

AutoMotionFX Conversion Chassis Instructions

(Modeling and soldering skills are necessary.)

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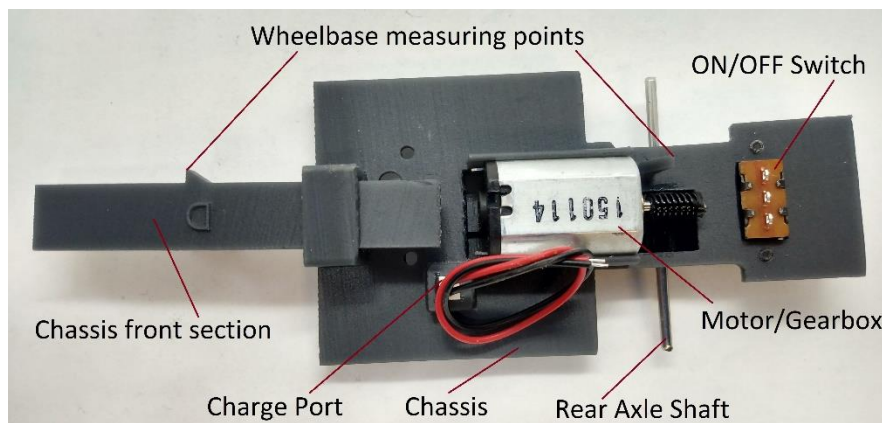
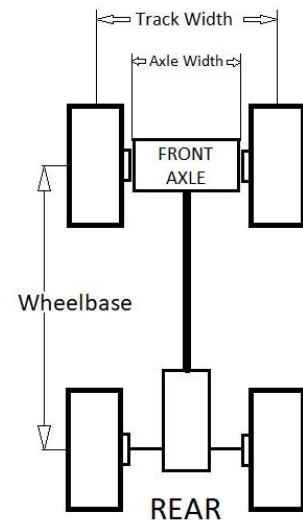
Tools you will need:

Calipers
Dremel Tool or Rotary Tool.
Lever Cutters - Irwin# 1926025.
Needle Nose Pliers.
Slip Joint Pliers
Pin Vice (Hand Drill)
Drill Bits – #61, 1/16".
Pencil Soldering Iron and Solder
#00 Philips Screwdriver

1. Getting Started - Choosing the vehicle to be converted.

Not all diecast vehicles are optimal for wire tracking conversion. There are a few things that need to be taken into consideration, such as; weight, casting thickness, good rubber tires, vehicle size, wheelbase and track width.

- a. If the finished weight is more than 6oz, it will drain the battery very quickly and may not climb even the slightest slope.
- b. Thick castings add to the overall weight and may make it difficult to find the clearance needed for the front wheels to turn without heavy modification.
- c. Choose a vehicle that comes with a nice, round rubber tire so it will grip the roadway property in a turn or find a proper tire from another source. It is an important element for successful tracking.
- d. The size of the vehicle directly effects the fit of the chassis. Be sure to choose a chassis with the correct wheelbase and axle width.
- e. Wheelbase is measured between the centers of the wheels from front to back (or axle to axle, front to back). Track width is the distance between the centerline of the two wheels on the same axle. In this instruction, we will only be referring to “wheelbase” and “axle width”



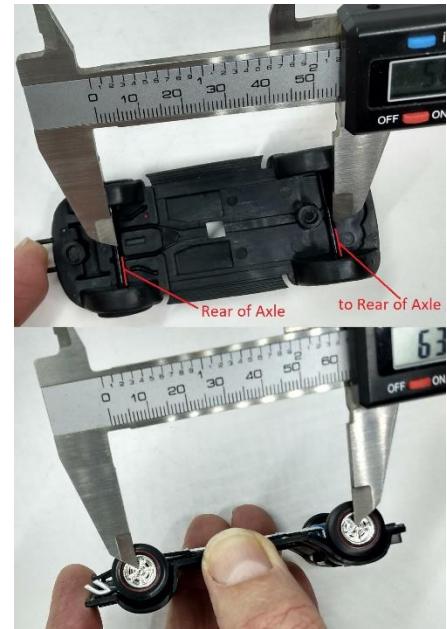
2. Disassembly and prep

Most diecast car bases are attached with 2 screws and some are attached with spin rivets. If it has 2 screws, remove the screws and the base should fall right off. If it has spin rivets, use a drill bit slightly larger than the rivet and drill it down even with the base or until the base is loose. Remove the base.

