



Instructions: PRR Sam Rea Shops X58 Class Box Car Kit
Tangent Part Numbers: 14000-XX through 14002-XX
9/2015



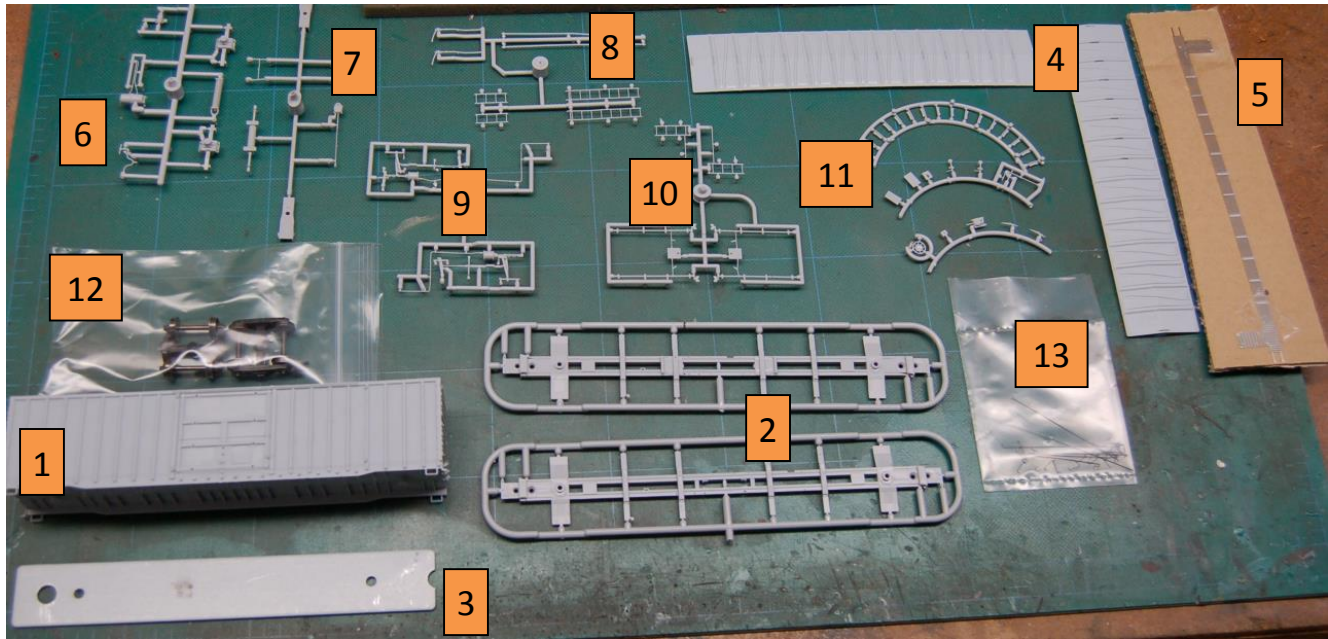
Thank you for purchasing the Tangent Scale Models PRR Sam Rea Shops X58 Class Box Car Kit! A few quick notes before starting:

- **Instructions have many large images:** Because some model builders are visually oriented, while others prefer written instructions, we have included *both* text and photos within these instructions. As you can see, many of the images are rather large, to aid in your model building.
- **There are more images at the end:** If you want to see more views of a completed model as a reference for your building, scroll to the end of this document. This is another advantage of a “digital download” over a printed instruction sheet.
- **Modeling from computer screen is ideal:** If possible we recommend modeling from your monitor. You can then enlarge the images as you see fit, and you save ink and paper at the same time.
- **There are several ways to complete your kit:** While there are multiple sequence steps possible to build this car, we believe the sequence included here yields the best results.
- **Prototype photos:** While you likely have your own sources of prototype photos, please recall that for each RTR scheme that Tangent releases, we include a prototype photo on our website. You can use these as references in addition to your own sources.

- **We want feedback:** If you find something missing from our text instructions, or an error within these instructions, please let us know by submitting a comment to us on our website or sending an email to support@tangentscalemodels.com Thank you!
- **This kit is meant for adults:** While we applaud bringing younger modelers into our hobby, this model includes many small parts, some of which are sharp and/or delicate. Therefore, this kit is recommended for those 14 years of age and older.
- **We offer semi-scale wheels separately:** We offer semi-scale wheels separately in 12 or 100 axle packs – in either 33" or 36" diameters - to fit all of our trucks – and those from other brands!



Overview of this kit's contents:



Standalone parts included:

- Part 1 – Boxcar Body
- Part 2 – Underframe (1 type included in kit, both types shown)
- Part 3 – Car Weight
- Part 4 – Roof (1 type included in kit, both types shown)
- Part 5 – Etched Metal Running Board ("roofwalk") – May NOT be included with your kit depending on prototype configuration

Part sprues included:

- Sprue #6 contains brake parts and air line details
- Sprue #7 contains extended draft gear parts ("coupler boxes"), door parts, and end crossover platform railings
- Sprue #8 contains air hoses, door tracks, and ladders
- Sprue #9 contains underbody brake piping and fulcrums
- Sprue #10 contains ladders and door rods
- Sprue #11 contains the roofwalk supports, brakewheel, tack boards, retainer valve, fulcrum and chain, door opener, center door arms, etc.

Parts bags included:

- Bag #12 contains trucks, wheels, screws, and etched metal parts (coupler lift bars, etched crossover platforms, brake step)
- Bag #13 contains all wire parts

Parts needed/recommended:

- Couplers. Our draft sills are designed for Kadee "whisker" shank couplers - #158.

Tools needed/recommended:

- Liquid styrene cement
- CA-type cement or cyanpoxy – for wire to plastic joins
- Canopy cement – for running board to plastic roof joins (made by Pacer and other brands)
- Hobby knives - #11 and #17 are ideal
- #78/#79 drill bit in a pin vise is useful, although a #11 blade can be used gingerly
- Small Phillips head screwdrivers
- Tweezers

PREAMBLE – THINGS YOU SHOULD KNOW

- **This kit is NOT recommended for children aged 14 and under.**
- **Small parts:** there are many very small parts included in this kit. The assembly sequence requires you to have several bags open at a time, so we recommend a clean and open work surface so that you can keep all of the parts in the open and accessible. Let's get started!
- **Kit variations:** When you ordered this kit, there were 6 different prototype-based configurations to choose from. If you want to change the configuration of your kit, you can order all of our parts here: <http://www.tangentscalemodels.com/product-category/parts/parts-prr-x58-box-car/> or simply go to www.tangentscalemodels.com and click on "View & Buy Models" and then "Parts".

