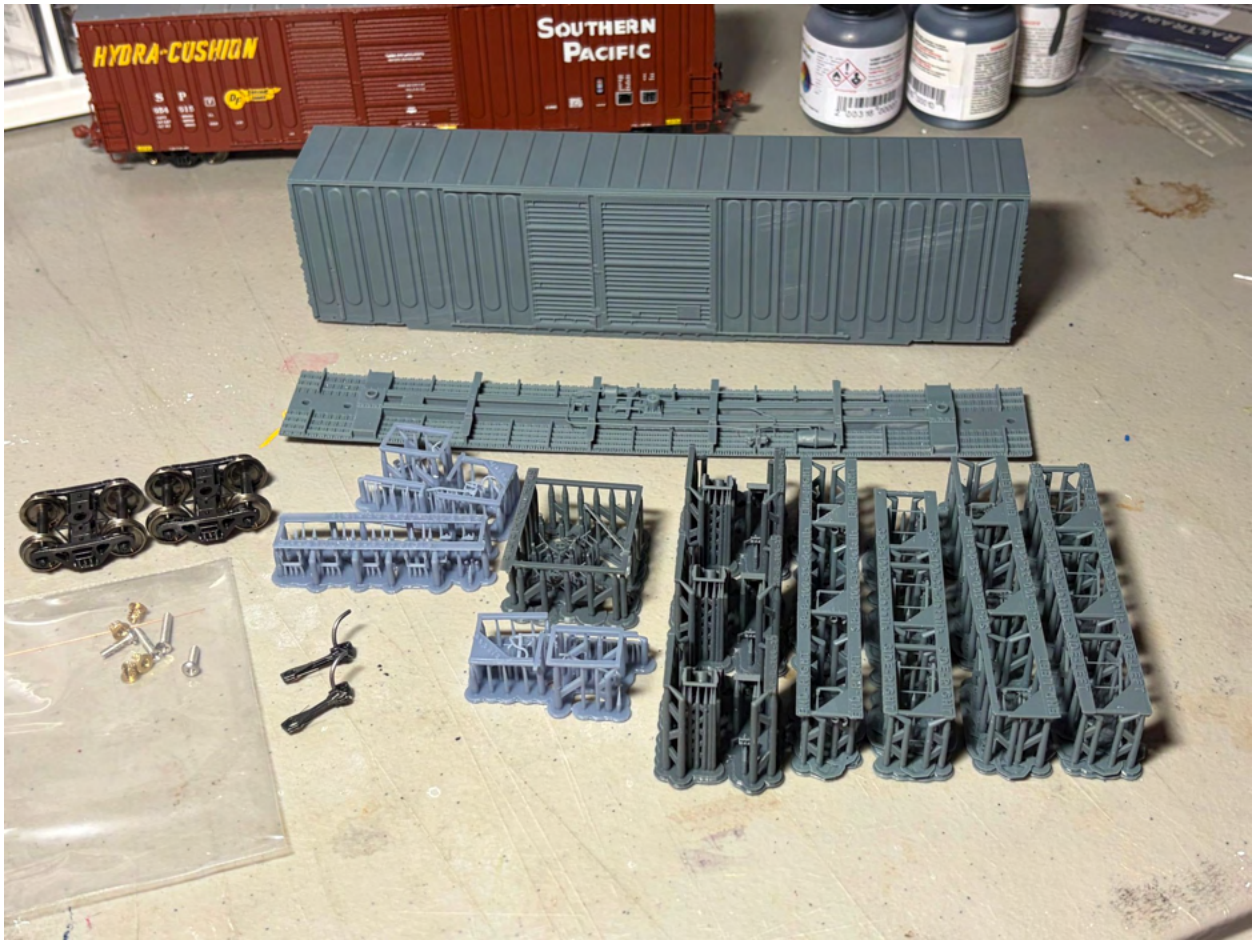
KPM B-100-39 instructions

By AJ Russell



Parts included with kit:

- Body
- Underframe
- Ladders (4 types)
- Hoses
- Uncoupling lever
- Stirrup steps
- Retaining Valve
- Hand brake bell crank
- Walkway platforms
- Brake lever
- Screws + brass inserts
- Draft gear

Needed parts not included with Kit:

- Trucks (36” Barber S2) - *I recommend using Tangent*
- Couplers (Long shank, not medium)
- Brass wire (.008-.012” recommended)
- Brass shape .01 x .03” (Styrene could be substituted)
- Brake wheels (Kadee modern recommended)
- Stick weights

