was a little too tight with no "play" in the mesh. The PARMA bushes that were supplied with my kit have quite a large outer boss

that causes the spur gear to be pushed into the pinion. To relieve the mesh and introduce a small amount of play, I removed a small amount of material from the outside face of the bushing on the gear side. This could be done by hand

with a file, or ground away with a rotary tool. I have a special end mill that has a 3/32" hole (the same size as the axle) through the middle. This is an excellent tool for jobs like this (they are expensive though).

Assembling the guide and finally fitting it to the chassis





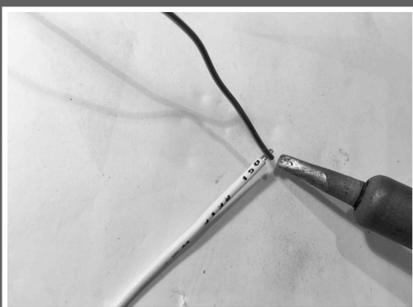
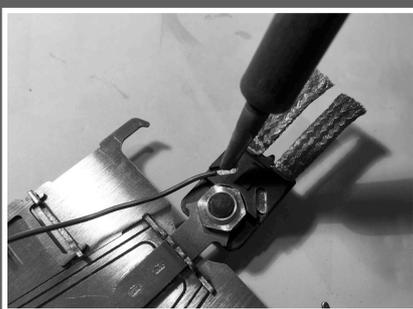
The guide assembly consists of the guide, two braids and two guide plates. Fit the guide plates into the guide in the orientation shown in the picture. Bend the braid clips into the shape shown in the picture using a pair of pliers. Push the braids firmly into the guide. They should be tight but not so tight that you need to use a tool to push them in or to remove them.

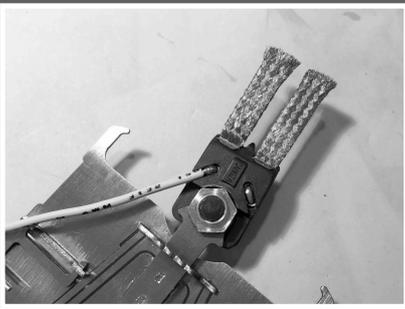
My Genesis kit was supplied with an aluminium guide nut and three

guide washers of different thicknesses: 0.005", 0.010" and 0.015". You could use a pair of pliers to tighten the guide nut, but many tyre wrenches come with a hex socket on the other end that can be used for tightening guide nuts. Place the guide washers over the guide post and fit the guide post into the chassis. Start the guide nut by hand on the threaded guide post. Apply a little drop of oil to the guide post below the nut to lubricate the thread as the guide nut is tightened.

Slowly tighten the guide nut, making sure it stays square to the guide post. You can check the squareness of the guide by placing the chassis on a flat block with a slot for the guide blade and checking the clearances between the guide, nut and block are consistent all round. When the guide nut is tight enough to stop the guide from wobbling, but allows it to rotate easily, you can remove the excess length of guide post by cutting it off with the saw attachment in a rotary tool.

Attaching lead wires to the guide plate

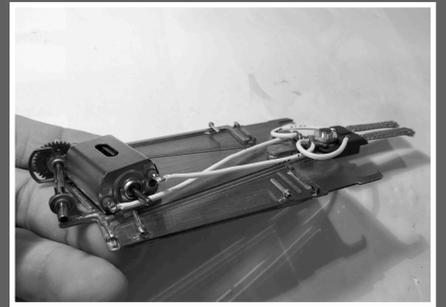
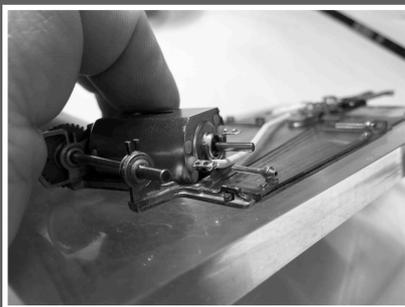
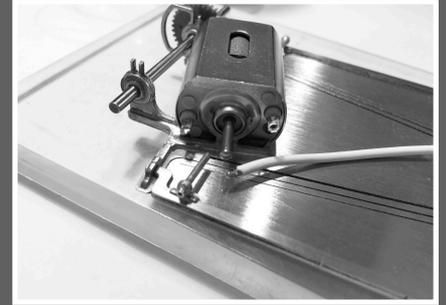
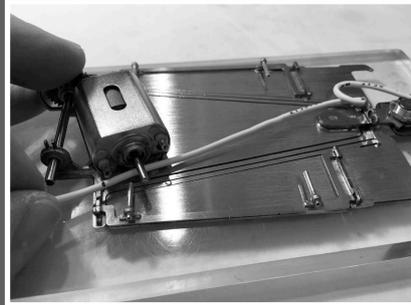




You first need to tin both guide plates. With a small soldering iron tip, heat the guide plate without melting the guide and apply solder to the guide plate where the soldering iron is heating it. If you use good quality, flux cored electrical solder, you should end up with good sized blobs of solder on each guide plate. Strip about 3mm of insulation from one end of the length of lead wire. Heat the end of the lead wire with a soldering iron and apply a small

amount of solder, enough to tin the end of the wire. Do not apply too much solder or it will flow down the wire and make it stiff at the point where you need it to flex. To attach the lead wire to the guide, hold the lead wire in the correct place and heat the lead wire until the solder on the guide plate also melts attaching the two pieces together.

