



## Instructions: PRR / PC Shops G43 Series Gondola Kit

Tangent Part Numbers: 17000-01 through 17002-02

8/2016



Thank you for purchasing the Tangent Scale Models PRR / PC Shops G43 Series Gondola Kit! A few quick notes before starting:

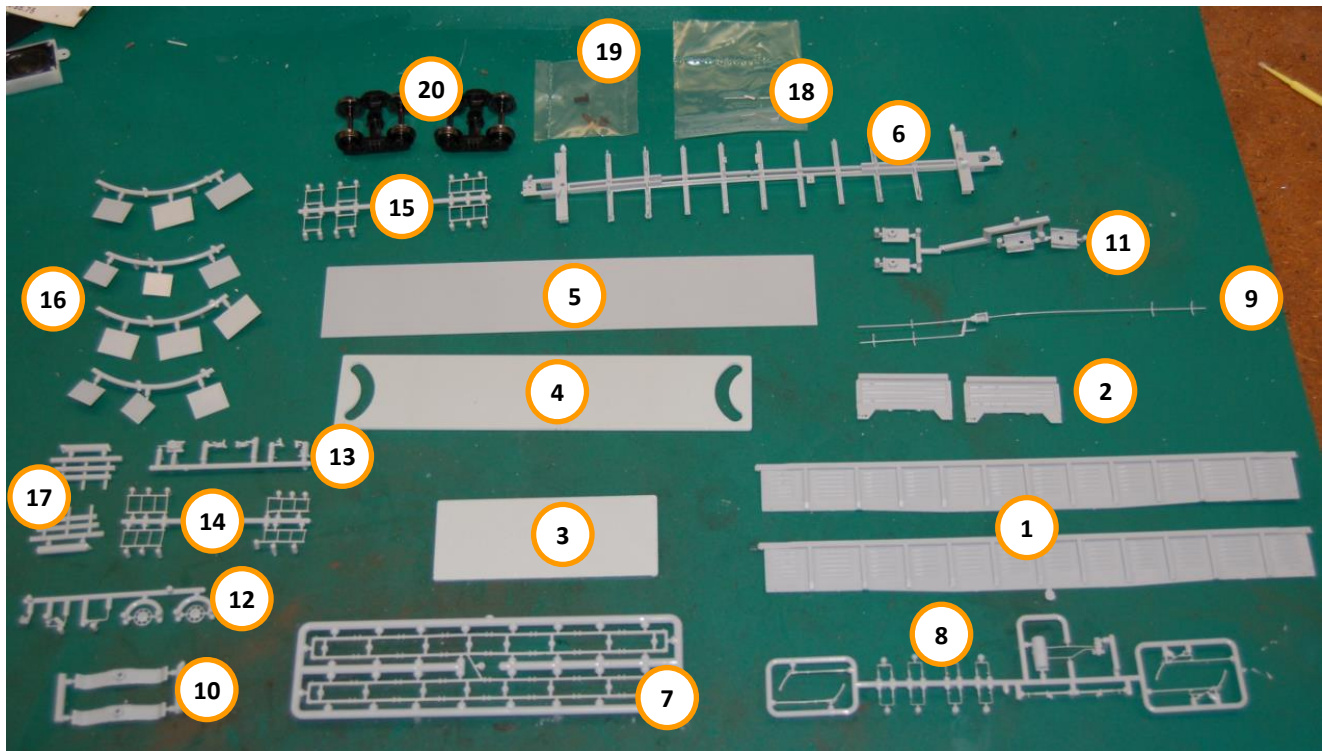
- **Instructions have many large images:** Because some model builders are visually oriented, while others prefer written instructions, we have included *both* text and photos within these instructions. As you can see, many of the images are rather large, to aid in your model building.
- **There are 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. Look for those photos with the model photos for each paint scheme.
- **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](mailto: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:

Below you will find a photo with corresponding descriptions for each part in our kit. Please note that this kit may include EXTRA parts that will not be needed for your assembly.



### Standalone parts included:

- Part 1 – Body car sides – 2 parts (3 possible paired versions depending on which kit you purchased)
- Part 2 – Body car ends – 2 parts (2 possible paired versions depending on which kit you purchased)
- Part 3 – Car Weight (Bottom)
- Part 4 – Car Weight (Top)
- Part 5 – Floor (2 possible versions depending on which kit you purchased)
- Part 6 - Underframe

### Part sprues included:

- #7 Sprue contains floor stringer assembly
- #8 Sprue contains air reservoir, AB valve, air hoses, stirrup steps
- #9 Sprue contains the brake cylinder and brake rigging
- #10 Sprue contains the bolster plates
- #11 Sprue contains the coupler boxes / draft gear
- #12 Sprue contains the brakewheels, L-shaped connector, brake fulcrum, and air release valve

- #13 Sprue contains the coupler cut lever brackets (4 total, 2 of each type) and brake housing
- #14 Sprue contains the side and end ladders
- #15 Sprue contains the side and end ladders
- #16 Sprue contains the various placard parts to house the railroad logos and reporting marks and road numbers
- #17 Sprue contains the interior wood load shift protectors that protect the end of the car (only applicable to builds with coil parts)

**Parts bags included:**

- #18 Bag contains all of the etched and wire parts
- #19 Bag contains all of the screws

**Standalone parts included:**

- #20 Tangent's 100-ton Roller Bearing trucks with 36" CNC-machined wheelsets

**Parts needed/recommended:**

- Couplers. The coupler boxes for this car are designed for Kadee "whisker" shank couplers - #158.

**Tools needed/recommended:**

- Liquid styrene cement for plastic to plastic bonds (Tamiya green bottle, Testors Liquid Styrene Cement are two example products)
- CA-type cement or cyanpoxy – for wire to plastic joins (sold in hobby shops, or in hardware store as "super glue" under various brands in the small squeeze tubes) – best applied with a piece of scrap wire
- Canopy cement – for etched brake step to plastic roof joins (made by Pacer and other brands) (Also Pliobond is a good substitute)
- Hobby knives - #11 and #17 are ideal
- Small Phillips head screwdrivers
- Tweezers

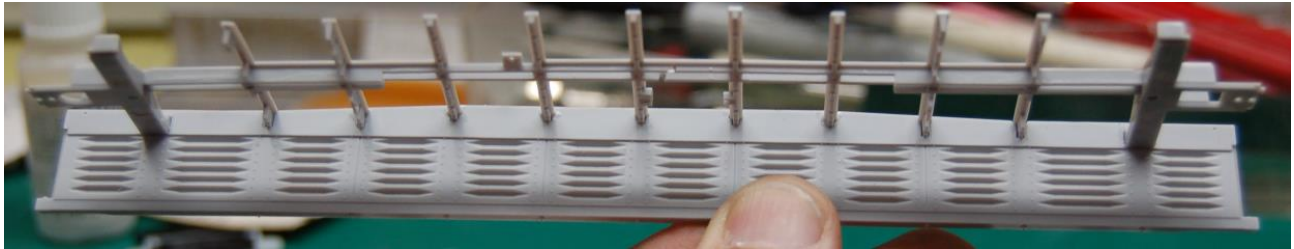
**THINGS YOU SHOULD KNOW**

- **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 access to multiple parts 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 3 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/parts/> or simply go to [www.tangentscalemodels.com](http://www.tangentscalemodels.com) and click on "View & Buy Models" and then "Parts."

