Instructions: PS-2CD 4740 Model Kits

Revised 6/2008

Plastic Parts included:

- Body shell
- Parts Sprue #1 – "Roof and Hatches"
- Parts Sprue #2 – "Underframe and end components"
- Parts Sprue #3 – "End frames and air line"
- Parts Sprue #4 – "Side ladders" – two styles
- Parts Sprue #5 – "Brake details"
- In parts baggie – "alternate" jacking pad parts

Etched metal parts included:

- Etched metal roofwalk – either Apex (Kit #10000) or Morton (Kit #10001)
- Etched metal crossover platforms – Apex (Kit #10000) includes both Apex and Morton type, similar to prototype application. Morton (Kit #10001) includes only Morton crossover platforms, also matching prototype application.

Wire Parts included:

- All grab irons
- Coupler cut levers and eye bolts

Screws included:

- 2 screws for trucks (small head)
- 2 screws for couplers (large head – recessed into box to "disappear")

Other parts included:

- A complete set of trucks and wheels

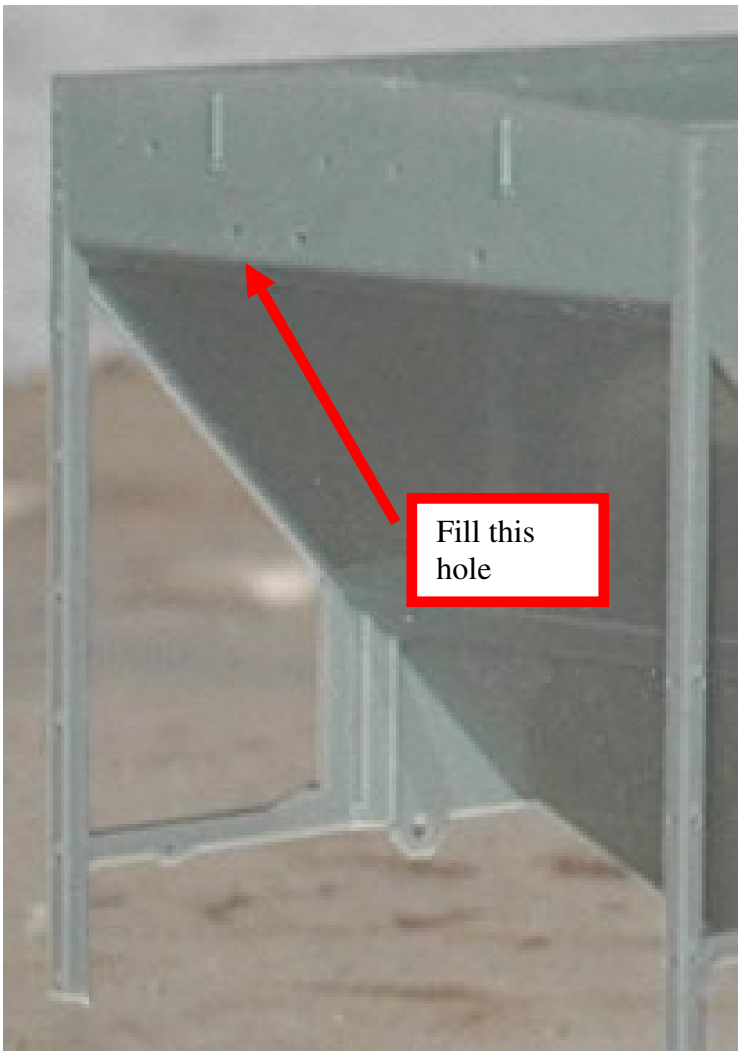
Tools needed:

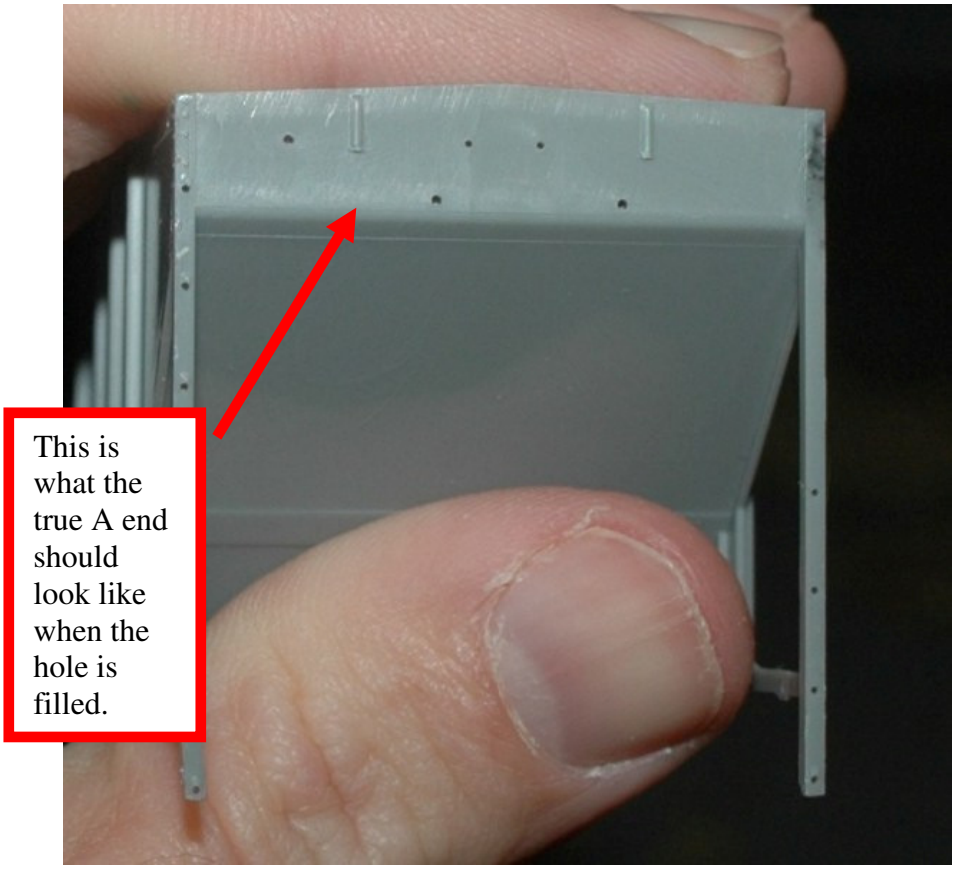
- Screwdriver
- Styrene cement
- CA-type cement
- Hobby knives - #11 and #17 are ideal
- Sprue nippers speed things up!
- #51 drill bit and pin vise to drill for the coupler screw (screw could be replaced or shortened as well)

1. **Cleanup:** Turn car over onto the roof, and with a chisel blade knife remove the sprue scrap from the bottom center of the center bay. Keep the 2 parallel mounting "circles" intact – these note which way the outlet gates face in a later step.