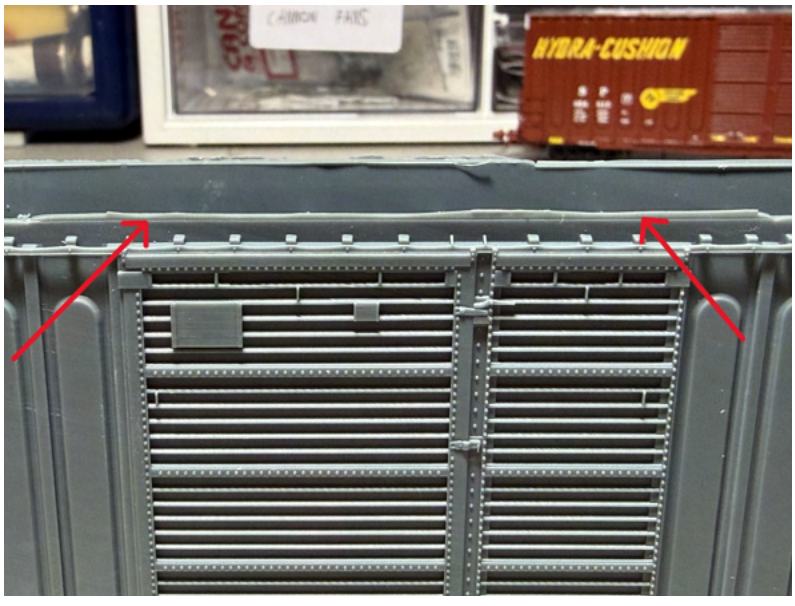
Step 1: Removing flash and support nubs from body

In examining the body, you will notice that the sill is rough. This is where the print supports join the body. Before sanding these flat, make sure to understand these few things:

1: Do NOT sand the Jack pads

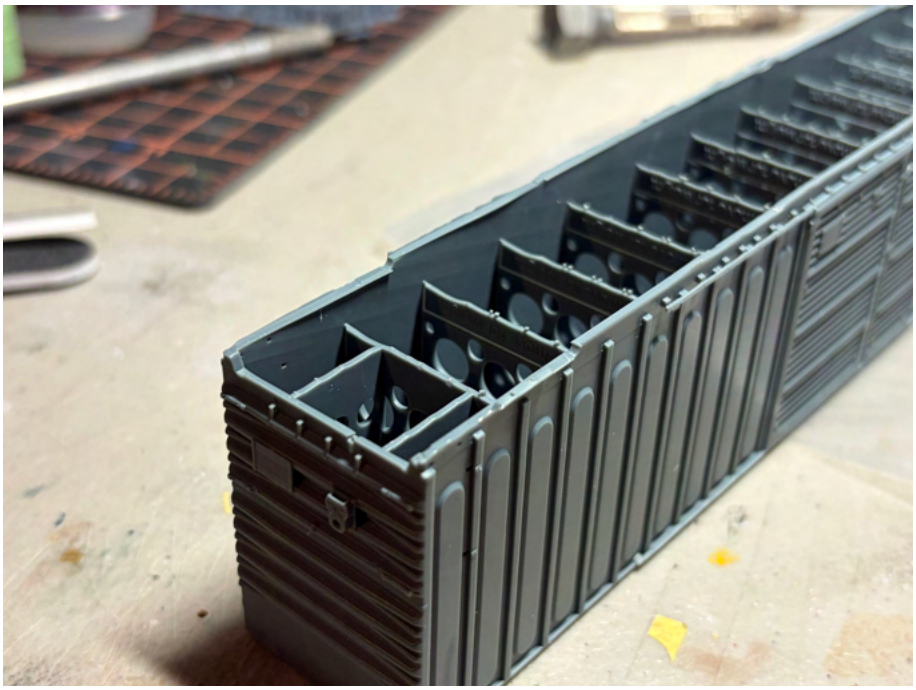
Notice the small protrusion, this is the jack pad. Make sure to not sand this area.

2: Be careful sanding the protrusion under the door



Under the door, there is a narrow piece that extends down from the sill, this is prototypical. Be sure to only sand this area flat with the protrusion, not with the sill.

