AutoMotionFX Wheel Bushing Kit

1. **O-Scale Chassis Kit Sizing**
2. **S and HO-Scale Chassis Kit Sizing**

Kit contains:

- 1mm, 1.1mm, 1.6mm, 1.8mm and 2.3mm drill bits.
- Universal Pin Vice. *
- 1.8mm and 2.3mm bushing tubes.

*The pin vice has 4 different collet sizes to fit all 5 drill bits.

Tools you will need:

Calipers (to measure drill bits and bushing sizes).
X-Acto or Craft Knife.
Lever Cutters - Irwin# 1926025 or similar.
Slip Joint Pliers.
CA Glue (or Super Glue).

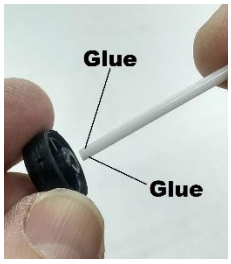
1. O-Scale Chassis Kit Sizing

Rear axle shaft sizing. The rear axle shaft size is 1.6mm. The hole size in the wheel needs to be the same size. Wheel hole sizes vary widely but are rarely larger than 2.2mm.

- Test the hole size by putting each drill bit into the hole.
- If the 1.6mm drill bit is loose in the hole, then start at line A.
- If the 1.6mm drill bit does not fit in the hole, then start at line B.

A. Tighten the 2.3mm drill bit into the pin vise and carefully spin the wheel around the bit. Be sure to spin it true and stop when it bottoms out. Be careful not to go all the way through the wheel. If 2 plastic shards are coming out evenly, you are drilling true.

Put a small amount of CA Glue around the outside of the 2.3mm bushing tube, spin and push the bushing into the wheel until it bottoms out. Allow to dry for at least 10 minutes. After 10 minutes, the bushing should be locked in place and will not turn.



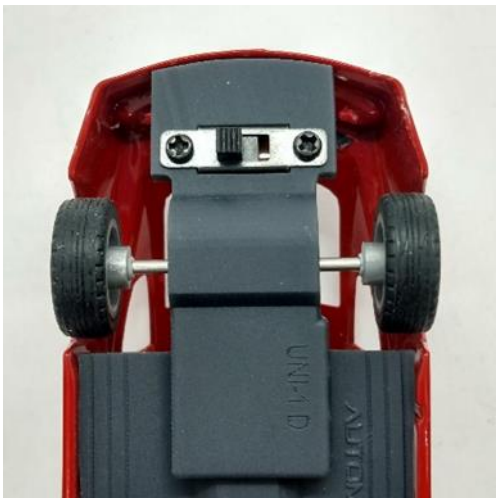
With an X-Acto Knife or single edge razor blade, cut the excess bushing off even with the back of the wheel. Be very careful and mindful when using sharp blades! File the bushing flat to the back of the wheel if needed.

B. Tighten the 1.6mm drill bit into the pin vise and carefully spin the wheel around the drill bit. Be sure to spin it true and stop when it bottoms out. Be careful not to go all the way through the wheel. If 2 plastic shards are coming out evenly, you are drilling true.

   At this point you have your 1.6mm hole. You are finished and do not need to proceed any further. Your wheel is now the correct size and ready to install onto the rear axle shaft.

   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 needle nose pliers. Do not force the axle to turn as it will damage the gears.



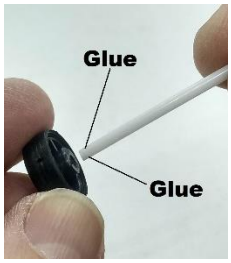


Front axle spindle sizing. The front axle spindle size is 1mm. The hole size in the wheel needs to be the same size. Wheel hole sizes vary widely but are rarely larger than 2.2mm.

- Test the hole size by putting each drill bit into the hole.
- If the 1.8mm drill bit is loose in the hole, then start at line A.
- If the 1mm drill bit is loose in the hole, but the 1.8mm drill bit does not fit, then start at line B.
- If the 1mm drill bit fits tightly or does not fit, start at line C.

A. Tighten the 2.3mm drill bit into the pin vise and carefully spin the wheel around the bit. Be sure to spin it true and stop when it bottoms out. Be careful not to go all the way through the wheel. If 2 plastic shards are coming out evenly, you are drilling true.

Put a small amount of CA Glue around the outside of the 2.3mm bushing tube, spin and push the bushing into the wheel until it bottoms out. Allow to dry for at least 10 minutes. After 10 minutes, the bushing should be locked in place and will not turn.