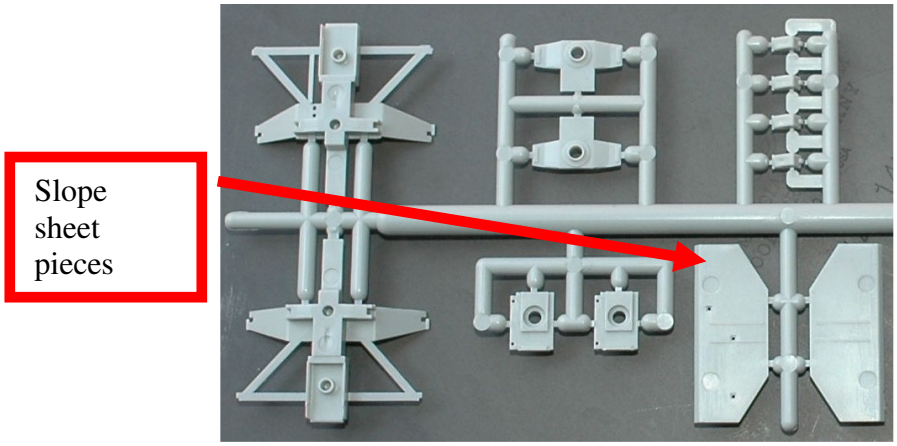
2. **Recognize the A and B ends of the Car:** It is now time to understand where the B-end should be on the model. The B end is where all of the brake appliances will go. Turn the carbody onto its side with the brake line hanging clips facing you (these are the small tabs that run along one side of the car, underneath the sidesill). When the brake line clip side of the car faces up, the B end of the car will be to the LEFT. The A end will be to the RIGHT. The only difference between the two ends at this point is the extra hole to cement plastic parts into on the B end. Due to a molding error, the A and the B ends on the first set of undecorated kit bodies are reversed. This reversal does not impact the kit-building process and can be ignored.

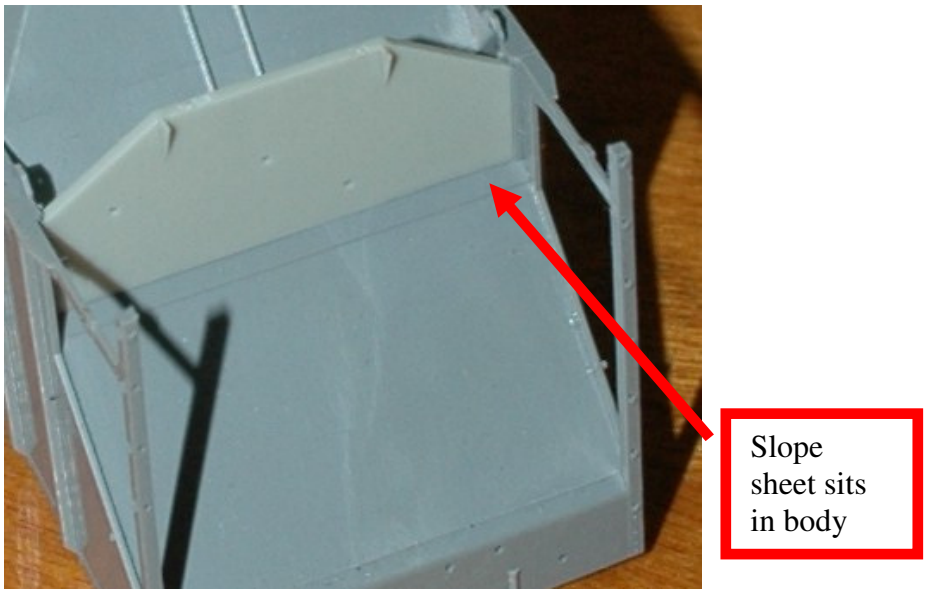
3. **Fill extra hole in A end.** If you choose to fix the A and B end swap mentioned at the end of item number 2 above, follow this step. As discussed above, there is one extra hole in the "A" end and one too few holes in the true B end. For maximum accuracy, fill in the following hole on the model's true A end with 0.020" styrene rod. This side will remain the A end.



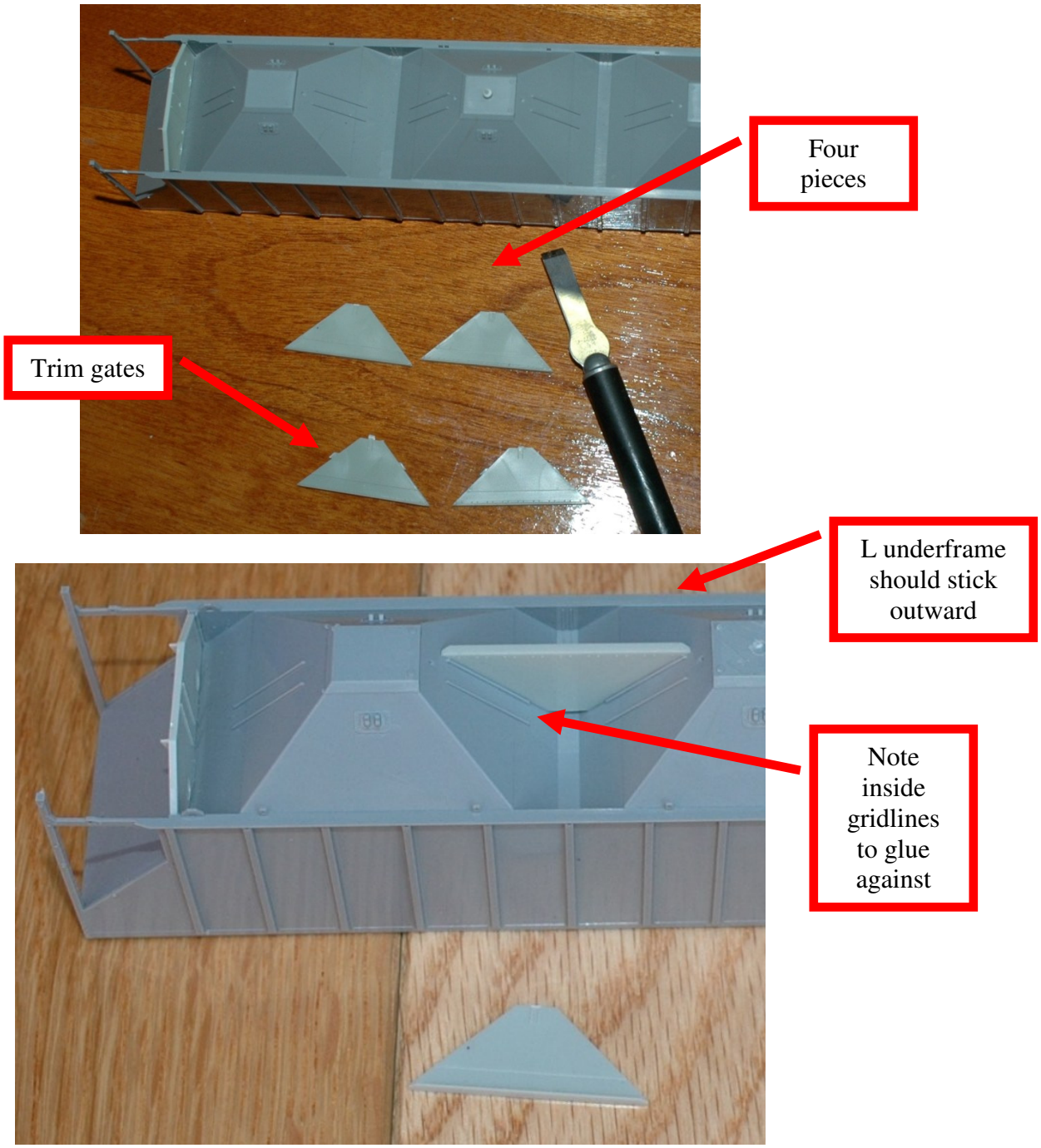

This is what the true A end should look like when the hole is filled.