Box Car Construction Overview:

1. Kit Configuration: These instructions will demonstrate the assembly of a Penn Central 1968 rebuilt car that has had the roofwalk removed, a lowered brakewheel, shortened end ladders, and the top four grab irons removed from the side of the car body. For cars that include all of the removed hardware, the assembly is basically the same other than the parts you will use.
2. There is no set assembly sequence when building this kit. There are basically three "sub-assemblies" to construct: the body, the underframe, and the roof. The order in which you assemble each one is entirely up to you, but we recommend building the kit in the order described here. Now, let's get started!

Body Assembly:

1. **Install the wire grab irons to the car sides.** Insert into the holes and secure with CA. All of the straight grabirons in the kit are the same size so there is no need to sift through them to find the right ones! If building a 14000-XX kit (PRR), install the grabs all the way to the top of the car side. If you are building a version 14001-XX kit (PC), refer to prototype photos as the both ends of the car would likely have had the grabs removed – likely install just the first four grabs from the bottom. For a version 14002-XX kit (CR), the B end likely has all grabs

installed but the A end has only the bottom 4 grabs installed. Continue installing the grabs around the car until all are in place.



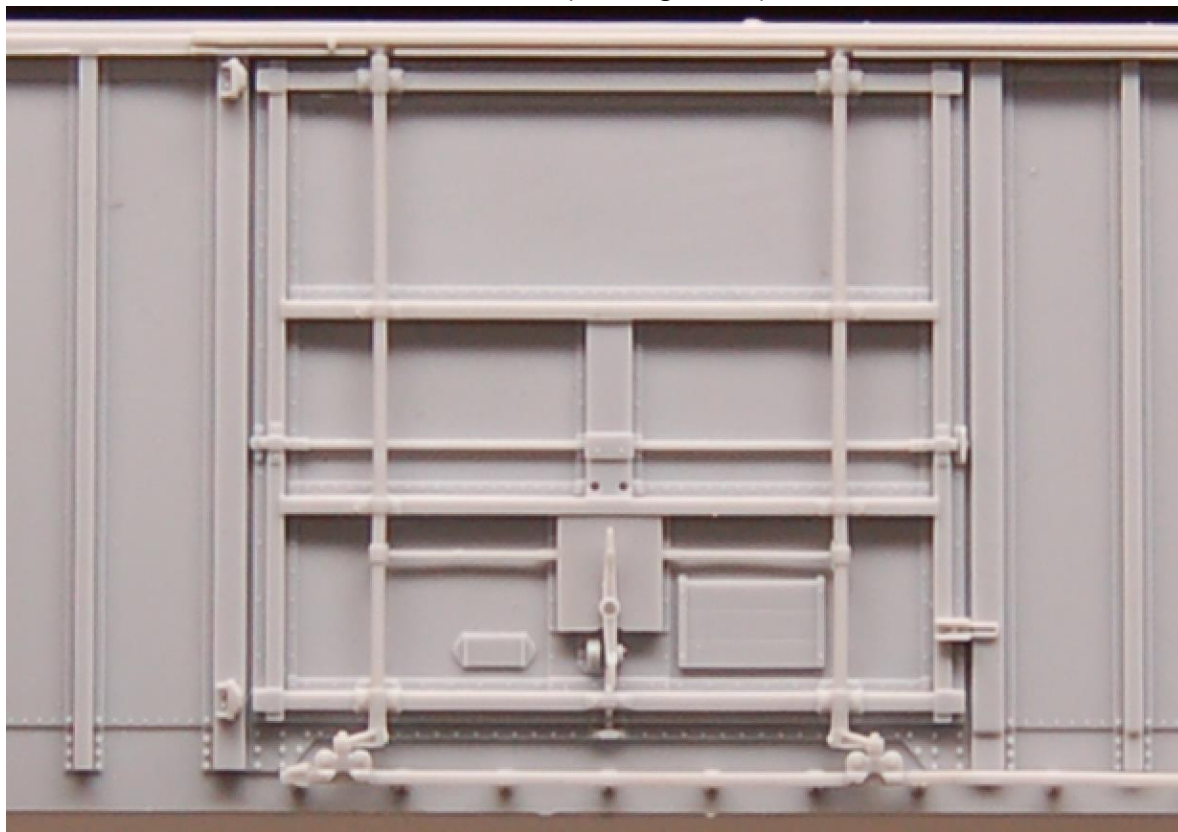
2. **Add the lower door tracks.** The track has six small mounting tabs/pins that fit into locating holes on the car side. The track can only fit one way on the car side. Be very careful when de-spruing this part as it is very delicate. Glue in place.



3. **Add the door rods.** Again, these parts are very delicate so be careful when de-spruing. Orient and glue in place.



4. **Install the door handles.** Orient vertically and glue in place.



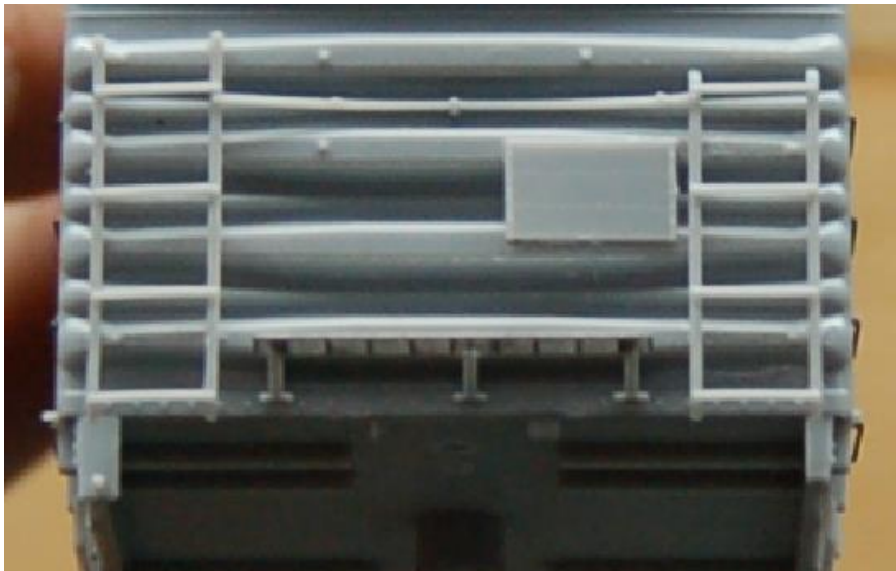
5. **Install crossover platform on A end of car.** Moving to the A end (non-brakewheel end) of the car, begin by installing the crossover platform. There are two included in the kit (one for each end), and the one for the A end is the one *without* the notch in it. The pins are not evenly spaced, so it can only be installed one way. Insert into the mounting holes and secure with CA.