Using a caliper, measure the wheelbase. You can do this from axle to axle or center of wheel to wheel, front to rear. Be as accurate as possible! Save this measurement as you will need it later.

MM _____ or Inch _____

Next, cut both axles in half with the lever cutter. With pliers carefully twist the axle out of the wheel. If a small amount of pressure will not release the axle from the wheel use a flame to warm the axle and pull it out. Do not overheat the axle and be sure to pull it straight out of the wheel so it does not melt the plastic or oblong it.

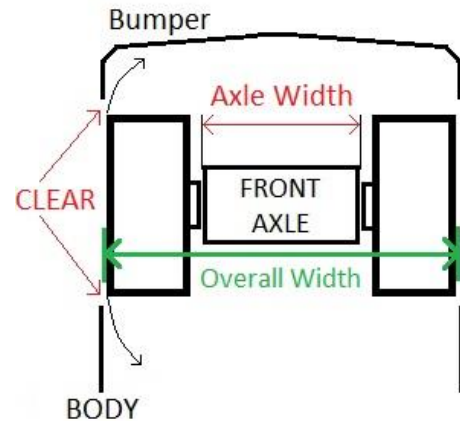


3. Wheelbase & Axle Width

Wheelbase – Use the wheelbase measurement above to set the proper distance on the chassis. Use a caliper between the 2 points on the chassis and front section. Remove the front section and cut it with wire cutters where shown. Once the proper distance is set, add a small amount of thin CA glue. It will wick into the opening and form a strong bond. Do not use Super Glue Gel!



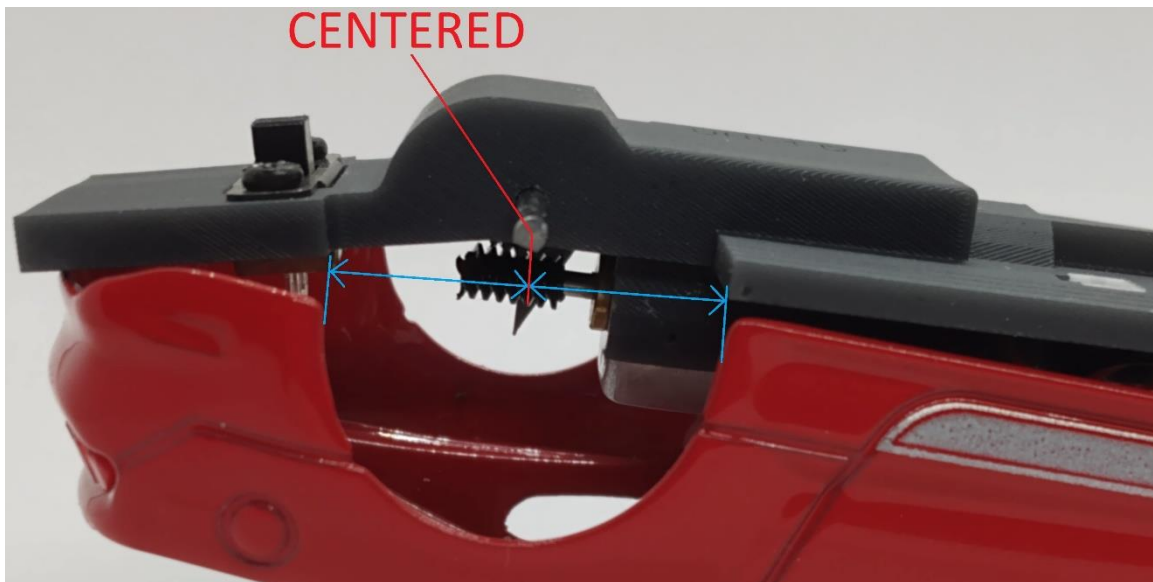
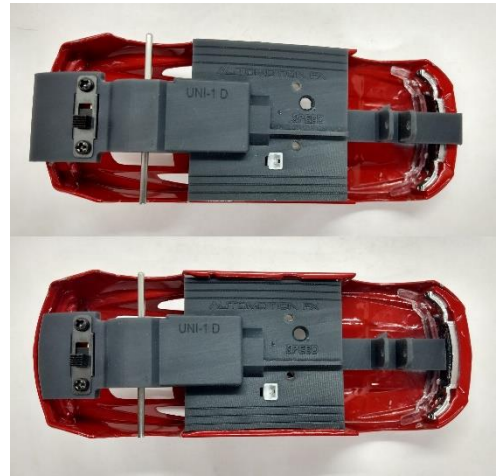
Axle Width – The overall tire to tire width must be even with or inside the body so there is enough clearance for the tires to make a full turn in both directions. The front tires must not touch the body, and have clearance all the way through its sweep. Choose a correct axle by measuring the wheel/tire, multiplying it by 2, then adding the axle width. This will give you the “overall width”. Axles are measured in millimeters side to side.