4. **Attach slope sheet:** Remove the slope sheet pieces from the parts sprue pictured below. Note that one slope sheet part has 3 holes in it; this is for the model's B end, or where the brake appliances will go. Note there is a "recess" where the vertical parts of the end slope sheets sit. The front part of the channel needs to line up with the slope sheet part you are adding. In other words, the slope sheet part is not long enough side to side, and the channel part in the car is the remaining width for the part. Repeat the process at the "A" end with the remaining part.

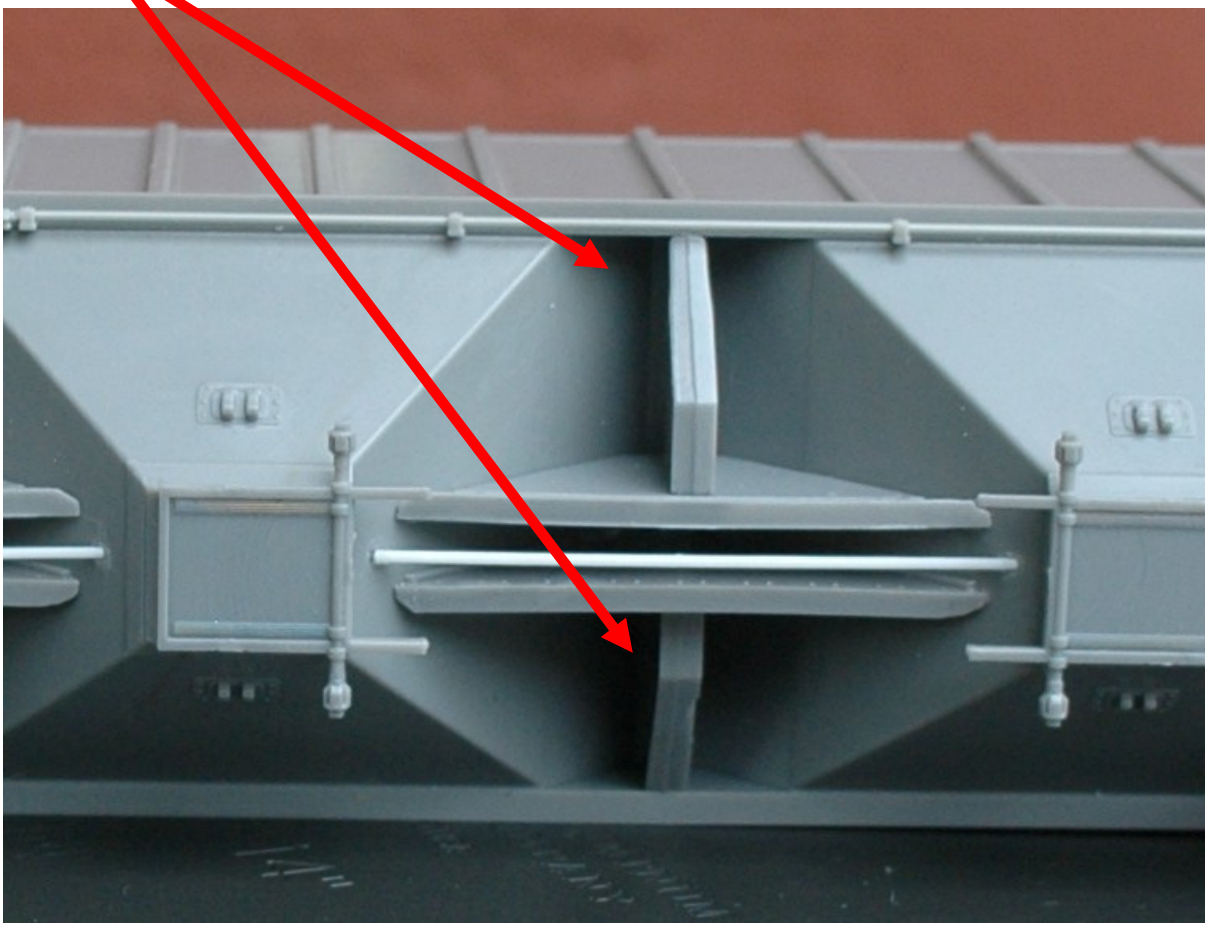




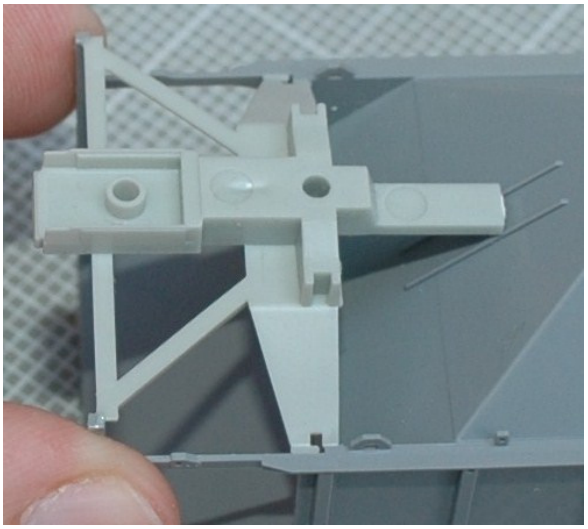
5. **Attach centersill between the three bays:** With the car on its roof, cut the four large triangular centersill pieces from the Underframe part sprue. After cleaning up the gates, cement to the underside of the car with the raised guides on the inside used as a place to cement to. Make sure that the "L" part of the bottom of the car faces out. Repeat this process for the same parts between the other two bays.