Routing the lead wire and attaching it to the motor



Take the free end of the lead wire you have just attached to the guide and thread it through the outer hole of the lead wire retainer on the chassis, as shown in the picture. Hold the lead wire where it will need to attach to the motor and trim it to length. Make sure the lead wire on the left hand side of the guide goes to the motor tag nearest the white

dot and the lead wire on the right hand side of the guide goes to the motor tag with a red dot. Strip 2mm of insulation from the end of the wire and tin the end of the wire as you did before. Carefully tin both of the thin metal tags on the motor. Don't get them too hot, they are only held into the motor with small pieces of plastic. With both the

motor tag and the lead wire tinned, you should just need to hold them in place and heat them up, letting the solder melt together. You can see in the pictures that I have been careful to route the lead wires so that they do not touch the exposed motor shaft and wear away, causing a potential short circuit.

Fitting the wheel hubs and tyres

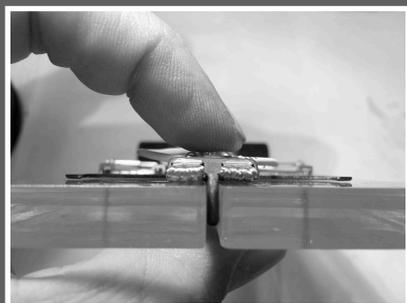
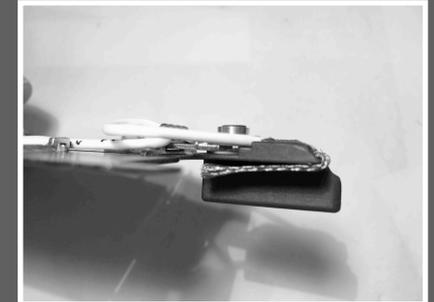
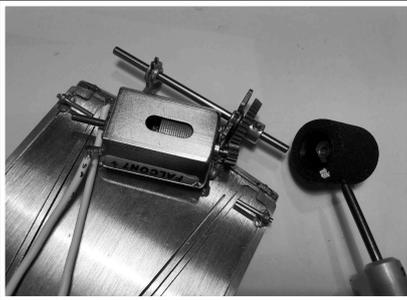


My kit came with one offset hub and one normal hub with the tyres already glued to the hubs and ground to the correct diameter. You can see in the picture that one of the hubs has the boss recessed towards the middle of the hub while the other hub has the boss at the end. This makes it easier to fit the hubs over the boss on the gear. If you do not have an offset hub, you will need to adjust the position of the axle as shown in the photo, to allow you to fit the hub in reverse so

that it will cover the boss on the gear and not stick out too far. The white dots on the tyres are a good way of marking where the grub screws are located that you will use to attach the hub to the axle. You will see in the photo that I have inserted my hex wrench all the way through the outside of the tyre and into the grub screw. I then slid the hub onto the axle and just lightly pinched up the grub screw to stop the hub from falling off the axle. I repeated this process for the other

hub. It is important to get the rear axle assembly set up correctly. The axle should rotate freely in the bushes with just the smallest amount of sideways movement. Too much sideways movement will cause the angled gears to mesh too tight and wear away much more quickly than normal. You must also ensure that the rear of the car is no wider than 64mm. If your car is too wide you should be able to move the wheel nearest the gear slightly to reduce the overall width.

Finishing touches



sides. If there isn't the same amount of clearance it is likely to be one of the following things: One braid is flatter or thicker than the other, the guide nut isn't square to the chassis, the rear tyres are not the same diameter or the chassis has got slightly twisted during the building process. You should be able to check and fix all of those problems except for incorrect tyre sizes. If your Genesis kit has been supplied by a reputable slot car distributor, they should be willing to correct this fault for you, or you can take your car to your local BSCRA slot

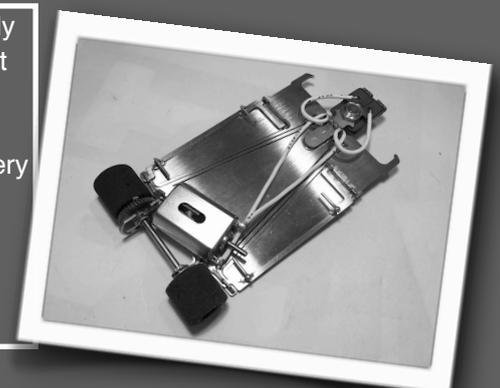
car club where they will have facilities to precision grind tyres to the correct size. When racing on different tracks you may need to adjust the height if the guide in relation to the chassis. You can do this by swapping around the three washers you originally put on the guide post. As a good starting point, I would recommend putting the 0.0015" washer directly on top of the guide so that it sits between the chassis and the guide nut. The 0.010" and 0.005" washers can be placed between the chassis and the guide nut.

Now that everything is assembled the braids can be finished and the chassis can undergo the final checks. Using nothing more than your fingers, bend the braids around the front of the guide, flattening and aligning them as you can see in the photos. Place the completely assembled chassis on a set up block (the flat block of material you used earlier with a slot in it for the guide) and press down lightly on the guide nut. There should be the same amount of clearance under the edges of the chassis on both

Trimming, painting and mounting the body shell is a whole article by itself. I have not gone into those details here, but I am reliably told by the editor of SCRn that Trigger has promised an article on this very topic.

Happy Racing,

James Cleave



Genesis
BUILD