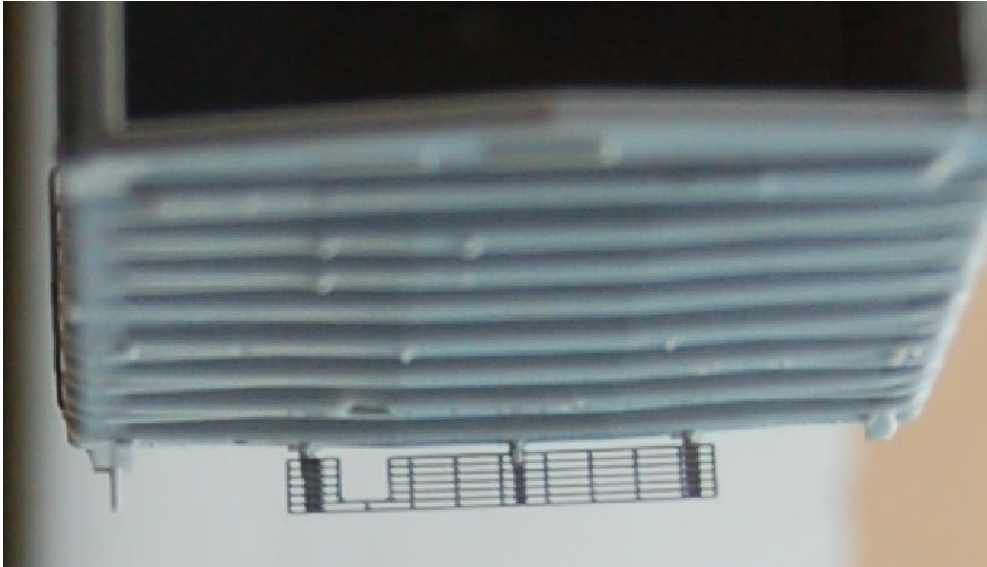
6. **There are two different parts for the end ladders.** One has a rail that extends across to the other ladder, the other is just four rungs. The one with the rail goes on the left when looking at the end of the car. Insert and glue both ladders in place and also glue rail to the top of the right hand ladder.



7. **Glue the tack board in place.**



8. **Install crossover platform on B end of car.** The B end of the car is assembled in much the same way, with the addition of the brakewheel housing and clevis assembly. The crossover platform has a small hole in it for the brakewheel chain. Glue in place.



9. **Install the end ladders and tack board** in the same manner as the A end.



This concludes the body assembly. For a car with high ladders and brakewheel the end arrangements are slightly different. Refer to prototype photos or the ones below for the placement of ladders, brake platform, brakewheel assembly, and crossover grabiron.





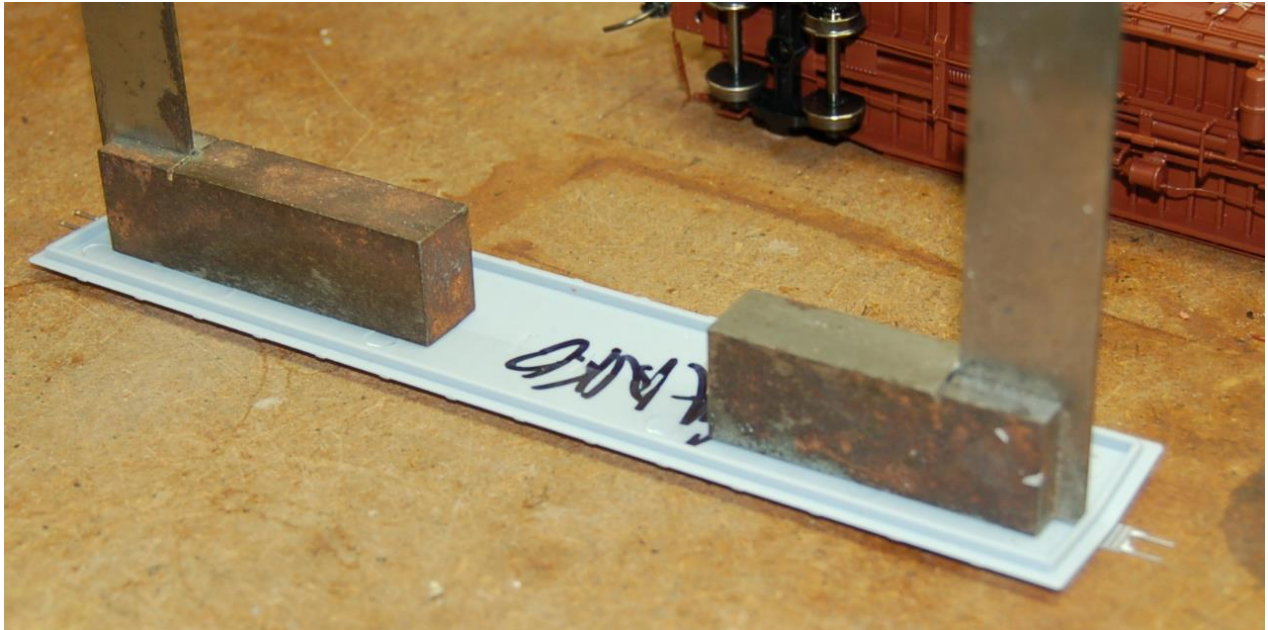
Roof Assembly

10. **Add roofwalk supports for cars without a roofwalk.** The roof will have small slots cut into it. You will insert the roofwalk supports into these slots. There are 16 total supports, some are L shaped, and some are T shaped. The T shaped supports may need to be trimmed slightly so that when they are installed they are level with the L style. We recommend using tweezers to hold and install these. If you are building a car with a roofwalk, continue to the next step.