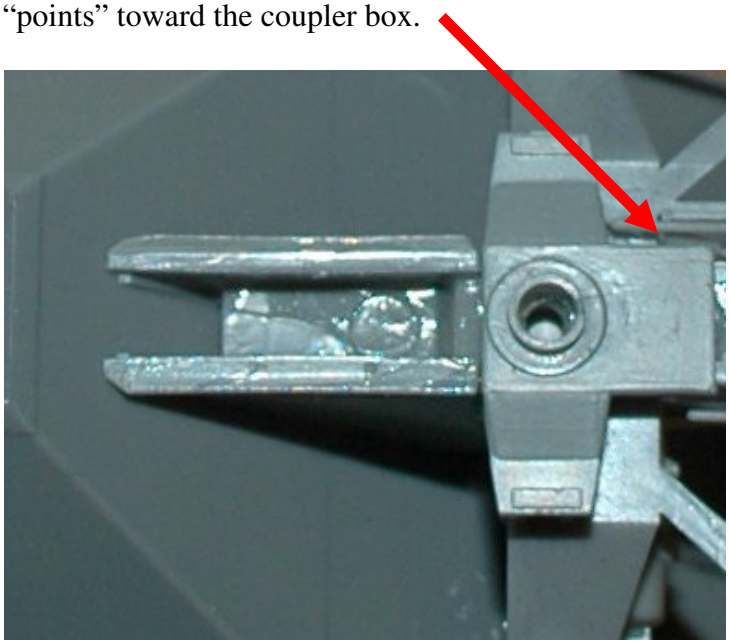
6. **Install the 4 centersill crossmembers.** These install perpendicular to the carbody side and the centersill, fitting between each. Prototypes built after October 1969 likely do not have these parts.



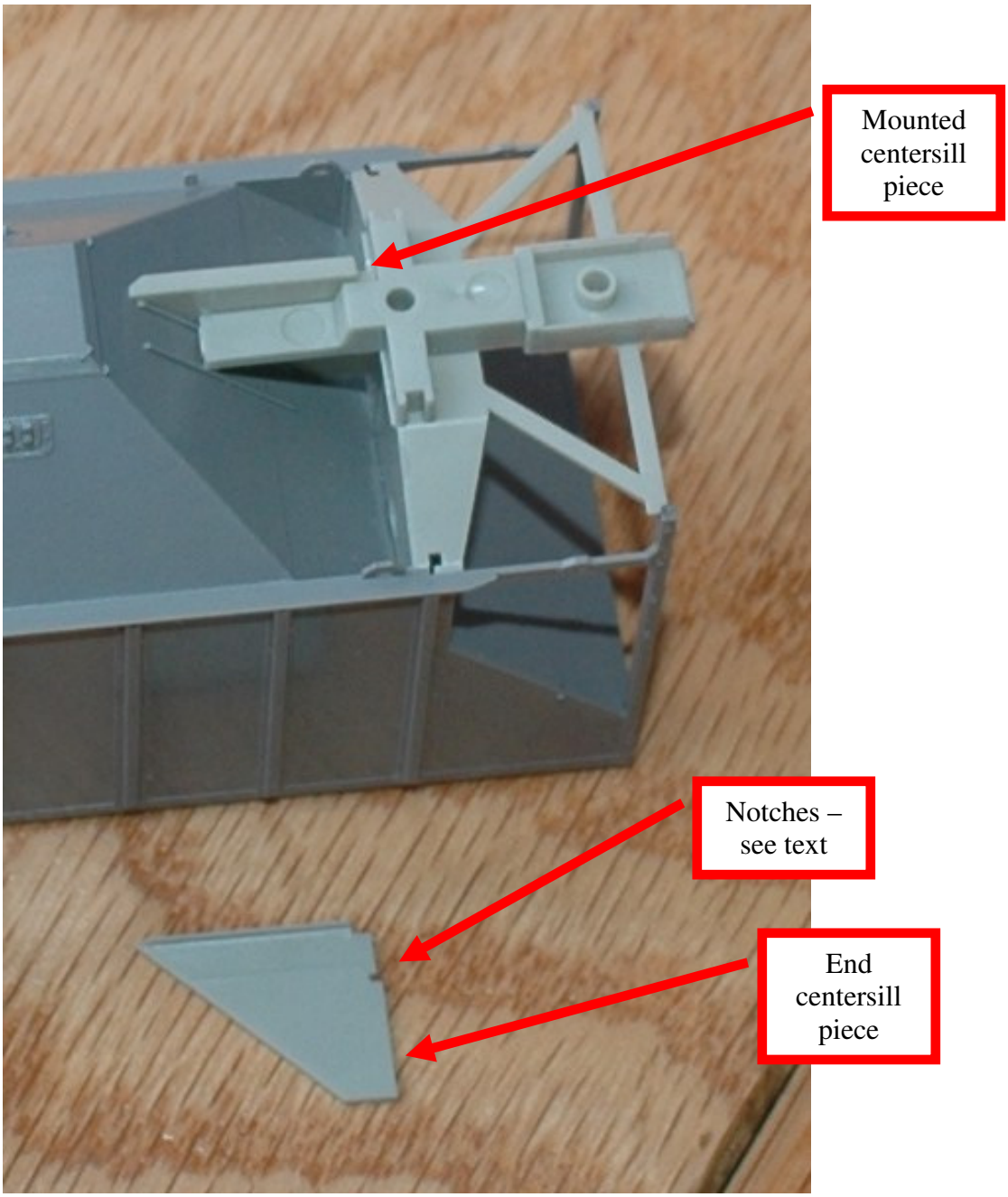
7. **Attach coupler bolster pieces:** Degate and clean up the coupler end bolster pieces from the Underframe parts sprue (see photo below). After making sure to test fit the parts first, mount the A end part on the A end; the A end part has NO small holes in it for mounting the brake appliances. Then, mount the B end part in place. For each of these, the angled bolster slope needs to mount with the end tucked parallel with the sidesill of the body mold. To make these fit correctly, squeeze the angled parts to ensure a tight fit into the car sides, and then press in the center. Cement as appropriate. The corners of the part should meet up with the bottom of the body sell corner posts. As the part dries, make sure it remains parallel to the carbody, resting on the round tab on the slope sheets.