$$\frac{\text{wheel width}}{\text{(wheel width)}} \times 2 = \text{wheel width} + \frac{\text{axle width}}{\text{(axle width)}} = \text{overall width}$$

4. Chassis Fitting

Roughly line up the chassis with the body. Using a Dremel or file shorten the front section to just fit inside the bumper. Next, fit the rear section making sure to line up the rear axle shafts, centering them within the rear fenders. Then fit the sides, taking your time by trimming a little at a time, then test the fit. The front, rear and sides do not have to be shaped in that order. Once the chassis fits inside the body, be sure it will sink in far enough to obtain the correct height, stance or upper wheel clearance. Screw bosses or casting ribs may have to be removed or ground down so the chassis will fit.



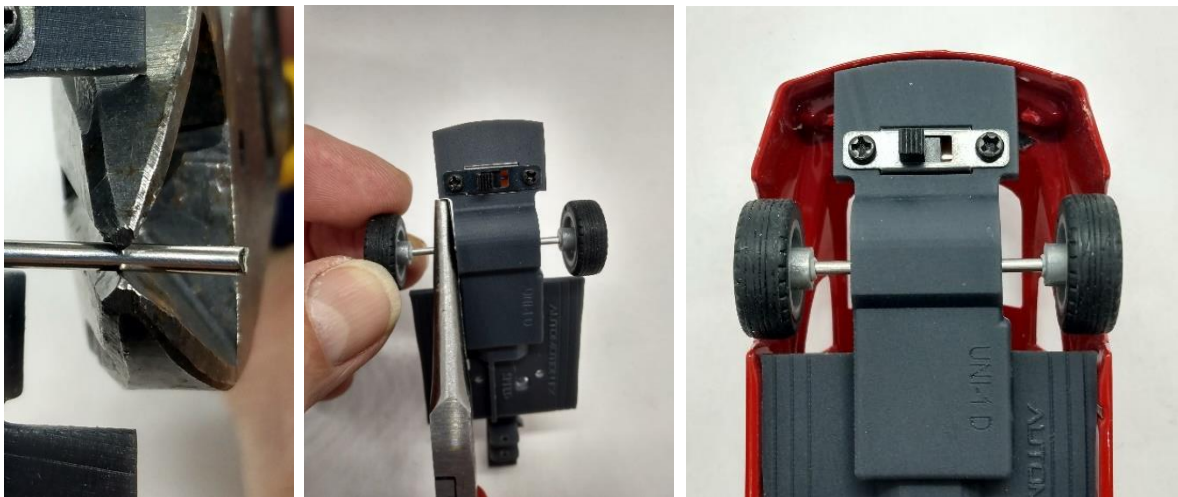
5. Rear Wheels

The stainless steel rear axle shaft is 1.6mm (1/16") in diameter and comes wider than needed so it must be trimmed with the lever cutters.

If the wheels have a smaller hole than 1/16", drill them out with a 1/16" drill bit by holding the drill bit with a pin vise and turning the wheel. Be careful not to drill all the way through the wheel.

If the wheels have a larger than 1/16" hole, you will need an "AutoMotionFX Wheel Bushing Kit"

Once the rear wheels have the correct hole size, test fit and trim the shaft to attain the right overall width which will be the same as the front "overall width". When installing or removing the wheels from the axle always use the needle nose pliers. If you force the axle to turn it may damage the gears.

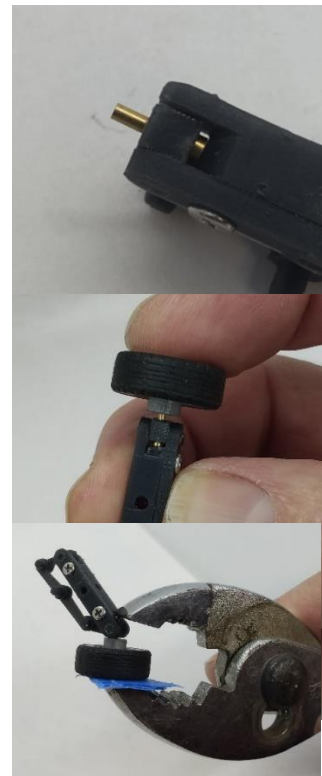


6. Front Wheels

- a. If the wheels have a smaller hole than 1mm, drill them out with the 1mm drill bit by holding the drill bit with the pin vice and turning the wheel. Be careful not to drill all the way through the wheel or break the drill bit off in the wheel.