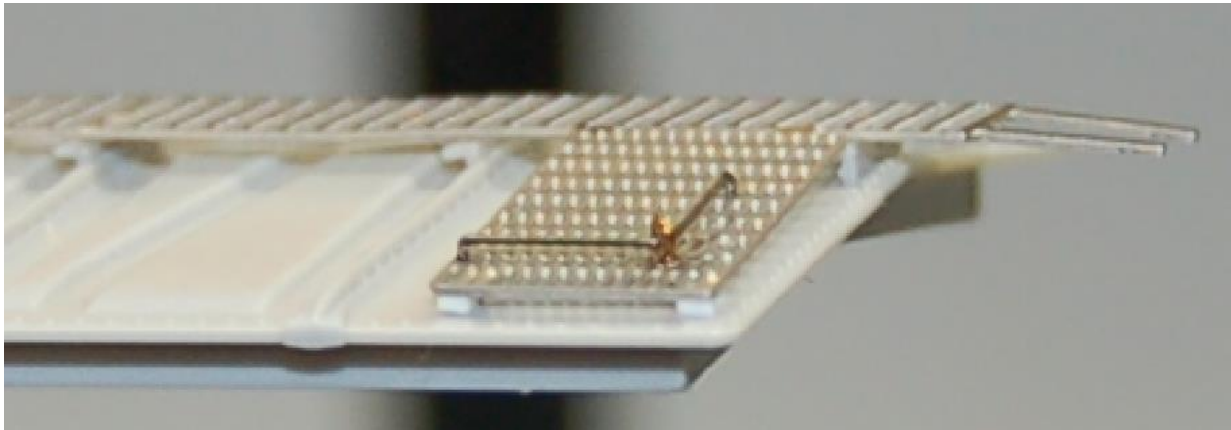


11. **Add roofwalk (if required).** For a car requiring a roofwalk, we include a roof with molded-on supports. This makes it easier for you to install the roofwalk to the roof. Attach the

roofwalk to the roof with canopy cement (or your adhesive of choice. Canopy cement seems to be the best for dis-similar materials to control for expansion and contraction without warping). Apply glue to the supports, line up the roofwalk, and lay in place. Carefully turn the roof upside down on a flat surface and set small weights on top of the roof until glue dries.



12. **Finish detailing the roof.** When dry, install eyebolts to the corners of the outer platforms, insert the corner grabirons, and glue in place.





Underframe Assembly

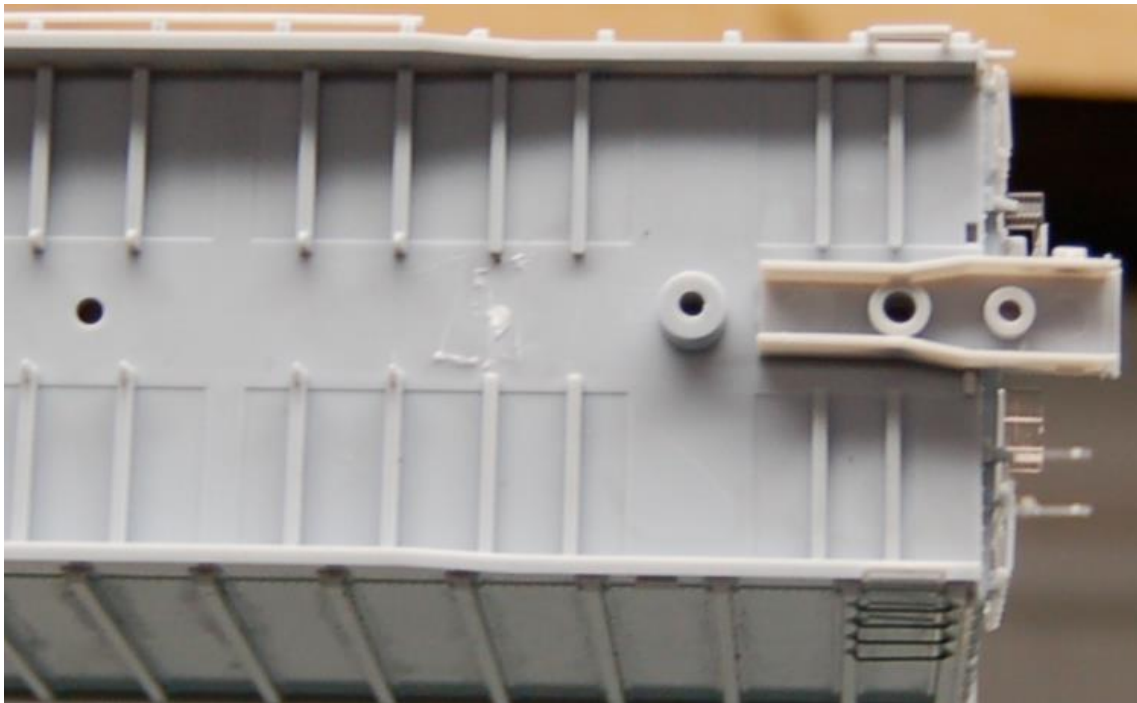
The kit you purchased will have either a hydra-cushion or a keystone underframe. Refer to prototype photos to determine which is appropriate for your model.

The assembly of the two underframes is essentially the same except for the fact that the HC has a different device in the center of the car than the Keystone, and the wire parts are a bit different. We have included photos of both, so refer to them for exact positioning of all components.