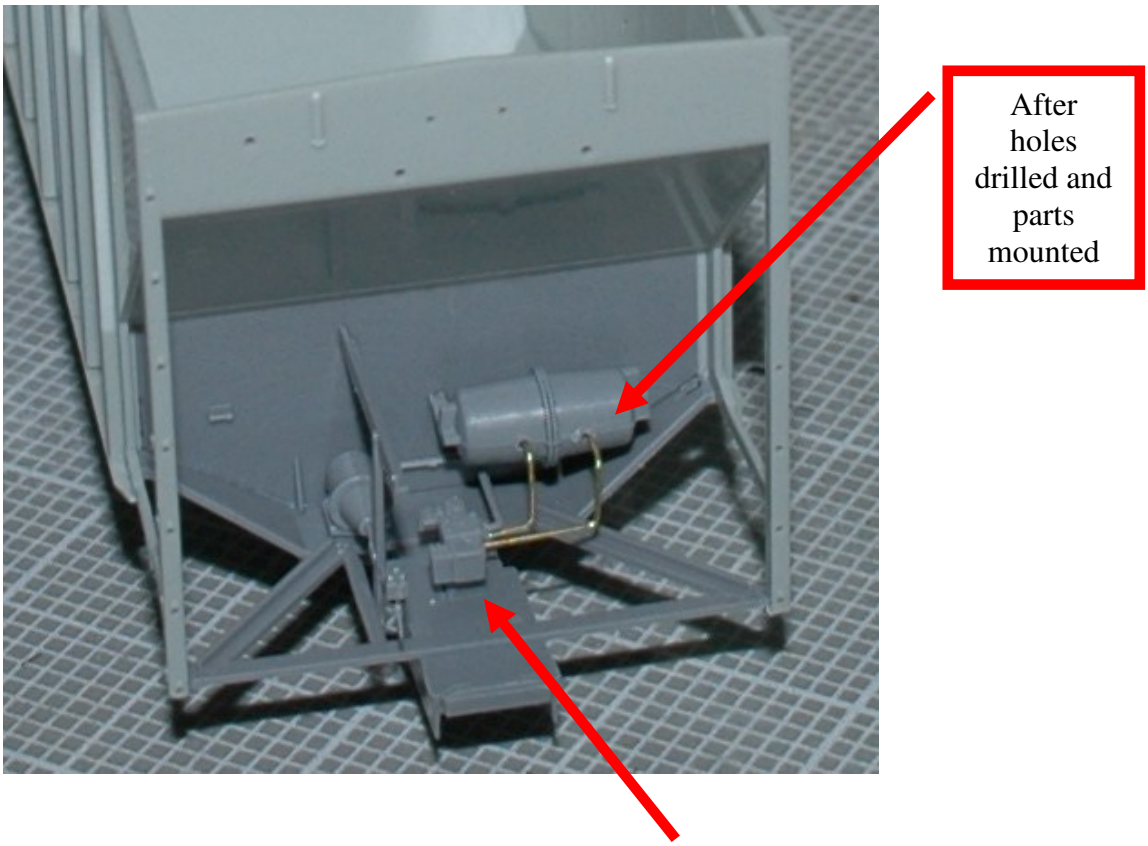
8. **Attach bolster plates:** Degate and clean the two bolster plate parts. These need to be cleaned especially well on the sides because this signature part is visible above the trucks of the car. The parts should be mounted so the hole for the truck screw lines up with the hole in the coupler bolster, from step 7 above. Note the small ridge in the plastic that helps to locate this part on the car. The long tab "points" toward the coupler box.



9. **Attach centersill ends between each end bay and end sheet:** Desprue the remaining four end centersill pieces. These mount between the end bays and the slope sheet end attached in step 4 above. Again, use the guides along the bay angle and on the back side of the slope sheet end for mounting guidance. Note that there are notches for the back part of the bolster to slide the centersill piece into.

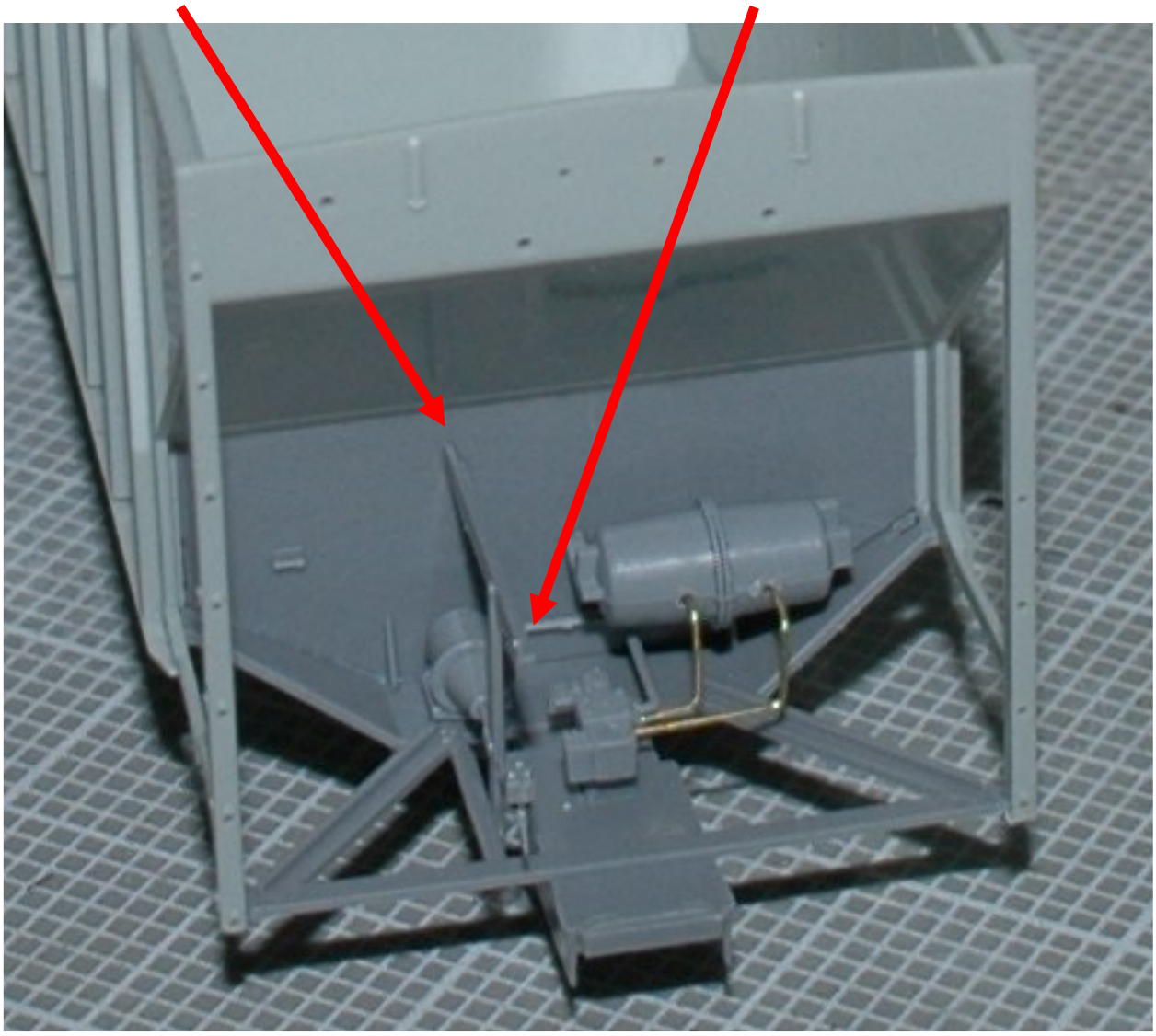


10. **Attach the air reservoir to the B end slope sheet:** Note that there are two holes for the air reservoir part to mount into on the slope sheet part added earlier. It mounts horizontally on the vertical section of the slope sheet, with the triangle supports toward the bottom. If you elect to add 0.015" air lines between this part and the AB valve (in photo below), it is far easier to keep the part in the part sprue before removing the rounded knobs and drilling holes. If you elected to drill holes to simulate the air lines, you will want to drill holes in the front of the cylinder to attach air lines between the air reservoir and the AB valve.