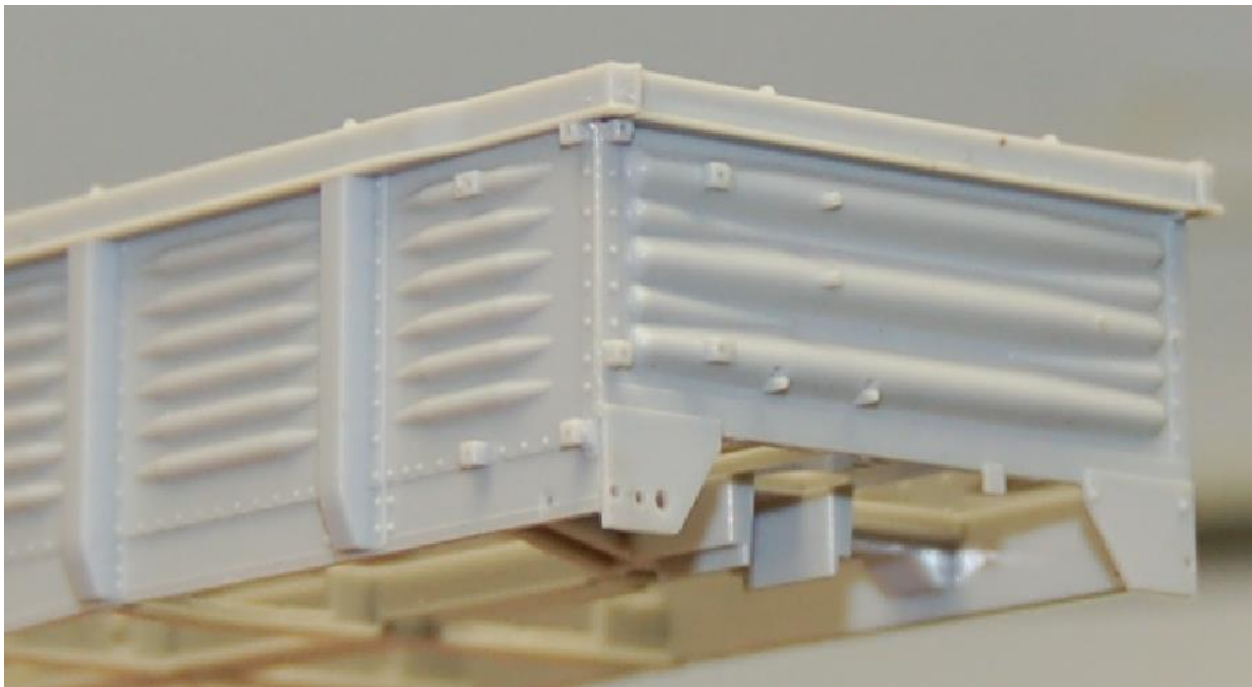
**Build the body:**



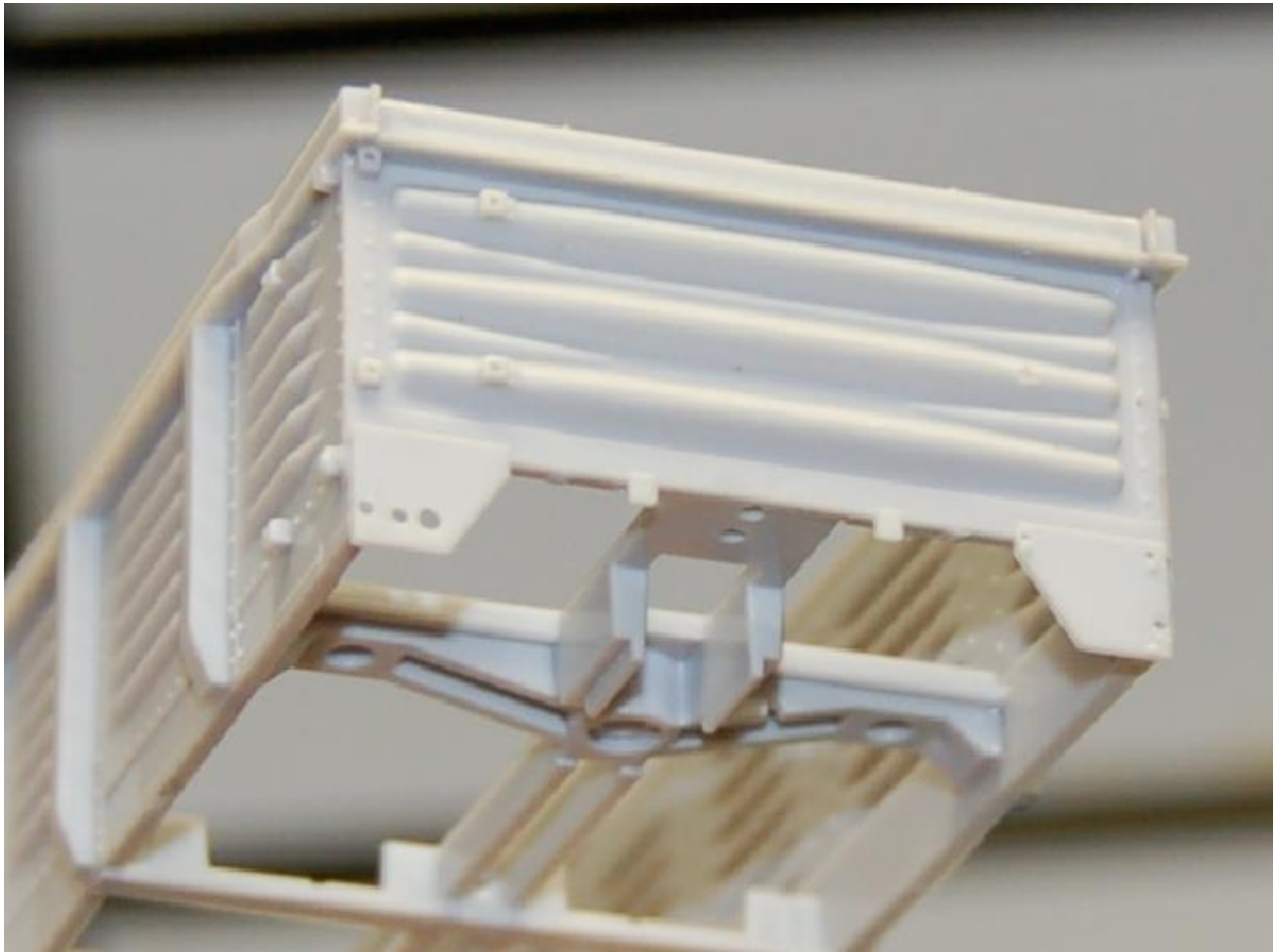
1. **Overview.** To assemble the G43 Series body, you will begin by building the two gondola side and end parts around the underframe. The cross members of the underframe fit into notches that are cast into the side panels. The ends will then attach to the sides. There are two different end castings, one for the A end and one for the B end. The B end (brakewheel) has a few more holes and pins that let you know which one it is. The underframe also has an A and B end, with the small rectangular mounting pad for the cylinder facing toward the B end. Clean all flash and remove all mold release pins from the side, end, and underframe castings, including the small tabs on the very end of the coupler pads.
2. **Glue sides to underframe.** Begin body assembly by taking one side panel and the underframe. Lay the side panel flat on your bench and insert the cross members of the underframe into the notches that are cast into the side panel and glue in place. After letting the glue set up for a few minutes (to make sure the underframe does not come out of the side panel), glue the other side to the underframe and again, let it sit for a few minutes.



3. **Glue B-end to side/underframe assembly.** Locate the B end casting and position it between the sides making sure the top of the end panel is flush with the top of the sides, and that the coupler platform fits flush with the bottom of the casting. Also make sure that you put it on the end that has the cylinder pad closest to it. Glue in place.



4. **Glue A-end to side/underframe assembly.** Repeat the process with the A end and glue in place as well. Make any adjustments to the whole assembly to ensure it is square, and let the glue dry completely before proceeding.