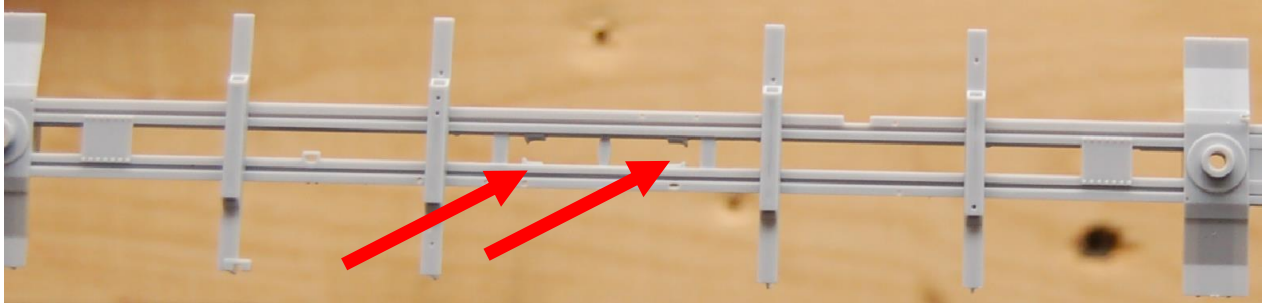
13. **Remove the mold release pins from the body.** Start by removing the two small mold release pins on the bottom of the car body. This ensures that the underframe will sit flat.



14. **Glue the coupler pockets in place.** There is a locating pin on the casting to ensure proper placement.



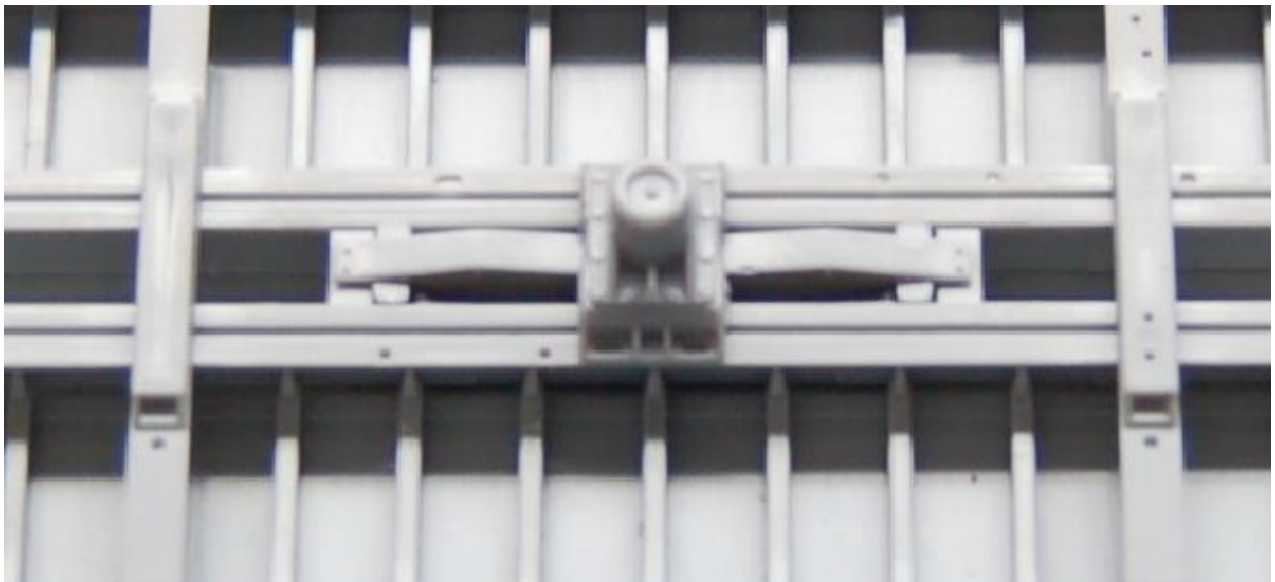
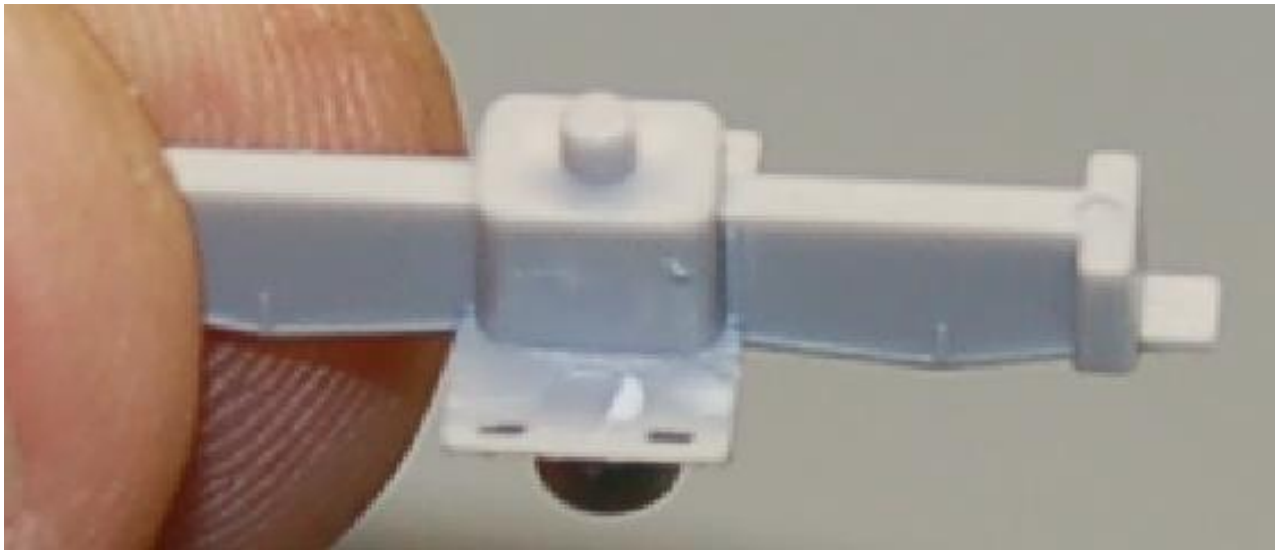
15. **Remove plastic bridge.** Both underframe castings have a small “bridge” in the middle of the center sill that needs to be removed to allow the installation of the cushioning devices.