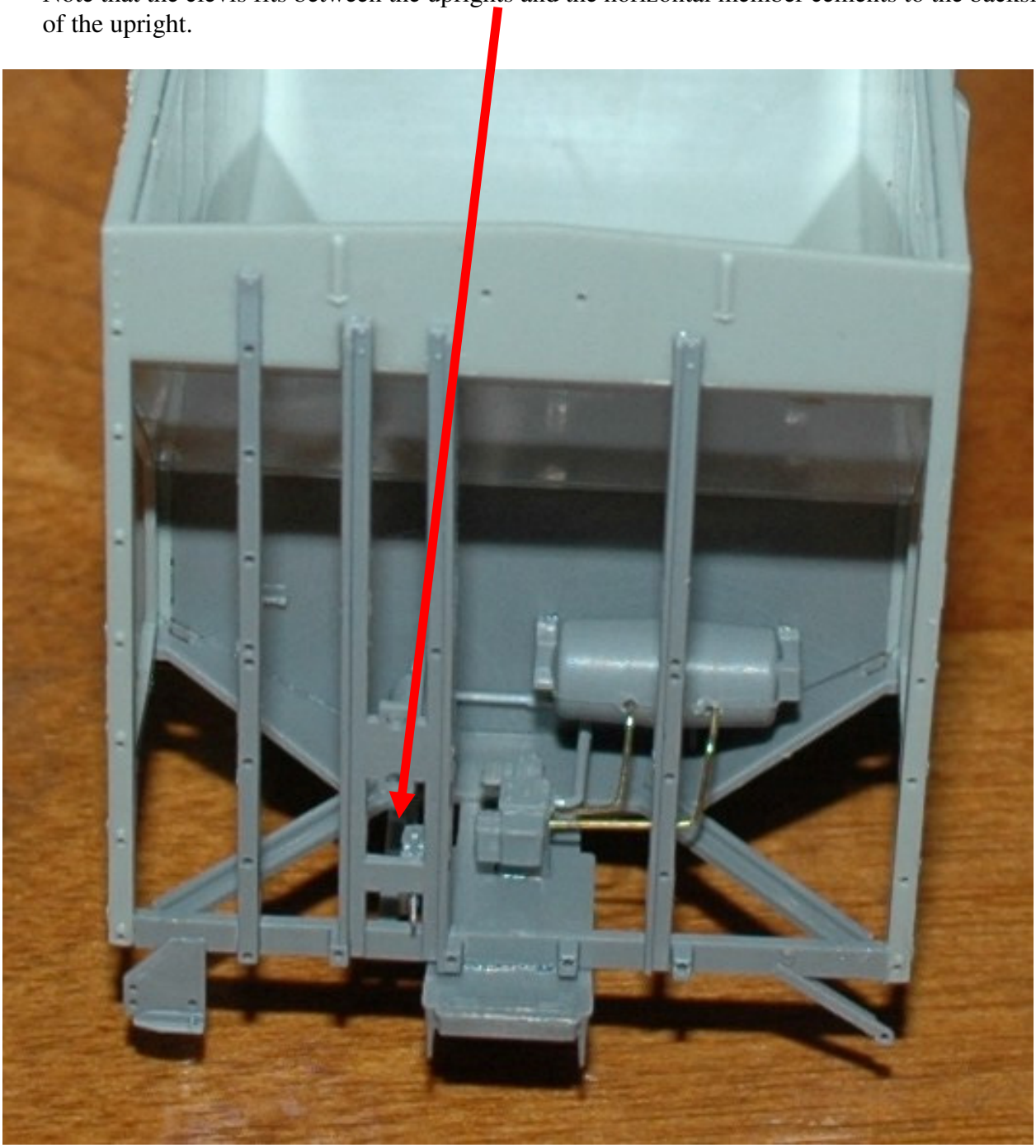
11. **Attach the AB valve:** Degate and clean the AB Valve part from the small brake parts part sprue. It mounts on top of the small "box" in the B end, and its air line runs toward the slope sheet (simulated to attach to the back side of the brake cylinder in the next step). If you elected to add the air line from the air reservoir in the previous step, it is advised that you drill holes in the AB valve at this point and test fit the wire parts before attaching it.

12. **Attach the brake cylinder/fulcrum/clevis/horizontal support piece to the coupler underframe and slope sheet:** Degate and clean the brake cylinder/fulcrum/clevis/horizontal support piece, located in the small brake parts part sprue. Note that there are two holes underneath the brake cylinder part; these mount in the two holes on top of the bolster. Note that the lower rod should hang below the bolster. Also, the long L-shaped piece at top cements to the end sheet now, and touches the back of the B end upright later (step 13 below).



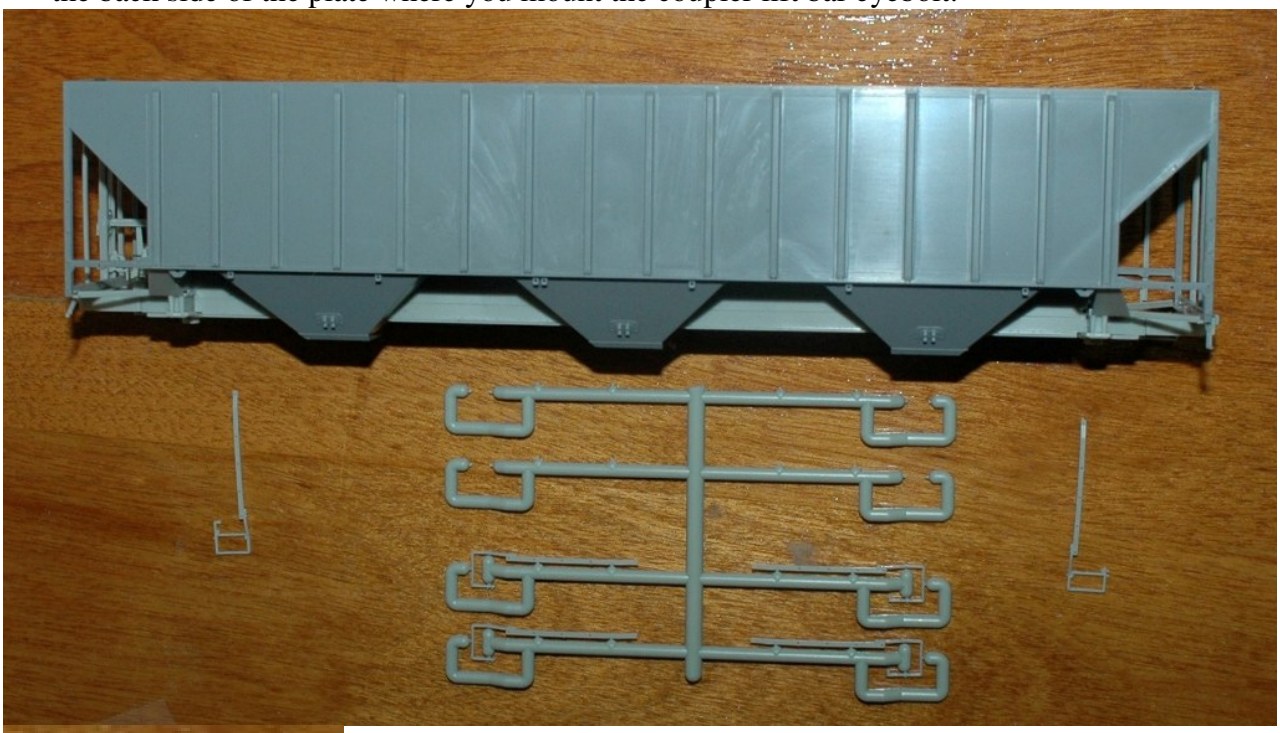
13. **Attach the A end uprights:** Using sprue nippers, carefully degate and clean the A end uprights found in the small end uprights sprue. Cut the tops of the end uprights square using sprue nippers. Test fit on A end, and then cement so that the uprights fit into the holes at the top and directly between the end uprights molded into the body. It should also sit right on top of the coupler box in the center. (See photo in step 14 of B end upright installation for guidance).