**Complete the underframe assembly:**

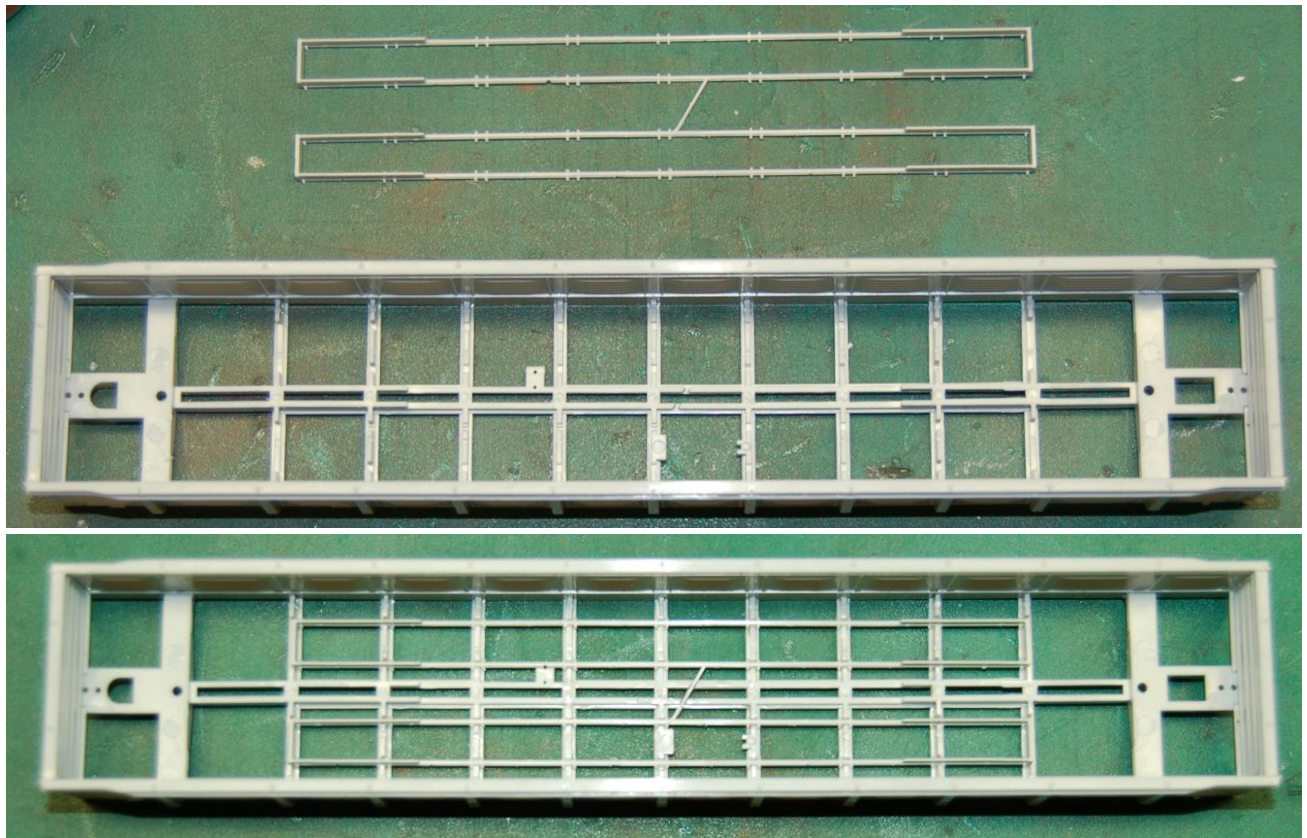
5. **Remove floor stringer assembly from part sprue.** Locate the train line assembly and very carefully remove all release pins and any flash. When you are done, it should look like this.



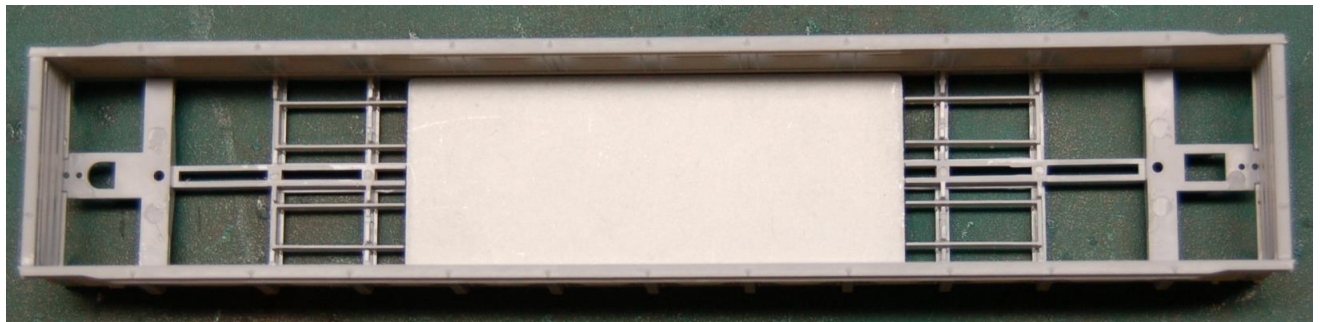
6. **Install the floor stringer assembly into the floor.** With the carbody upright, lay the stringer casting into the recess of the underframe. There are two small notches in the center sill for



the train line that will only allow the stringers to fit in one way. Place it in so that the four corners are oriented with the flanges facing up to allow placement of the small weight into the recess.



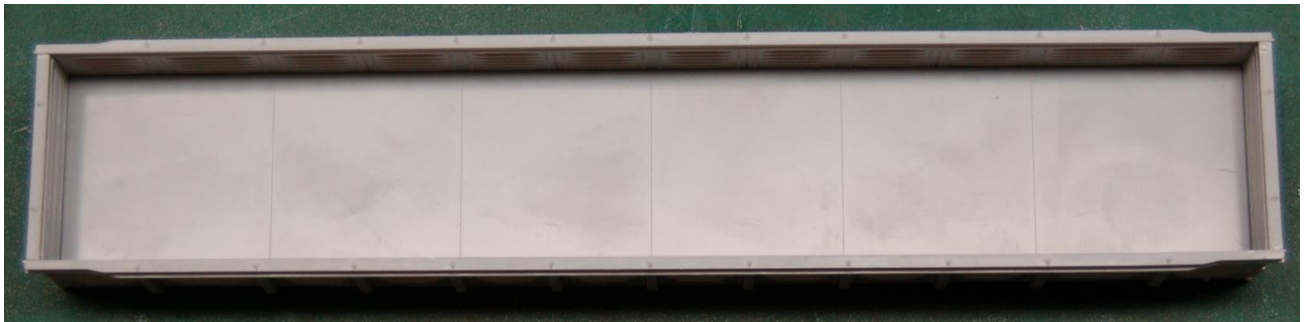
7. **Insert the bottom (smaller / shorter) weight into the body.** Just a note before starting the next assembly sequence: to fit the weights and floor into the body assembly, you may need to gently spread the sides apart, so it is important that the body assembly has been assembled with liquid styrene cement, and that the body assembly has cured before proceeding. Insert the small weight into the center recess and secure to the underframe/stringers with CA.



8. **Insert the top (larger / longer) weight into the body.** Lay the large weight on top of the small weight making sure that it sits between and is flush with the bolsters. Secure with CA.



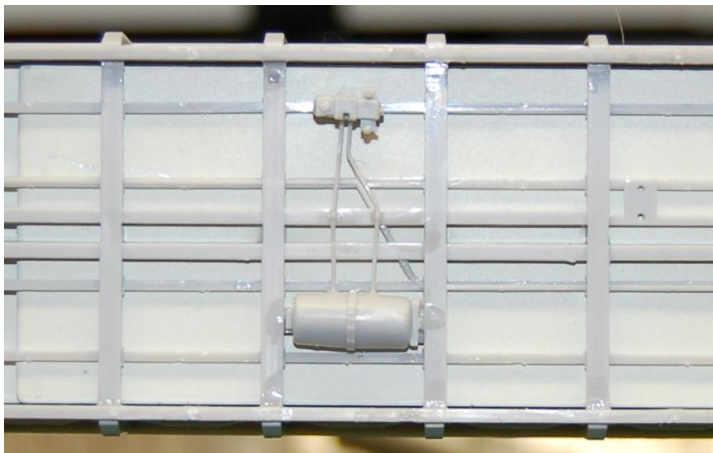
9. **Install the floor.** Lay the floor on top of the weight and secure with CA making sure that it is sitting flat all the way around. Please note that we offer a steel floor and a wood floor for these cars. The G43B class originally had wood floors. Tangent offers additional floor options for coil versions of these kits, including "hybrid" wood-steel floors. See our parts webpage for the G43 series for more floor options you might want to consider for minimal extra cost. <http://www.tangentscalemodels.com/parts/>



10. **Coil interior options.** While this kit build is for a PRR as-built car, we do offer coil interior parts to replicate the cars with coil interiors that were applied later in their service lives. The end of this document shows some images of our fully-assembled coil interiors for reference.