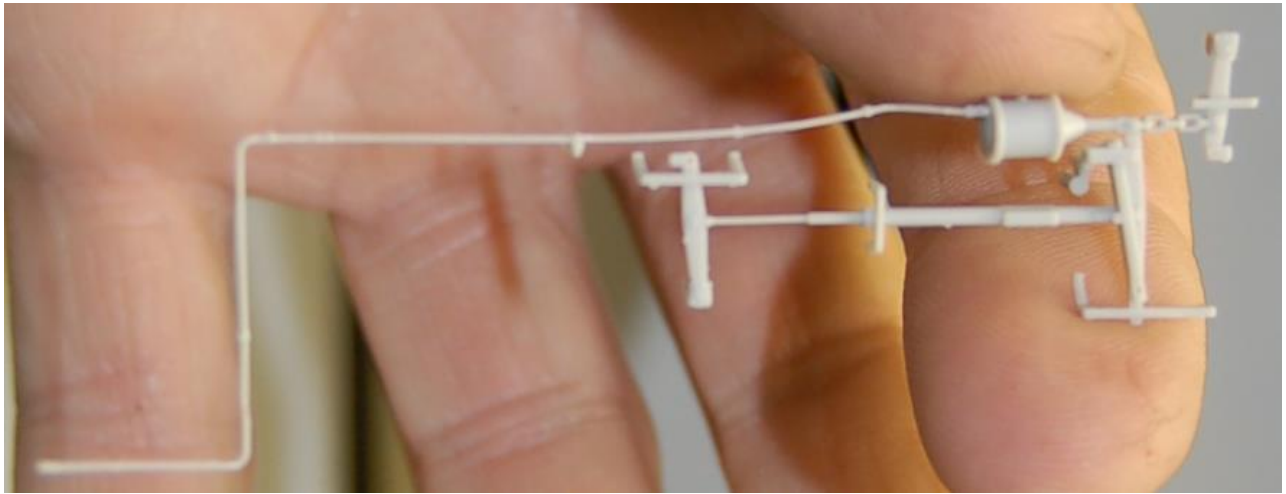
16. **Install the spring casting.** Both underframes use the spring casting, but it is in a slightly different position on each. For the HC, the spring is right next to the bolster on the B end of the car. For the Keystone, it is a bit closer to the center of the car. In either case, there is a locating hole in the floor to assist in the positioning. The spring has a flat end, and one that is U shaped. The flat side points to the B end of the car.



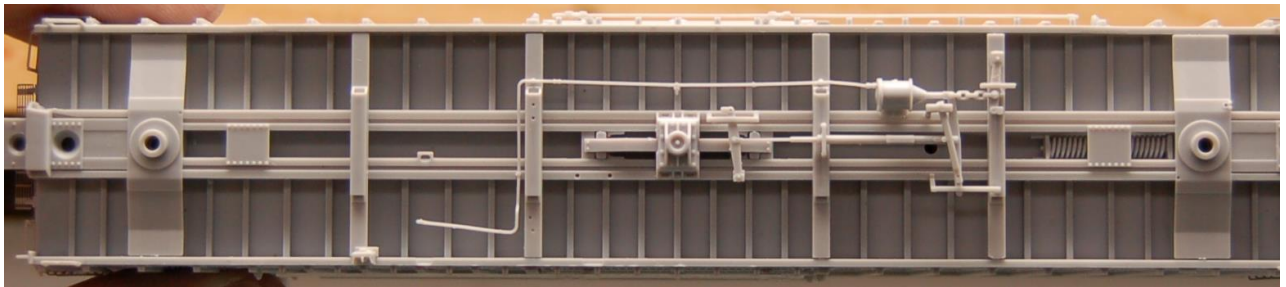
17. **Install cushion devices.** There are two different devices that are in the center of the car. For the Keystone version, the device needs to be installed before the underframe. It looks like a long cylinder with pipes coming out of each end. There is a locating hole on the floor that will position this in place. For the HC version, the device sits on top of the center sill, so you can put the underframe in place first, then install it. In either case, if you plan on painting the car before adding couplers (which we recommend), **DO NOT GLUE THE UNDERFRAME IN PLACE**, it will be held in place by screws added later. When both components are glued in place, set underframe on the car so that the small notch in the center sill for the cylinder bracket is toward the B end of the car. Glue the bracket in place making sure that it is parallel with the car floor.



18. **Carefully de-sprue the brake piping assembly.** It is very delicate so be very careful. There are also several mold release pins that need to be removed. When complete, it should look like this:



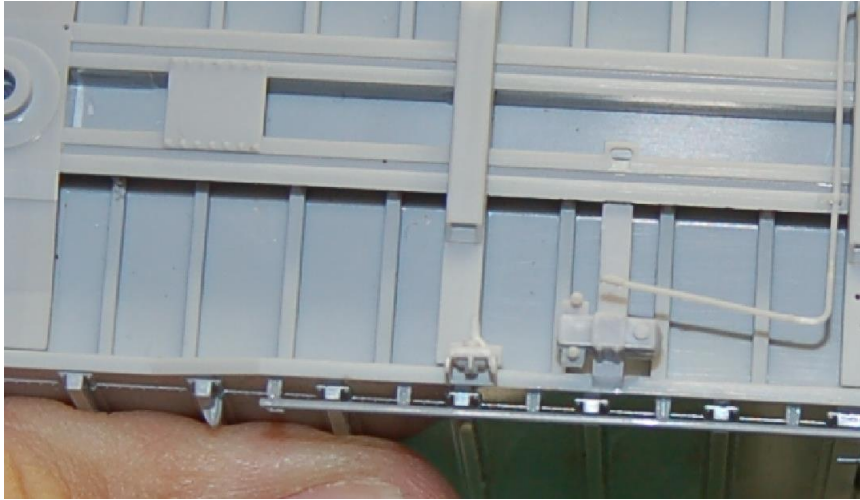
19. **Install the brake piping assembly.** Use the locating pins to orient the assembly and glue in place.