14. Attach the B end uprights: Repeat the process highlighted above, this time on the B end. Note that the clevis fits between the uprights and the horizontal member cements to the backside of the upright.



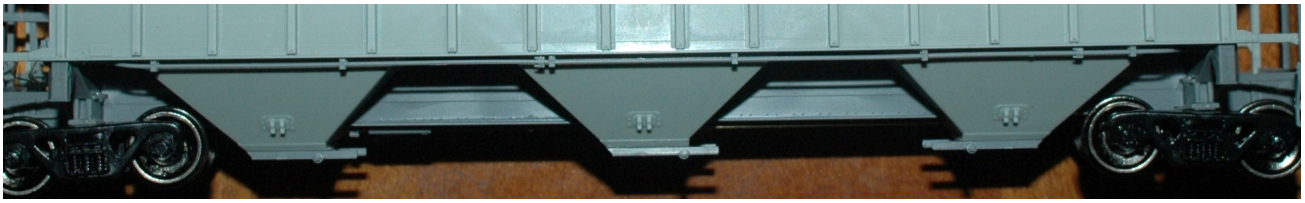
15. Attach the brakewheel housing: Degate the brakewheel housing from the small brake parts part sprue. Attach to the B end, on top of the mounting plate that has the two holes in it. Slide the part into position so that the bottom U shaped part slips over the clevis part.

16. Attach the side ladders: Degate the 4 side ladders that are needed for your selected car (there are two styles – "2 Step" and "Box" type), making sure to NOT remove the "pins" of plastic that protrude to the outside of the ladder parts: the left ladders have one pin, the right ladders have two. For the left ladder, cement the center and top pins into the body. At the low part of the ladder, cement the small pin noted above to the angled piece coming from the end upright piece, with the flat top part butt-joining to the body. For the right side ladder, repeat the process with the center and top parts. For the low part of the right side ladder, there is a two hole locator in the back side of the plate where you mount the coupler lift bar eyebolt.



2 pins per side– do not cut off

17. Attach the Brake Line: Using sprue nippers, degate and clean the 2 parts that form the brake line. These parts are located in the end upright part sprue. The part that has 3 supports goes on the left side of the car, whereas the part with the 4 supports goes on the right side.



18. Attach wire grabirons to sides: Using the supplied grabiron parts, apply grabirons.

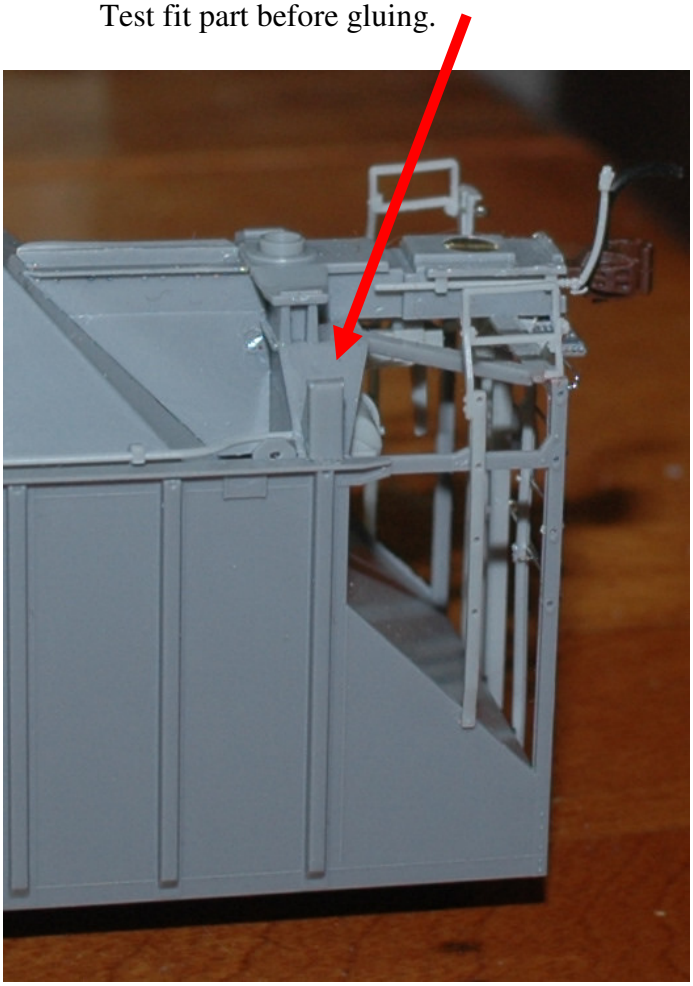
19. **Attach wire grabirons to the ends:** Using supplied parts, install long grabirons between the leftmost end ladder upright and the corner posts. You will need 7 of these at each end of the car, or 14 total.

20. **Attach long wire grabiron for crossover platform handrail:** Apply the long grabiron part pictured here.

21. Attach wire grabirons to non-ladder side of end: Using either .012” wire or brass, bend grabirons to fit between the rightmost ladder upright and the corner posts. Each end requires three of these.

22. Attach wire drop grabiron on each end: Using supplied drop grabirons, place one drop grabiron in each end of the car in the lower right corner of the horizontal end runner. There is one hole here on the end, located just above the 45 degree angle support for the stirrup step. The left hole needs in the model needs to be hand drilled out.