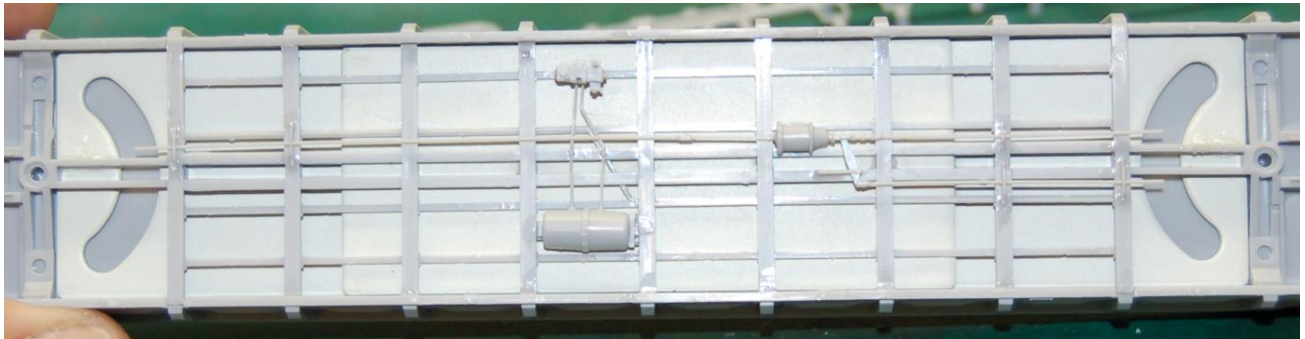
### Complete the car's details

11. **Install the brake reservoir/ AB-valve assembly.** Flip the car over to begin the assembly of the underframe. Begin with the reservoir/ AB-valve assembly. Very carefully de-sprue and glue in place.

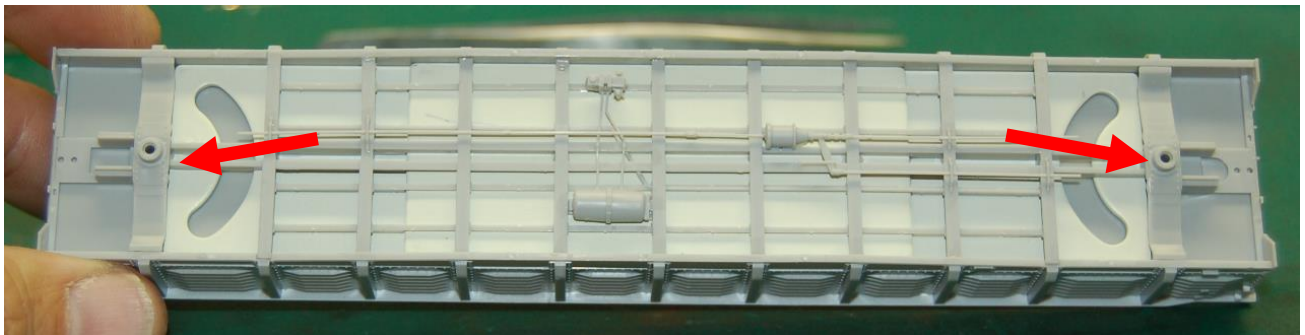




12. **Install the brake rigging/cylinder assembly.** Locate the part and position it on the underframe as shown. Glue in place.



13. **Glue the bolster plates in place.**



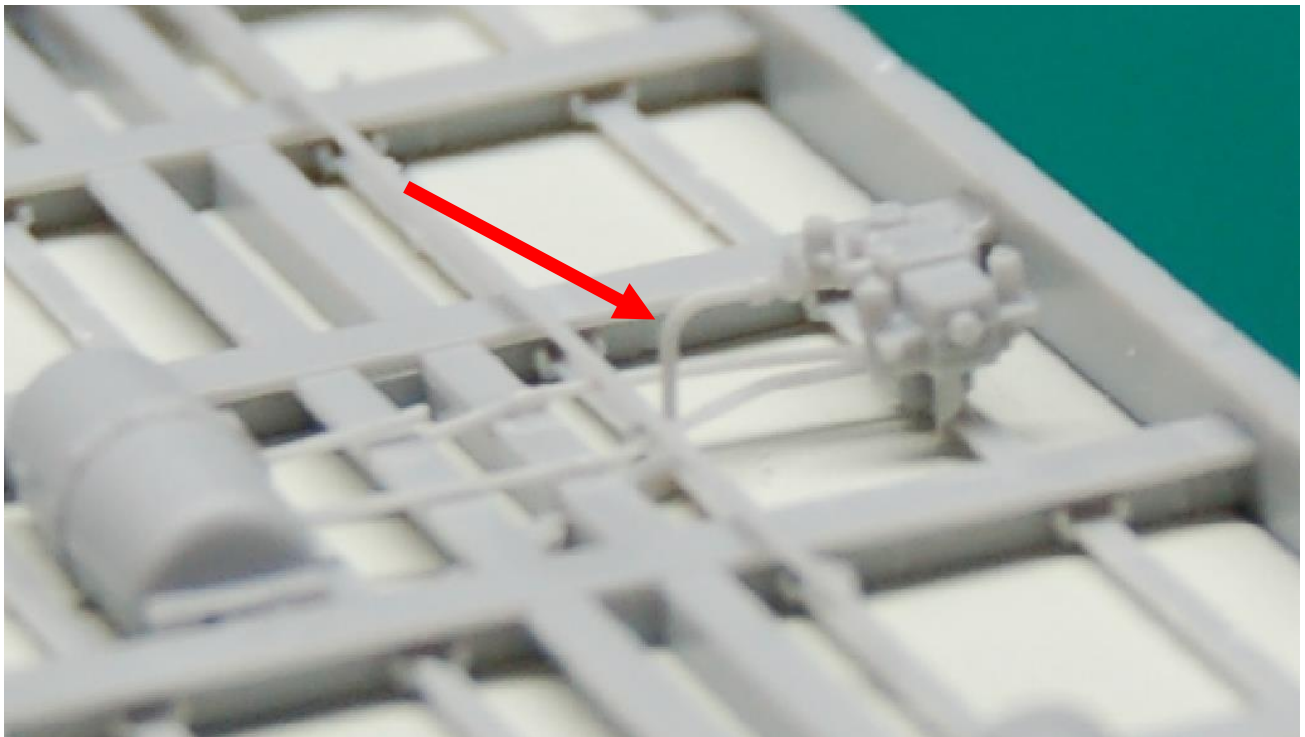
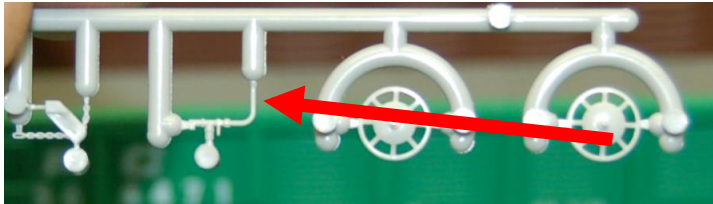
14. **Install the draft gear / coupler boxes – part 1.** The coupler boxes are two piece assemblies. The base piece glues to the underframe (with watery styrene cement), and the cover screws to the base. Glue the base to the body using the guide pins to orient, making sure that it is perpendicular to the end.



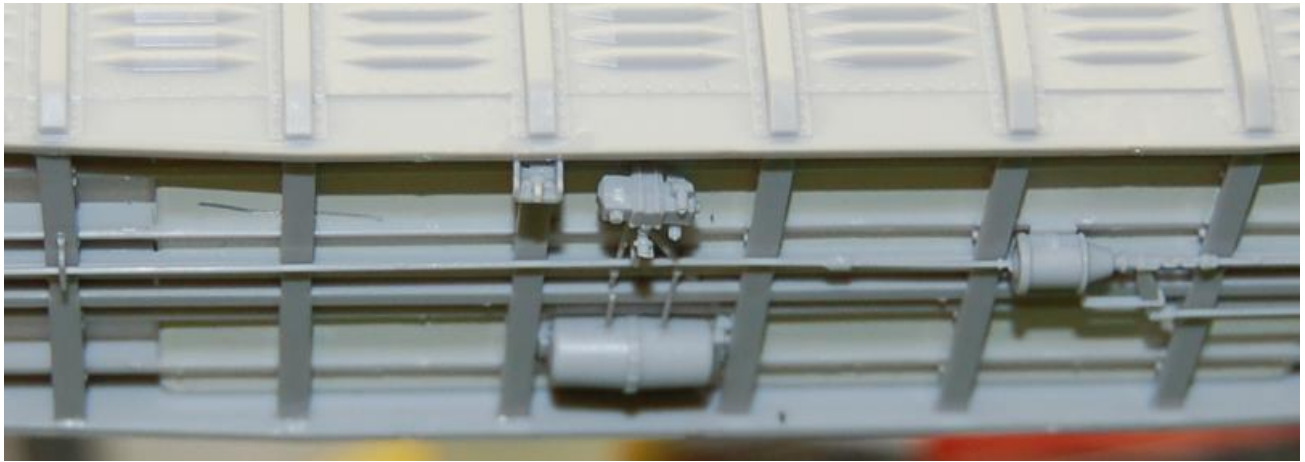
15. **Install the draft gear / coupler boxes – part 2.** This part is optional for now. You can install the rest of the draft gear now without the coupler, painting the parts “assembled” on the model and then removing the cover to install the couplers later. Or, you can skip this step and paint all of the parts separately.