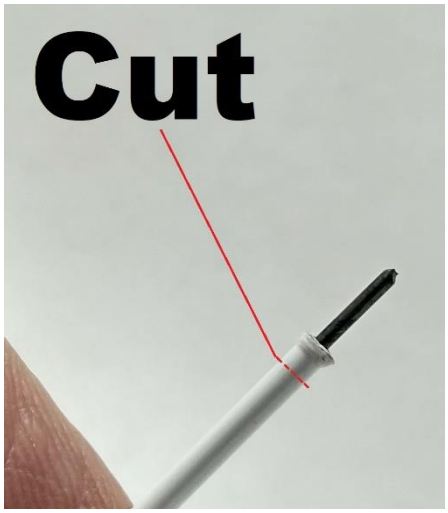


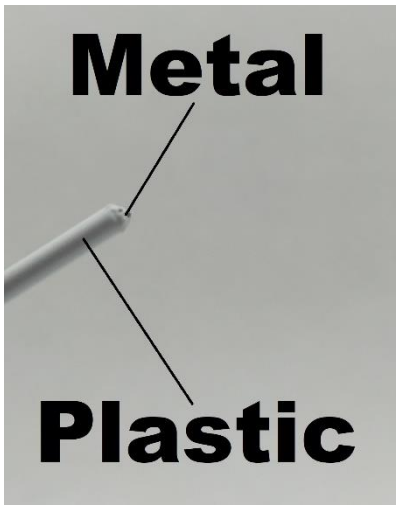
With an X-Acto Knife or single edge razor blade, cut the excess bushing off even with the back of the wheel. Be very careful and mindful when using sharp blades! File flat to the back of the wheel if needed.

B. Tighten the 1.8mm drill bit into the pin vise and carefully spin the wheel around the drill bit. Be sure to spin it true and stop when it bottoms out. Be careful not to go all the way through the wheel. If 2 plastic shards are coming out evenly, you are drilling true.

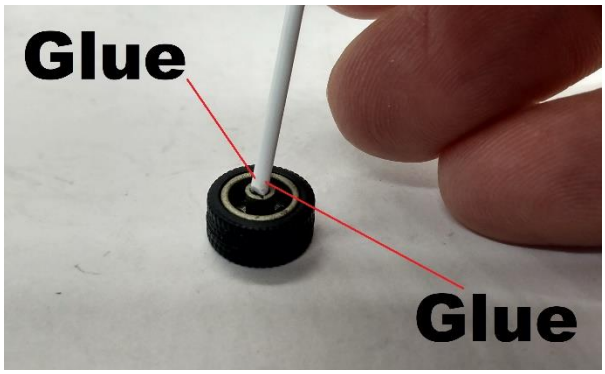
Since you have drilled the wheel out to 1.8mm you will need to use the 1.8mm bushing tube. This bushing tube contains a metal wire in its center and will be removed after the bushing is inserted.

Cut the end of the 1.8mm bushing tube with the lever cutter so that the plastic and metal are even with each other.

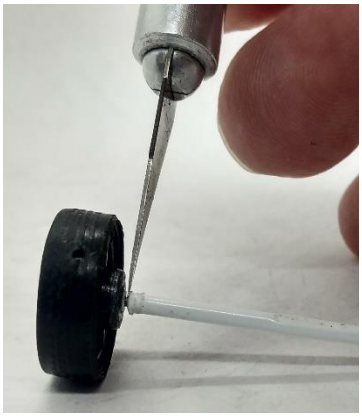




Put a small amount of CA Glue around the outside of the bushing tube. Spin and push the bushing tube into the wheel until it bottoms out. Let sit for 10 minutes.



With the X-Acto Knife score the bushing tube all the way around and down to the metal wire. While holding the wheel between two fingers and the bushing tube lightly with pliers, quickly spin, and remove the wheel from the metal wire inside the bushing tube. For the next wheel, cut the bushing tube with the lever cutter again so that the plastic and metal are even with each other.



C. Tighten the 1mm drill bit into the pin vise and carefully spin the wheel around the drill bit. Be sure to spin it true and stop when it bottoms out. Be careful not to go all the way through the wheel. Your wheel is now the correct size and ready to install onto the spindle.

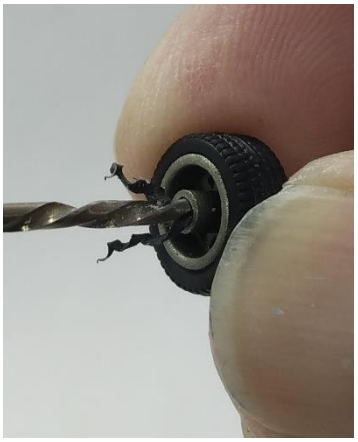
Push the spindle through the hole in the back of the axle, then turn the axle to its “straight” position. In this position line up the spindle in the hole and push it slightly into the spindle, making sure the spindle goes straight into the hole. Put tape on one side of the slip joint pliers so you don’t 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 that the spindle is going in straight and the wheel spins true. Repeat for the other side.