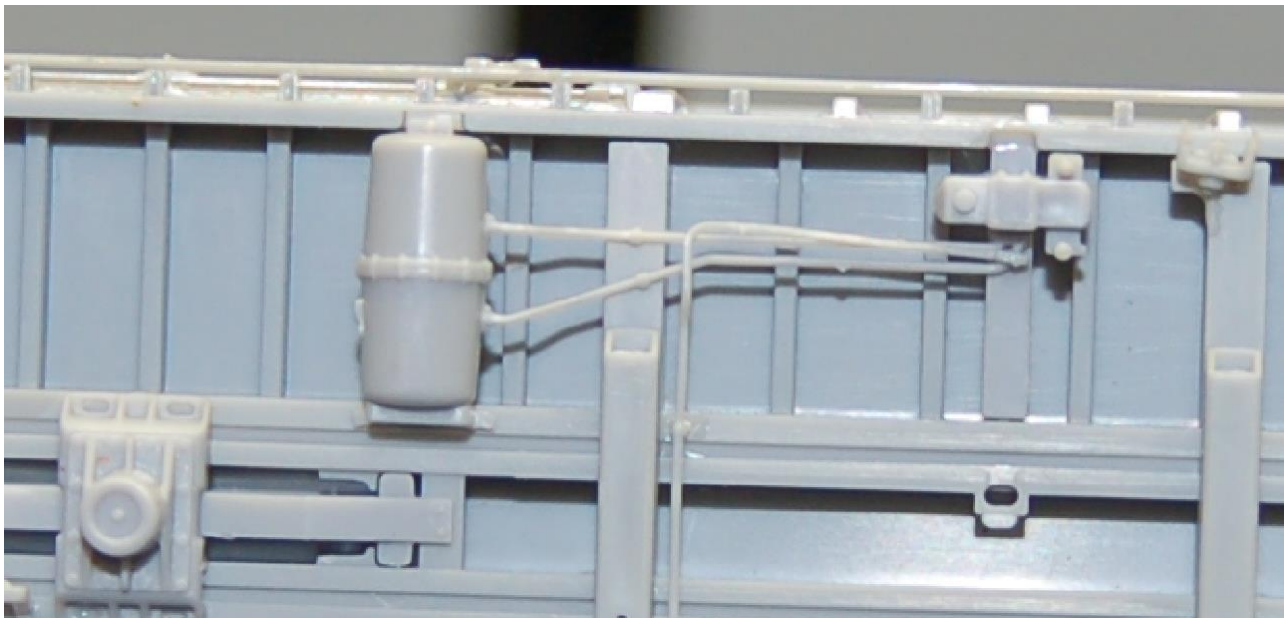
20. **Glue the retainer lever/bracket in place.** There is a small tab on the bottom of the bracket to aid in locating. Make sure that the bracket is flush with the car side.



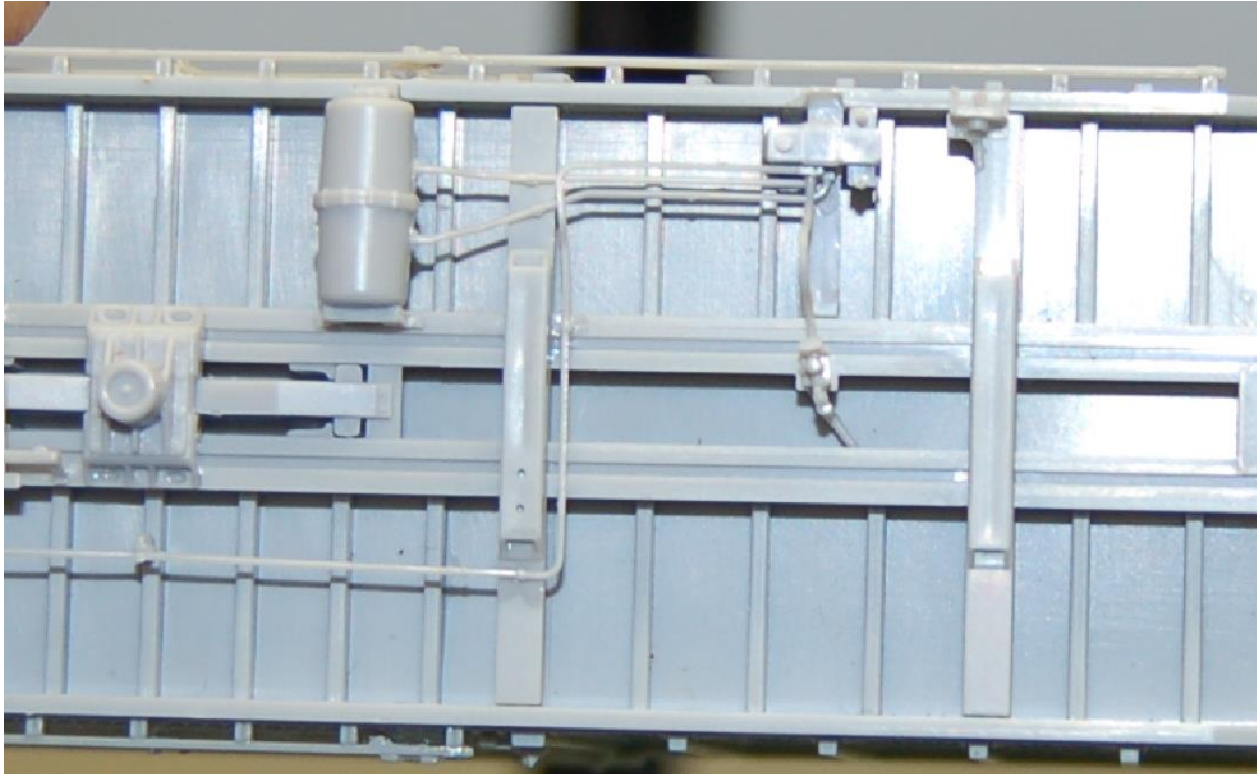
21. **Install the ABD valve.** There is a notch in the side sill and also under the center sill. The ABD valve bracket has a small tab on the end that faces the center sill. Insert it into the center sill and lay the other side into the notch on the side sill. Glue in place.



22. **Install the air reservoir.** The air reservoir fits into a notch in the side sill and two mounting holes on the center sill. The end of the pipes fit into the small locating hole at the base of the triple valve. Position the assembly and glue in place.



23. The dirt collector fits into a small mounting hole in the center sill. Insert the "T" end of the collector pipe into the center sill and gently twist it until the pipe is perpendicular with the triple valve. The end of the pipe fits into the small notch on the end of the pipe that comes from the cylinder. Glue in place.