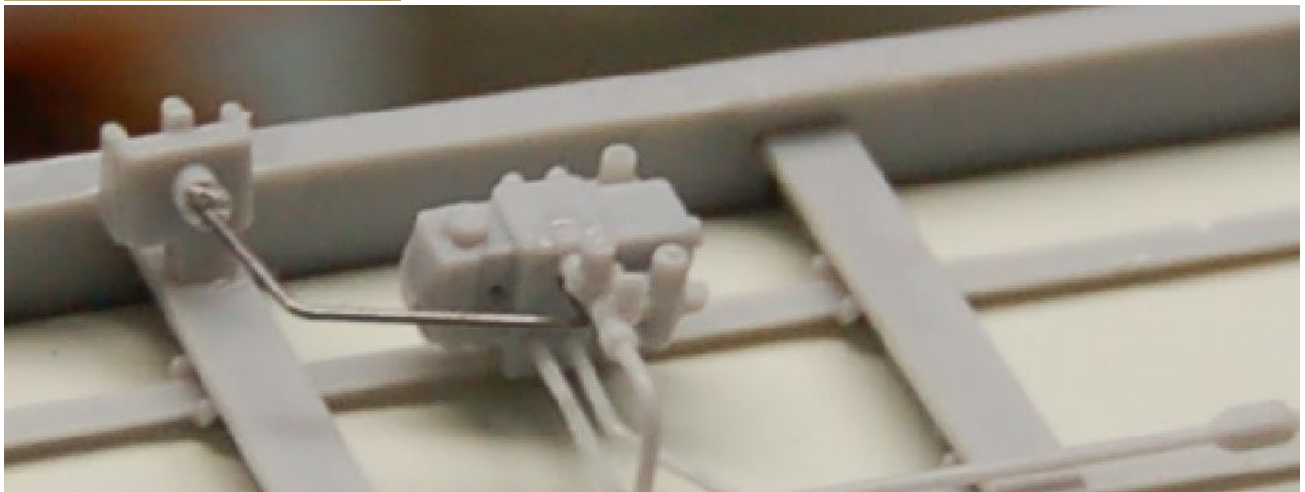
- 16. Install the dirt collector L-shaped piping to the AB-valve.** Install the dirt collector pipe into the small notch in the AB-valve letting the other end of the pipe rest on top of the stringer. Glue both sides of the pipe in place.



- 17. Install the air release valve.** From the same part sprue as the part above, install the (plastic) air release valve on the underframe next to the AB-valve. This is a U-shaped plastic part and the small notch in the stringer will aid in proper positioning.

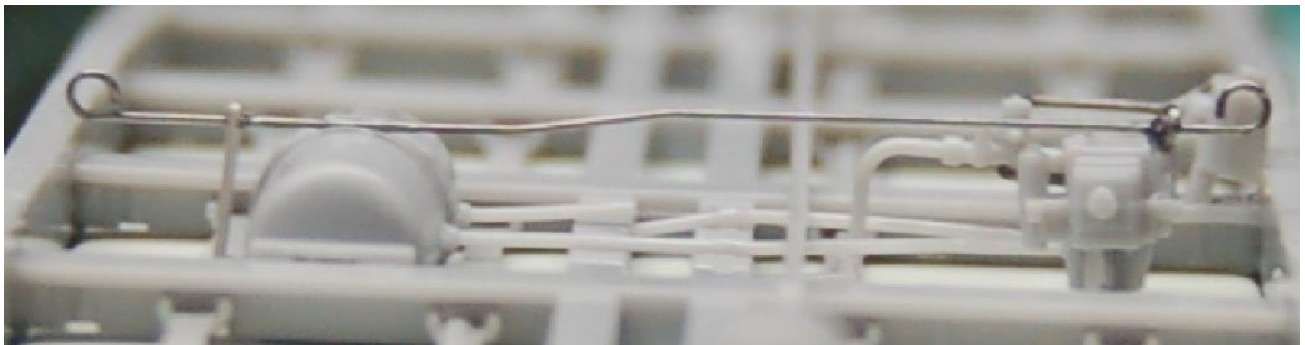


- 18. Install the air line from the air release valve to the AB-valve.** After the glue is dry, locate the small "C" shaped wire and orient it so that the longer leg goes into the hole in the back of the bracket, and the shorter leg goes into the back of the AB-valve. It may need to be bent slightly to get it to fit. Do not glue yet.