2. S and HO-Scale Chassis Kit Sizing.

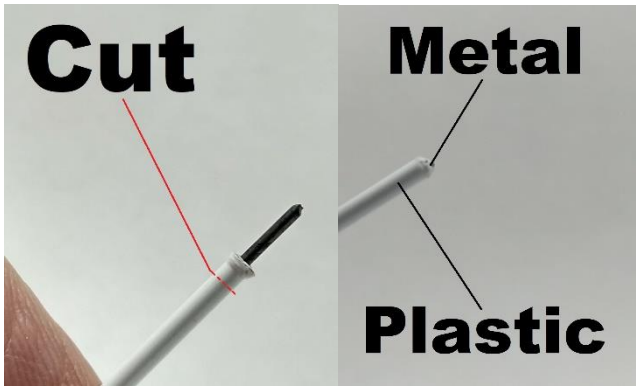
Rear axle sizing. The rear axle shaft size is 1.09mm. The hole size in the wheel needs to be the same size. Wheel hole sizes vary widely but are rarely larger than 1.5mm.

- Test the hole size by putting each drill bit into the hole.
- If the 1.1mm drill bit is loose in the hole, but the 1.8mm drill bit does not fit, then start at line A.
- If the 1.1mm drill bit fits tightly or not at all start at line B.

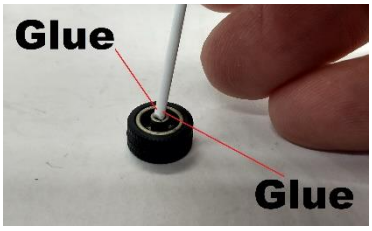
A. Tighten the 1.8mm drill bit into the pin vise and carefully spin the wheel around the bit. Be sure to spin it true and stop when it bottoms out. Be careful not to go all the way through the wheel. If 2 plastic shards are coming out evenly, you are drilling true. Since you have drilled the wheel out to 1.8mm you will need to use the 1.8mm bushing tube. This bushing tube contains a metal wire in its center and will be removed after this bushing is inserted.



Trim the end of the 1.8mm bushing tube with the lever cutter so that the plastic and metal are even with each other.



Put a small amount of CA Glue around the outside of the bushing tube. Spin and push the bushing tube into the wheel until it bottoms out. Let sit for 10 minutes.

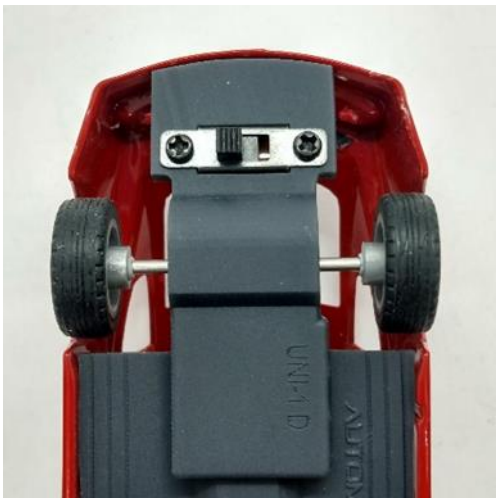


With the X-Acto Knife score the bushing tube all the way around and down to the metal wire. While holding the wheel between two fingers and the bushing tube with pliers, quickly spin, and remove the wheel from the metal wire inside the bushing tube. For the next wheel, cut the bushing tube with the lever cutter so that the plastic and metal are even with each other again.

B. Tighten the 1.1mm drill bit into the pin vise and carefully spin the wheel around the drill bit. Be sure to spin it true and stop when it bottoms out. Be careful not to go all the way through the wheel. If 2 plastic shards are coming out evenly, you are drilling true. Your wheel is now the correct size and ready to install onto the rear shaft.

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 will damage the gears.





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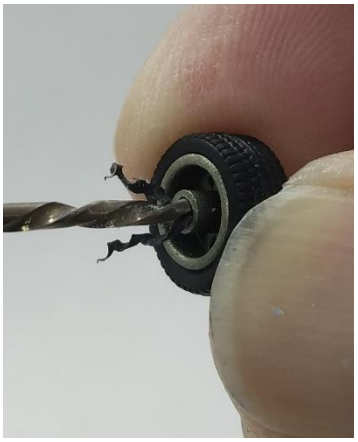

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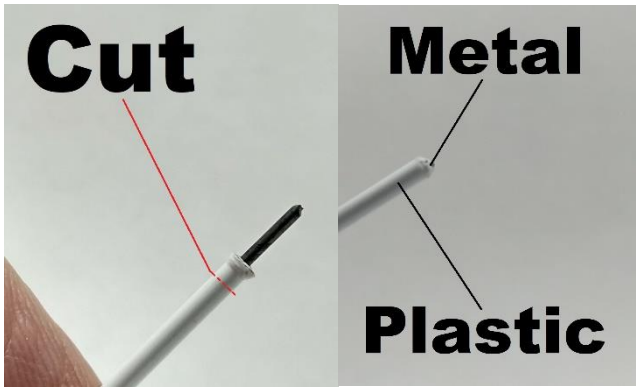

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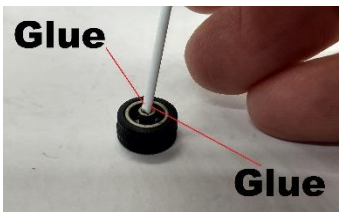

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