If the wheels have a larger than 1mm hole, you will need an “AutoMotionFX Wheel Bushing Kit”

- b. Push the spindle through the hole in the back of the axle then turn the axle to its “straight” position. In this position line up the hole in the wheel and push it slightly into the spindle, making sure the spindle goes straight into the hole. Put tape on one side of the slip joint pliers so you don’t scratch the wheel. With the pliers, squeeze the spindle into the wheel most of the way, leaving a tiny gap so that the wheel still spins freely. Again making sure the spindle is going in straight and the wheel spins true. Repeat for the other side.



- c. Push the axle pivot pin into the front section until it protrudes about 0.5mm. Center the axle with the pin and squeeze it all the way through.



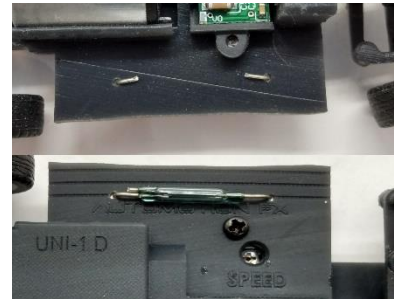
7. Wiring

The terminals on the speed controller are very small. Practice soldering on something else before attempting the small terminals. They should be soldered quickly as too much heat will destroy the board.

All the components except the reed switch and battery are pre-installed. Mount the reed switch in the 2 holes shown. Fold the wires inward and trim if necessary.

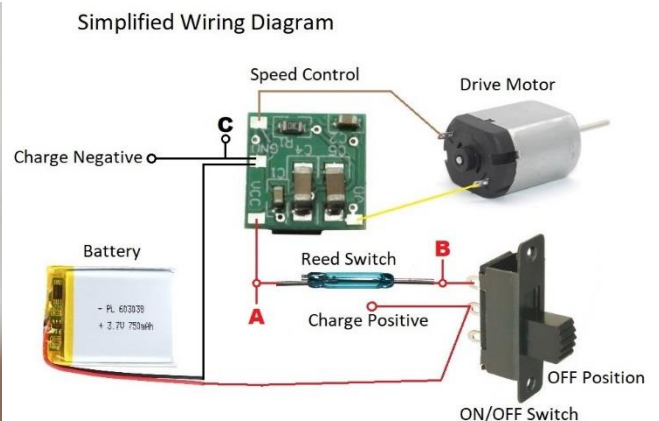
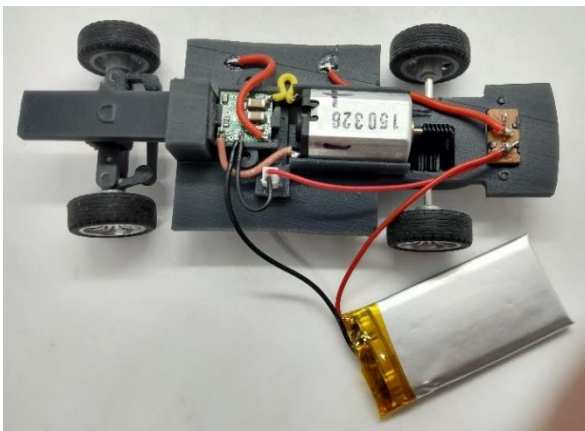
Glass reed switch – single terminal goes forward.

Plastic reed switch – white spot goes forward.



Soldering steps point to point;

1. Speed control “VO” to positive motor terminal (yellow).
2. Speed control “GND” to negative motor terminal (brown).
3. Speed control “VCC” to reed switch front (red).
4. Reed switch rear to ON/OFF switch middle terminal (red).
5. Battery and charge positive wires to ON/OFF switch left terminal (red).
6. Battery and charge negative wires to speed control “GND” (black).



- Lights turn OFF when stopped – Use terminals **A** and **C**
- Lights stay ON when stopped – Use terminals **B** and **C**

8. Body Mounts

The body can be mounted 2 different ways. Front and rear using the existing screw bosses or on both sides with the side body mounts included.