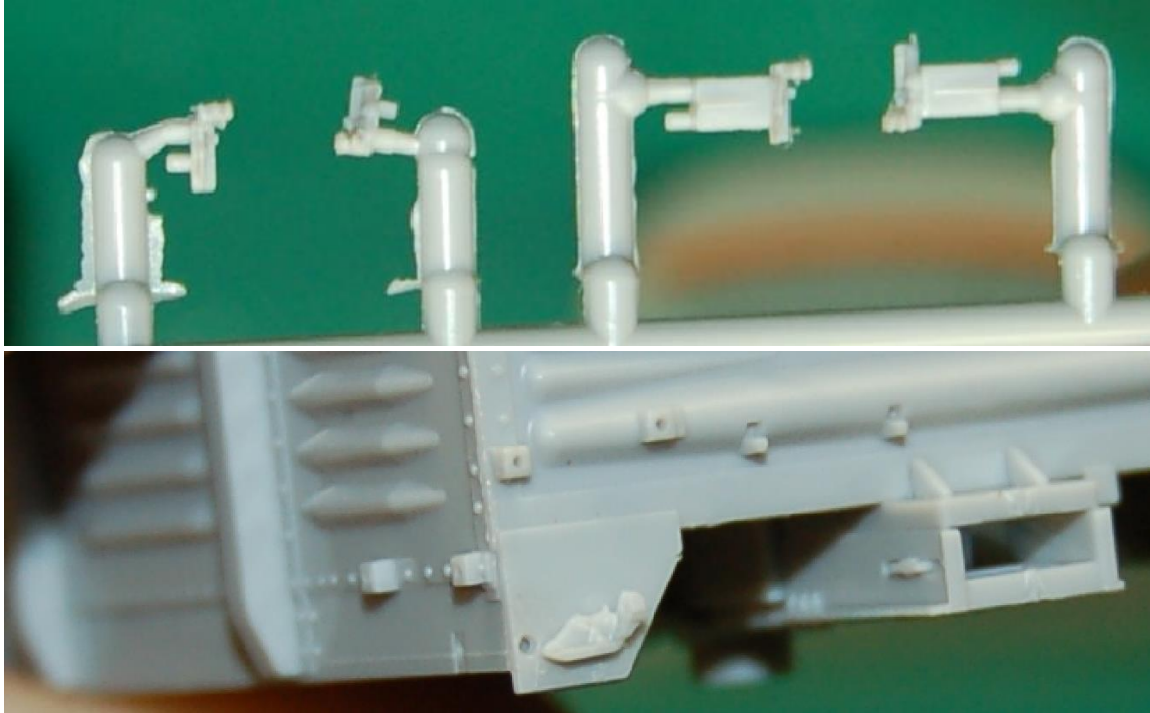




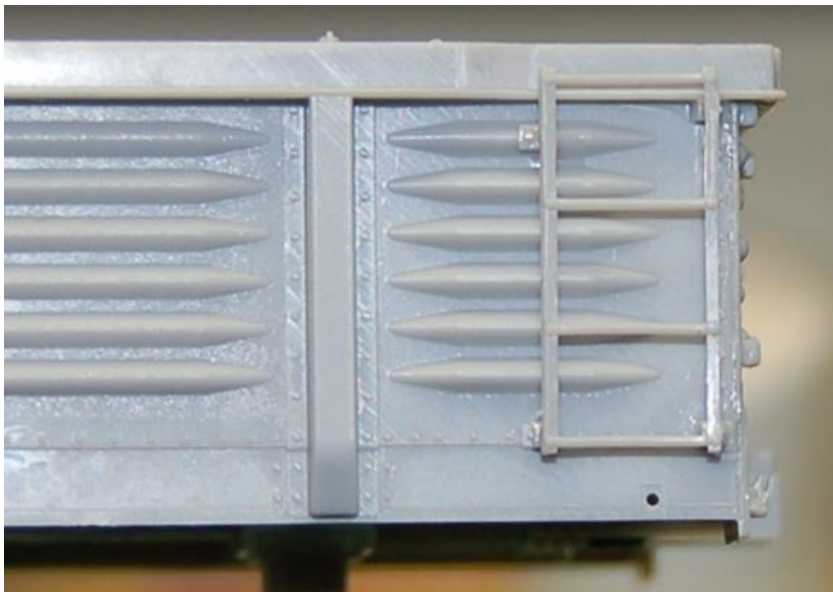
**19. Install the release rod lever assembly.** There are three wire parts to the release rod lever assembly; the wire lever, a wire eyebolt, and a wire bracket. You will need to feed the eyebolt and the bracket onto the lever. In order to do this you will need to slightly open one of the loops at the end of the lever. When you have done this, feed the eyebolt and the bracket onto the wire with the eyebolt going on the longer side of the offset in the lever. Close the loop at the end of the lever. When you've fed both parts onto the wire, insert the end of the eyebolt into the hole on the top of the triple valve and the end of the bracket into the small hole in the stringer next to the reservoir. Secure both with CA, and position the lever so that the loops are facing down (toward the ground) and it is centered between the sides. Secure with CA.



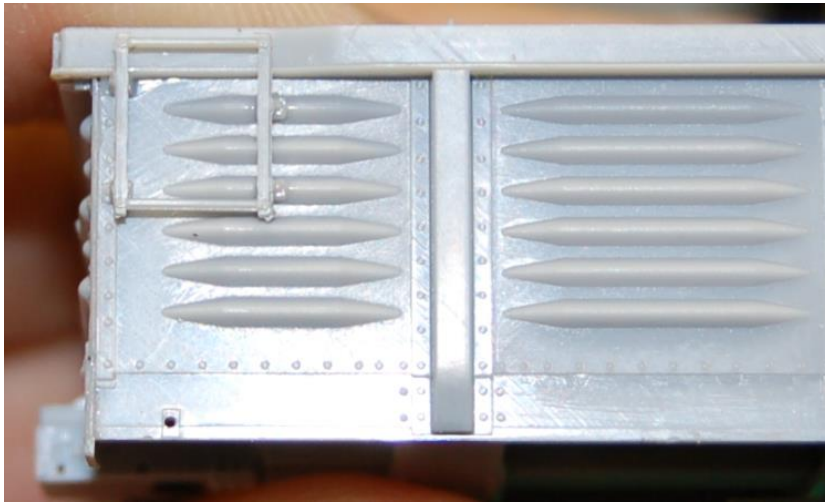
**20. Install the coupler cut lever brackets.** There are two different types of plastic coupler cut lever brackets, one for a standard underframe (in image below, on the left), and one for a cushion underframe (in image below, on the right). The standard part fits flush on the end sill, and the cushioned underframe part has an extension bracket. Choose the one appropriate for your car and glue in place in the two holes in the corner of the end sill (it's keyed, so it will only fit in one way). We will install the wire coupler cut levers later.



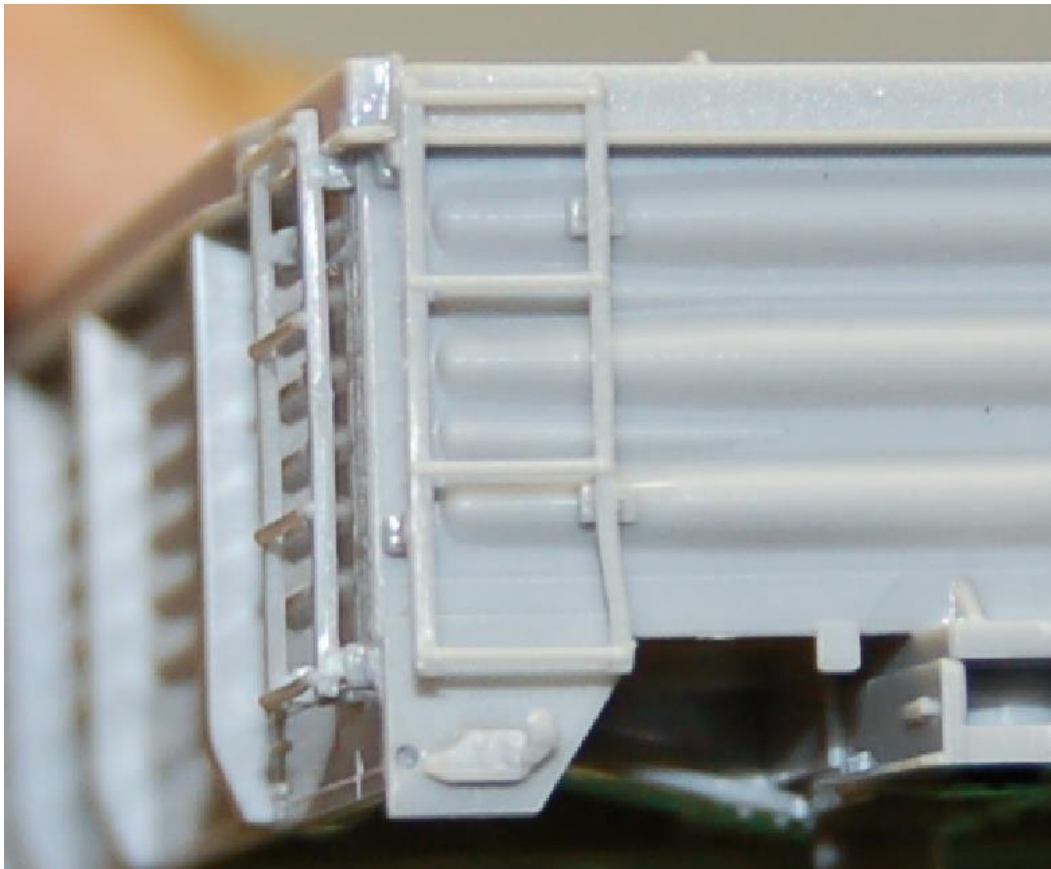
**21. Install the right side ladders.** Remove all mold release pins and de-sprue the right side ladders (the wider, four rung ladders). They are keyed to ensure correct positioning. Glue in place on both sides.



22. **Install the left side ladders.** Do the same for the two rung left side ladders. Again, these are keyed for positioning. Glue in place.

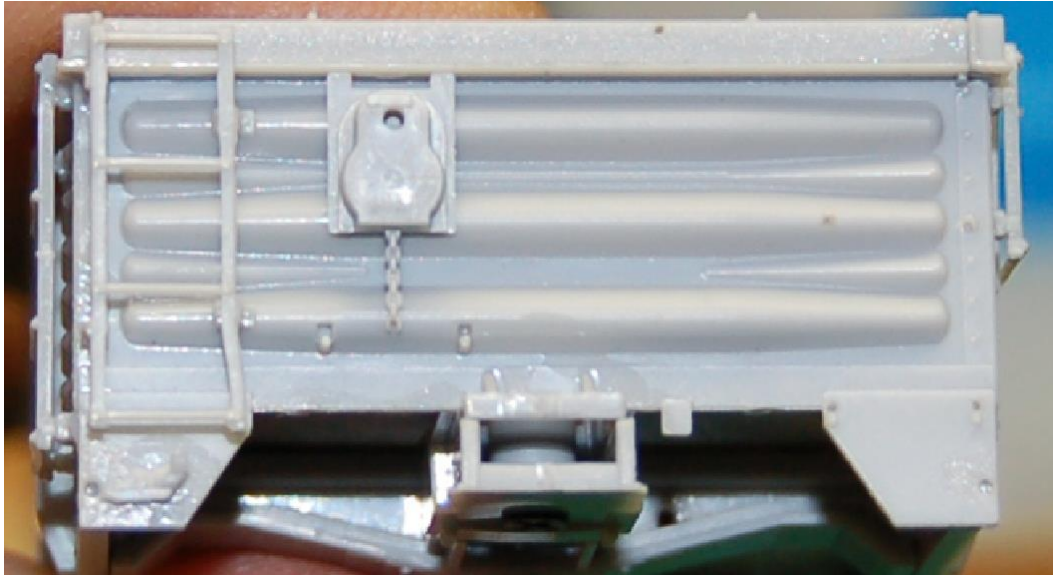


23. **Install the end ladders.** These have a “kick out” at the bottom of them – please do not try to bend these back since that is how they are supposed to look!