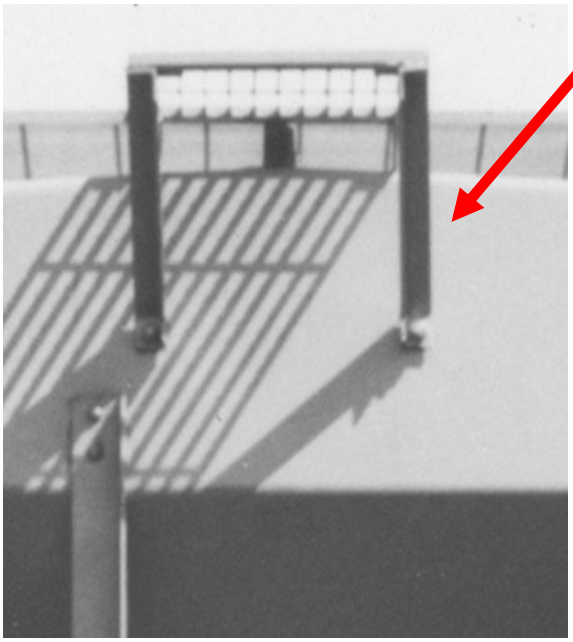
23. Attach the jacking pads: If your prototype calls for jacking pads, there are two types of jacking pads to consider. There are 4 pads in one of the detail sprues, whereas the other 4 are inside the parts baggie. The narrower part of the triangle is the bottom of the part, and included a small "T" section. This bottom should be cleaned of sprue waste. The thicker part of the jacking pad is the top – it should be cleaned so that the "stubby" square remains. Test fit part before gluing.



24. Attach weights: Add weight to the base of the car if desired; it is recommended you add 3.25 ounces to bring the car to NMRA specifications. We recommend erring on the high side due to this car's higher center of gravity, so somewhere between 3.25 and 3.75 ounces is optimal.

25. Attach the Roof: Glue the roof onto the car so that the hinges on the roof (ie the 15 Apex pieces) are on the LEFT side of the trough when you are looking at the B end of the car.

26. Attach the Roofwalk: Attach the Tangent-supplied etched metal roofwalk to the top of the car. We recommend using Cyan-poxy for this application (available from www.mrhobby.com). Normal CA-type glue is not as resistant to temperature changes. Note that there are two types of roofwalk options. Note that the roofwalk needs to be bent about 30 degrees where the side part protrudes from the main body and angles to the roof. Also, prior to attaching the roofwalk, the roofwalk end supports must be bent so that they fit into the end holes in the body.



27. Attach grab irons to the Roofwalk: Attach the supplied wire straight grabirons to the holes in the roofwalk. Drill a hole through the roofwalk so that the 18" grabiron is positioned halfway between the angle of the roofwalk. The grab iron should have a roughly 30 degree bend in it to match the slope of the roofwalk. Photo:

28. Attach the Crossover Platforms: Attach the Tangent-supplied etched metal crossover platforms to each end the car. The 4 pins glue into the square boxes from the end. Note that there are two types of crossover platform options in the Apex kit. For most schemes, an Apex roofwalk has an Apex crossover platform.

29. Attach the underframe brake adjuster: Degate and cleanup the brake adjuster part found in the small brake parts part sprue. This part is very easy to break, so please be careful! It mounts between the bays on the B end of the car, with the thicker plastic part toward the B end. It is equally easy to break once mounted on the car, so watch how you hold the car!

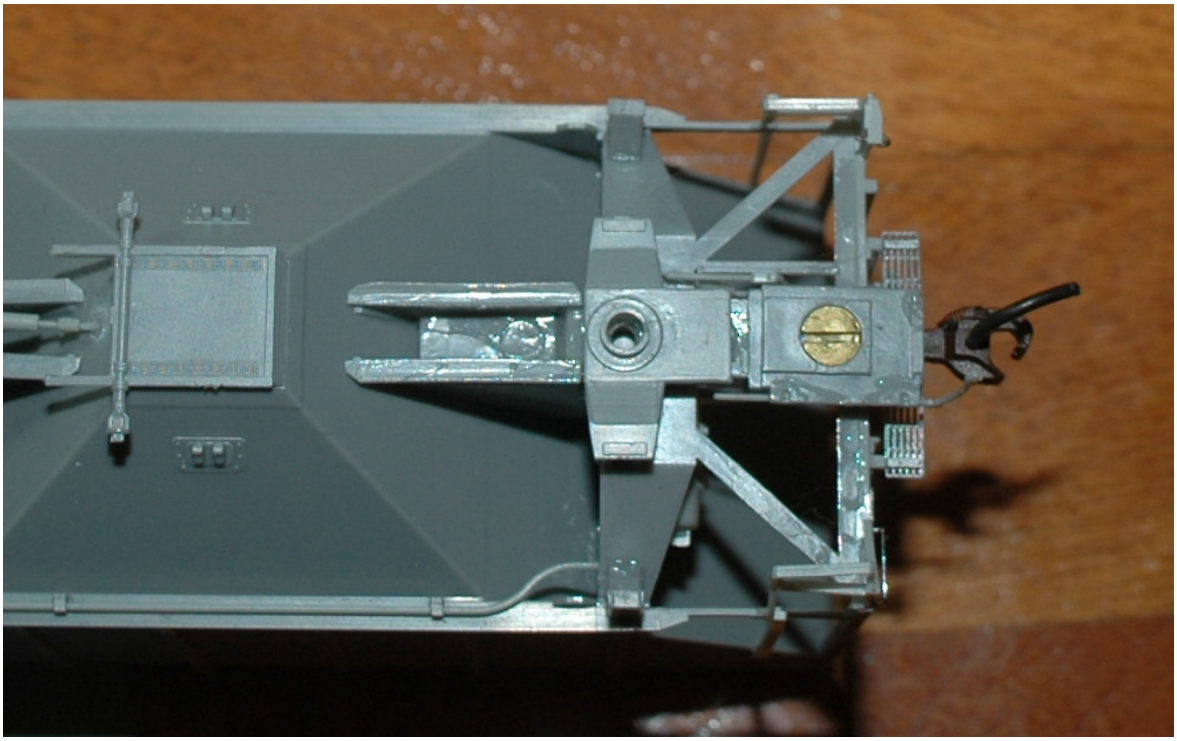
30. Create the other end of the Underframe brake adjuster: Using the supplied part of .020" brass, fit between the 2 bays at the A end of the car.

31. Attach the outlet gates: Carefully degate and cleanup the three outlet gates. Glue these to the bottom of the hopper bays, using the circular pins referenced in instruction number 1 for guidance.

32. Attach the roof hatch part: Degate and cleanup the roof hatch part. Glue this part to the top of the car matching up the holes provided (so that it mounts in the proper direction).

33. Air hoses – Glue the air hoses to the 2 holes located on the side of the coupler boxes.

34. Couplers – Insert couplers and attach using the included flathead type screw.



35. Pin lifters – Insert a eyebolt into the plate on the lower left side of the end to hold the pin lifter bracket. Glue the other end to underside of the coupler box.

36. Trucks - The kit comes with trucks and metal wheels. If you find that the truck screw does not tighten completely to the truck and bolster, remove the screw. Use a #51 drill bit in a pin vise and carefully deepen the hole *just a turn or two of the bit.* Please be careful here; any more will cause the bit to go through the bolster plastic and come out as an unsightly hole at the base of the vertical slope sheet. Attach the truck and screw again, and carefully tighten the screw appropriately. *An alternate option if you do not have a pin vise: cut the end of the screw off with wire cutters.

We hope you enjoyed building this kit! Please feel free to let us know of any needed corrections or improvements.

Thank you!

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