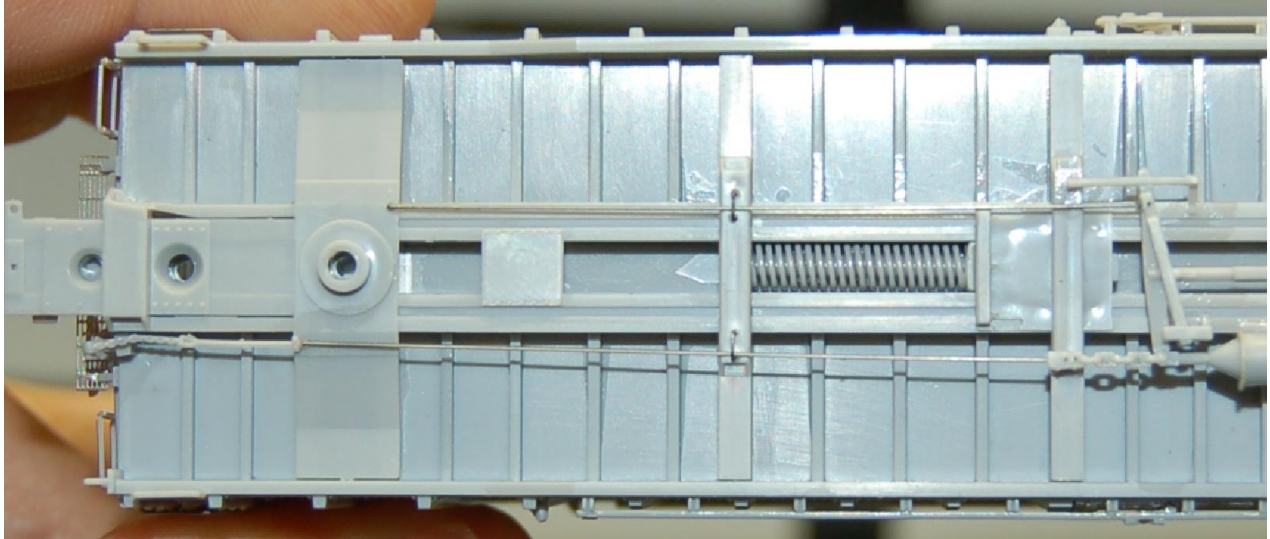
24. **Glue the brake clevis/chain in place on the B end of the car.** There is a small notch on the bolster for the end of the chain to aid in positioning.





25. **Install the wire part brake rigging to the underside of the car.** The wire parts are specific to each location, meaning they will only fit in the location that they are intended to go. They are basically a Z shape that has a long and a short side. The long side fits on the bolster end in all instances. There are also four small U shaped parts that are used on the Keystone version only. Refer to the photos for the locations and positioning of the wire parts.





Hydra-Cushion:



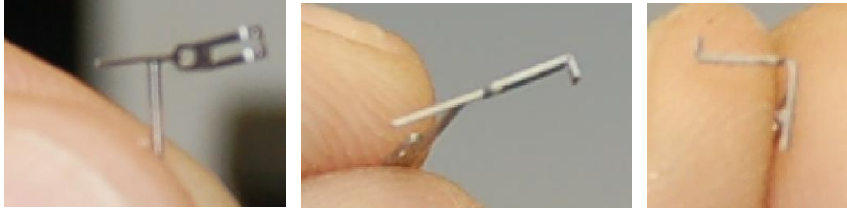
Keystone:



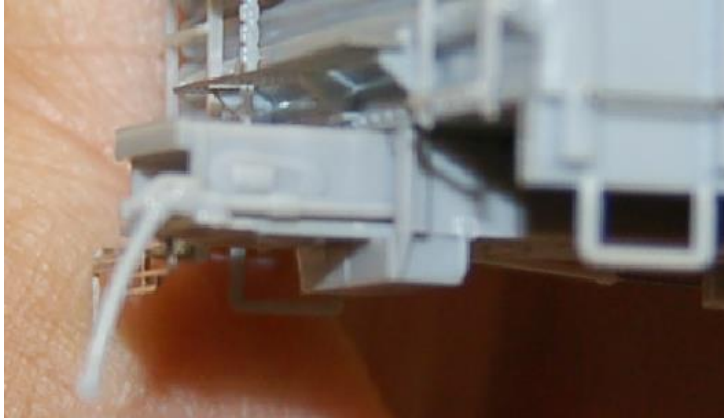
This concludes the underframe assembly.

Final Assembly

26. **Add cut levers.** These etched metal “trombone-style” parts need to be bent to shape prior to installation. The first bend is at the back end of the bracket. Bend at a 90 degree angle. The second bend is where the lever starts. Bend down at a 90 degree angle forming a Z out of the bracket. Install so that the slot in the bracket fits over the tab on the end of the car. You will need to adjust the lever so that the pin on the end fits into the hole on the bottom of the coupler pocket. When satisfied with the fit, glue in place.



27. **Add the air hoses.** There is a small pin that fits into a tab on the side of the coupler pocket. Position and glue in place.



FINISHING UP:

28. **Install the weight into the car body.** Secure with CA, contact cement, or similar adhesive.
29. **Install the roof yet, or wait?** Thinking about this step is important in finishing your car. Because the roof on the prototype PRR and PC cars was unpainted (ie it looked like galvanized steel), it is much easier to paint the roof and carbody separately. The roof can vary in color from silver to a dull grey, depending on how old the car is. Most CR and NS cars had painted roofs matching the carbody color.
30. **Paint the car.** Refer to prototype photos for the exact car color. And don't forget: if you added couplers already, mask them off so they will not get "sticky" from the paint.
31. **Install couplers and trucks with screws provided.** When all painting is complete, glue the roof in place and add couplers if necessary. The couplers needed are Kadee Whisker type. There are two different screws that hold the couplers and underframe in place. The smallest ones go in the coupler box, and the larger ones go directly behind it. The largest screws are for the trucks.

This concludes the assembly of your kit.

Thank you again for buying this car from Tangent Scale Models. Your hard-earned dollars allow us to continue to bring you more models in the future.

Want to share your creation with the world? Please feel free to upload an image of your customized Tangent model to: <http://tangentscalemodels.com/share/>

More images of finished cars are below and on the following pages.











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