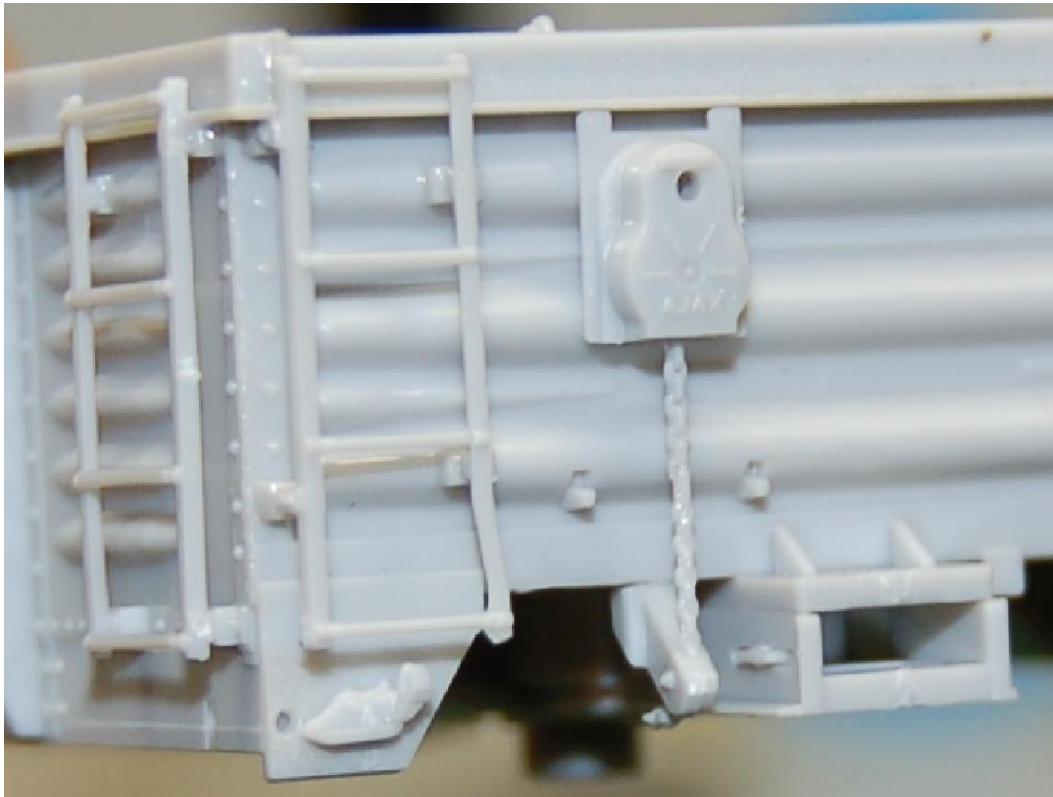


24. Clean off any flash from the brakewheel housing and glue in place.

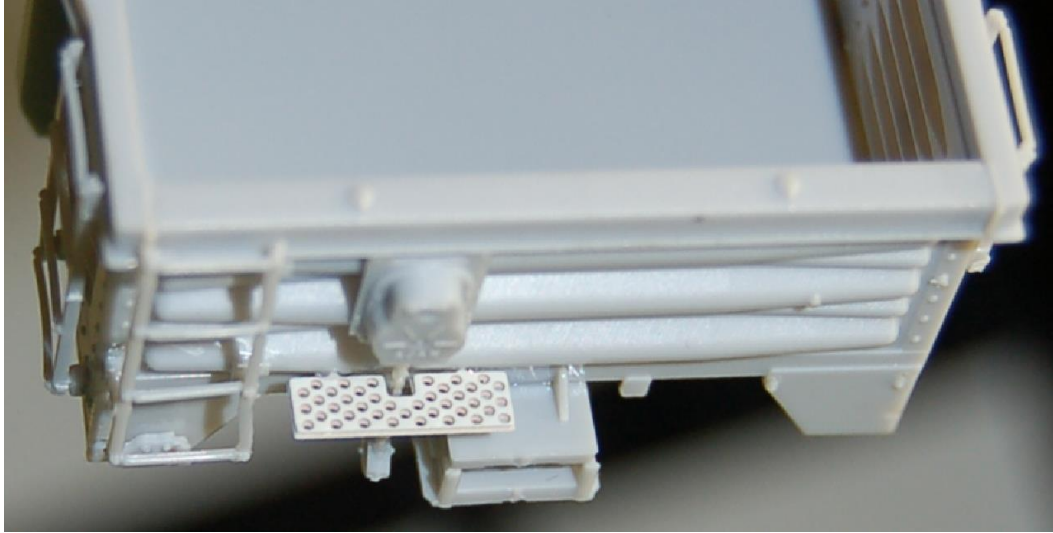




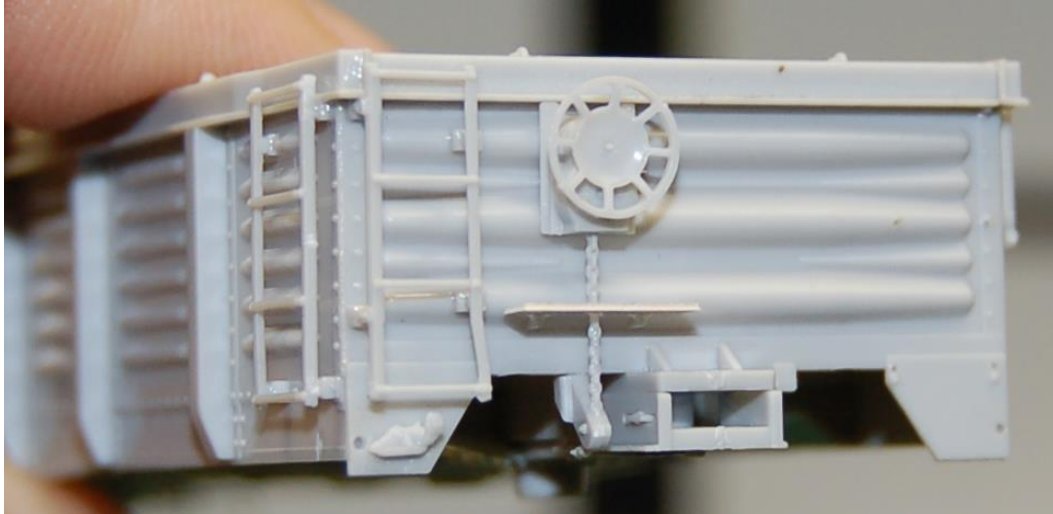
25. **Install the brake fulcrum part.** De-sprue the fulcrum part being very careful not to break the chains as they are very fragile. Using the notch in the bottom of the end sill to locate, glue the fulcrum in place. Also glue the chain from the fulcrum to the chain that comes out to the brakewheel housing.



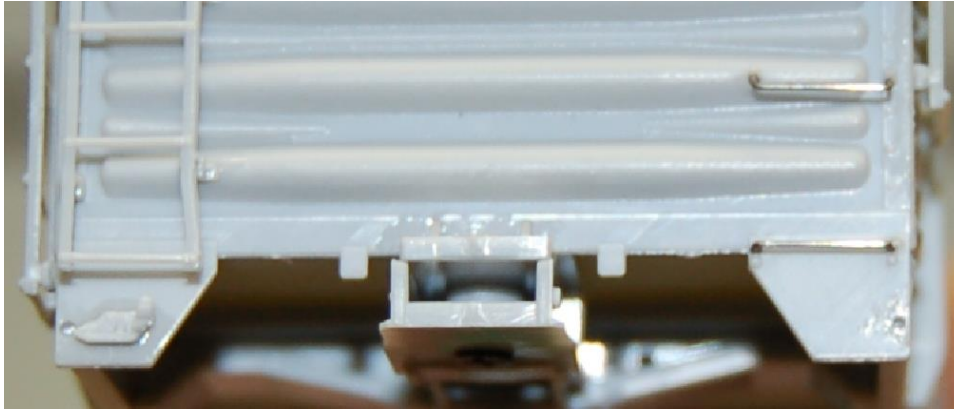
26. Glue the brake platform in place using CA or canopy cement.