1. Boss mounting.

Find the distance between the center of the boss hole and the rear body with a caliper and lock the caliper.



Re-insert the chassis and make sure it is in its proper location front to rear. Scratch or mark the chassis.



If the boss is too high, grind it down with a Dremel to the correct height. If the boss is too low, use spacers to raise it to the correct height.



Drill a hole slightly larger than the screw size. Repeat for the front screw boss.

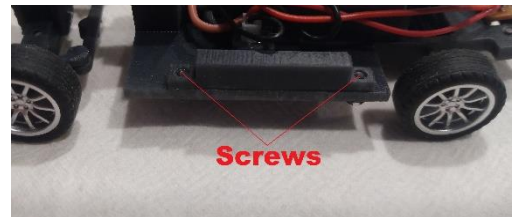


2. Body side mounting

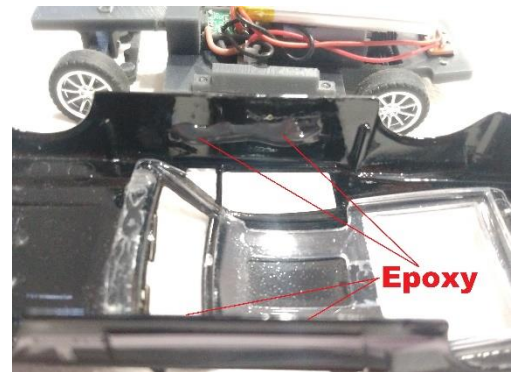
Align the side mounts with the outside edge. Mark and drill 4 5/64 or 2mm holes.



Screw the mounts to the top side of the chassis with the screws coming through the bottom.



Apply J-B Kwikweld to both sides of the inner body where the mounts will be then slide the chassis into the body. Adjust the body up and down, front to back until the proper wheel arch alignment is achieved.



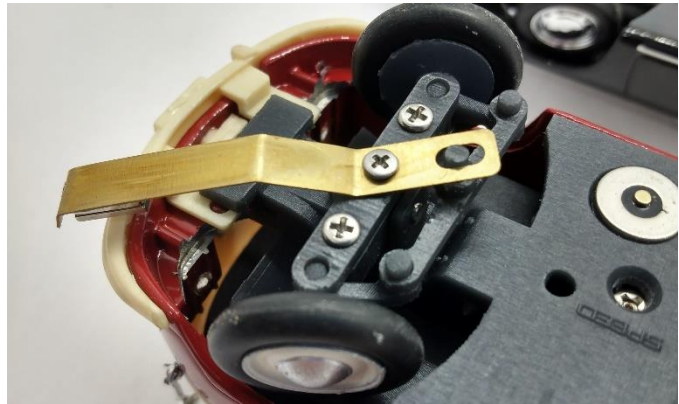
Allow 20 minutes to dry. Remove the 4 screws and add more glue to the mounts if needed.

9. Steering Arm

Glue the magnet all the way to the front of the steering arm using contact cement or clear epoxy. Do not use super glue or J-B Weld.



Insert the steering arm screw and carefully tighten with a #00 Philips screwdriver while holding the axle. Be careful not to let the axle turn as it will



break the tabs off the chassis. Turn it all the way in to snug and back off 1 revolution. Refer to the AutoMotionFX Vehicle Tune-up video to adjust the steering arm.

<https://youtu.be/R1EOj3UX-dU>

10. Care and Charging

Oil using 3-IN-ONE oil only at these points.



Charging for the DIY chassis is different than the other AutoMotionFX vehicles.

LED OFF = Charging, LED ON = Charged

AUTOMOTIONFX VEHICLE OPERATING INSTRUCTIONS

Charging

Red Light - Battery needs charging. Blue - Fully charged (battery will not overcharge if left on charger). Fully charge after each use to prolong battery life.

Speed Control

Use provided screwdriver to adjust the speed control module to your desired pace. Use caution while adjusting not to push so hard as to damage the module.

Steering Arm

Use caution not to bend the steering arm. If this occurs it can be re-tuned by carefully bending it to lay flat on the roadway as shown in the illustration. For more information please view steering tune-up video at AutomotionFX.com



Keep the steering assembly and front wheel axles free of small hairs, dust and debris.

DO NOT force rear wheels to spin as damage to internal gears may occur.

To help prevent damage to your vehicle it is recommended that some type of border is in place to contain the vehicle on your layout.