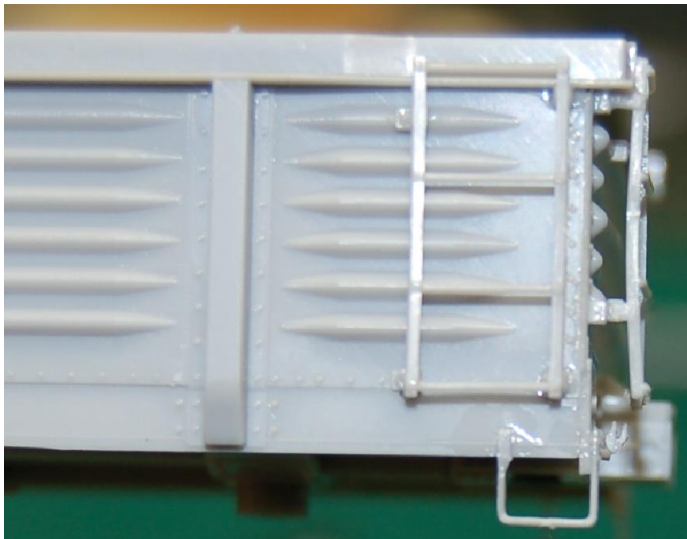
27. **Install the brakewheel.** Glue the brakewheel into the brakewheel housing.



28. Install the wire grabirons. There are 4 total; two straight and two that are slightly offset. The straight grabs go into the lower right corner of the ends, and the offset ones go into the upper location on the ends with the longer leg going toward the outside of the car, with the bend going down. Secure with CA.

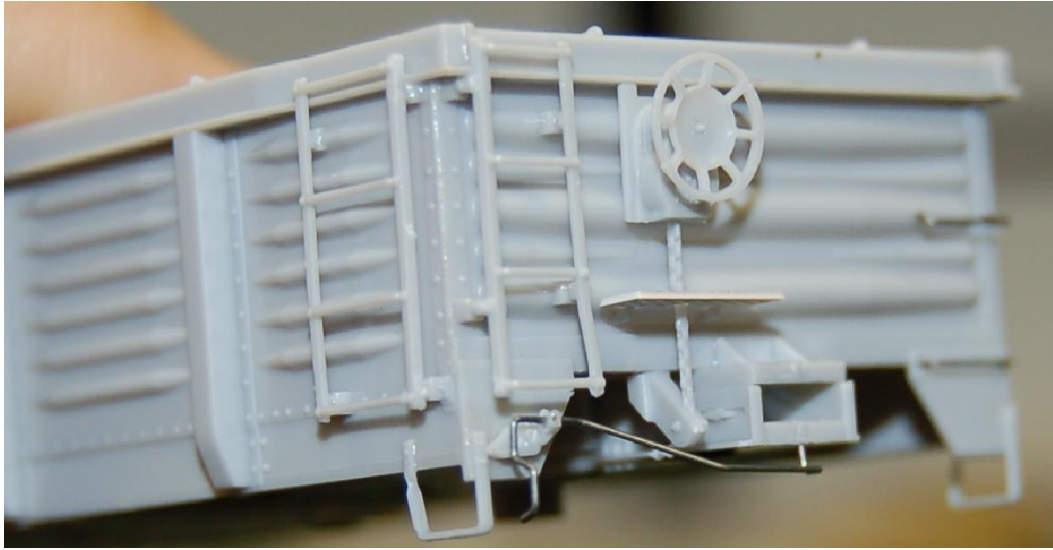


29. **Install the stirrups.** There are two types of stirrups; ones that both legs fit on the side sill, and ones that one leg fits on the side and one on the end. Choose the one for your kit and glue in place.

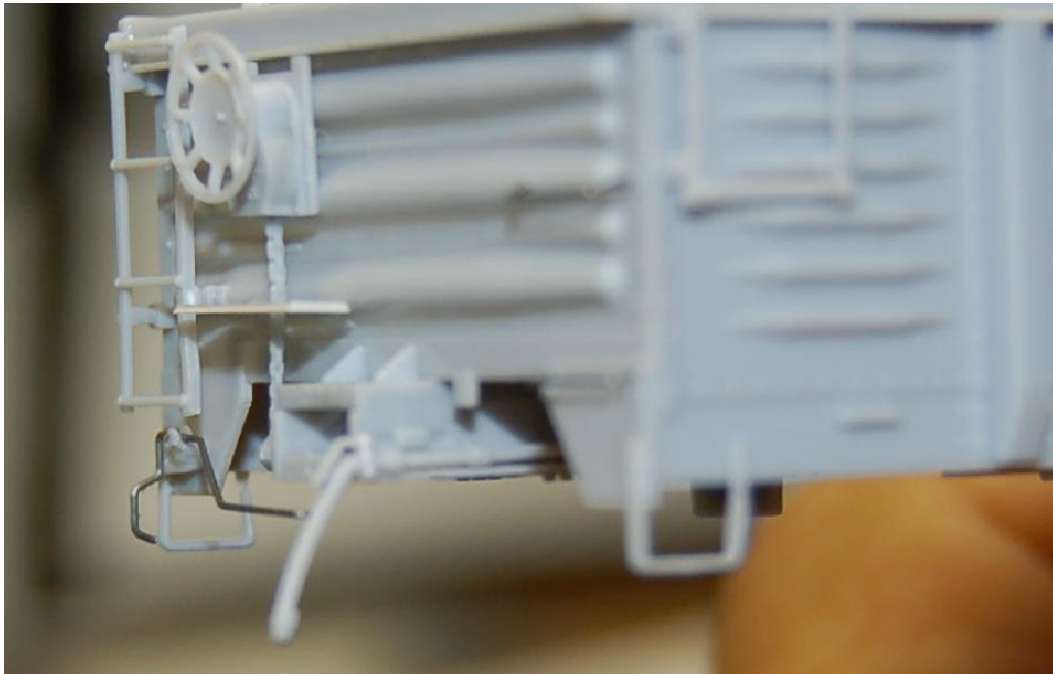


30. **Install the coupler cut levers** by inserting the end of the lever into the hole in the bottom of the coupler box, and resting the other end of the wire in the notch in the bracket. At this time only glue at the bracket to allow removal of the coupler box after painting to add couplers. Once all painting is complete and couplers are added, glue cut lever into coupler box cover.

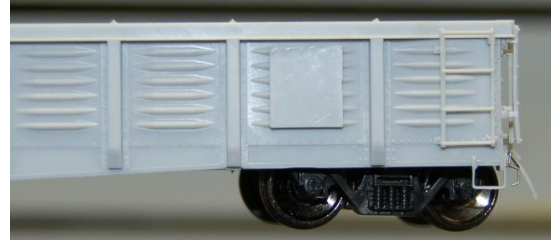




31. **Install the air hoses** in the locating holes of the coupler box being careful not to glue the coupler box together. Note there are two air hose options. The longer ones are for the cushioned draft gear (G43B only).



32. **Add placards if your paint job requires them.** Consult photos for this step because we offer several placard part options. For example, if you are building a PRR (or former PRR) version, locate side panels with the numbers 35, 36, and 37 on the back side. You will need one of each per side. Mount on the car side so that they cover the corrugations completely, and also ensure that they are straight using the top chord for reference. Panel 37 (the smallest of the three) is for the PRR Keystone will be mounted vertically and centered in the panel. Refer to the photos for placement.



33. All that is left is to mount the trucks after painting, and this completes the assembly of your G43 kit.

This concludes the construction phase.

#### **FINISHING UP:**

1. **Paint the car.** Refer to prototype photos for the exact car color you need. And don't forget to mask the couplers so they will not get "sticky" from the paint.
2. **Decals.** We highly recommend decal sets that were designed specifically for this car, available in PRR and PC. You can order them from ICG decals by looking them up at google, or you can go directly here: <http://home.mindspring.com/~paducah/> and then looking at part numbers SE-15 and SE-16.

This concludes the assembly of your kit. We hope you have enjoyed building our PRR / PC Shops G43 Series kit. We thank you for your support of 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 on the following pages.



(Coils available for purchase  
from Tangent separately!)



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