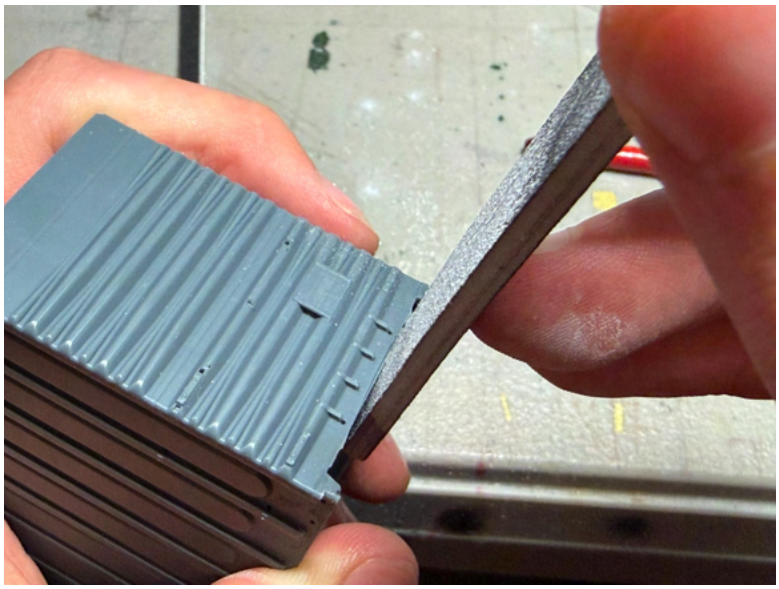
3: Understand how far to sand



Looking at the sill straight down from the bottom of the body, You will see that along the edges of the sides, a thin line of material sticks out. This line was part of the supports. Once it is not visible, that is when that area is done sanding. Going beyond that point could damage the shape of the sill.

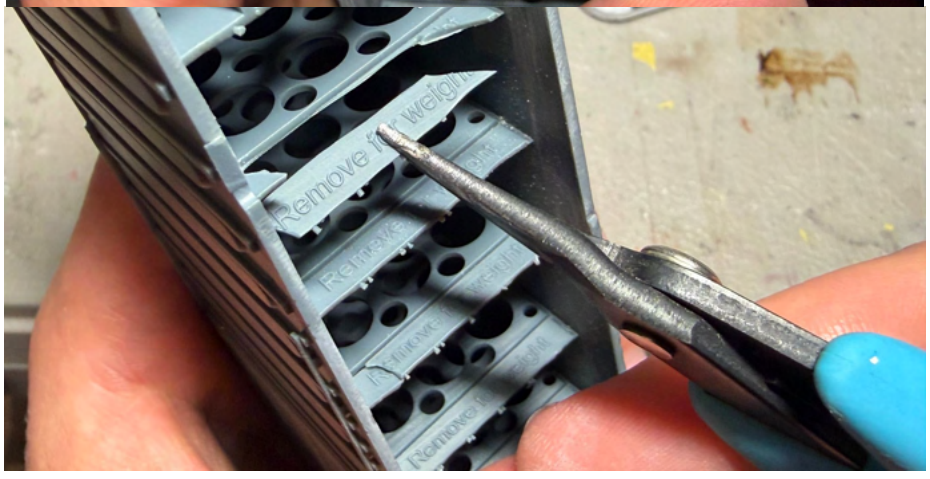
Make sure to keep those things in mind when sanding the body

Any bits of flash that extend inward can be carefully removed using a hobby knife

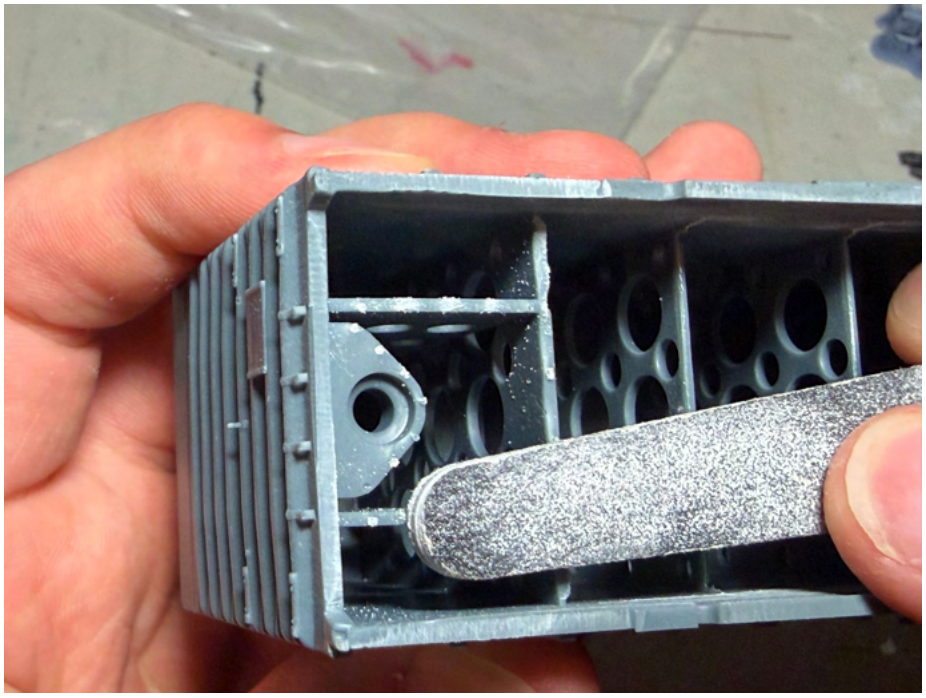


The ends of the car need sanding too. Under where the end platfrom sits is where some flashing will be. Be cautious of the angled details when sanding.

Part 2: Removing the support nubs and tabs



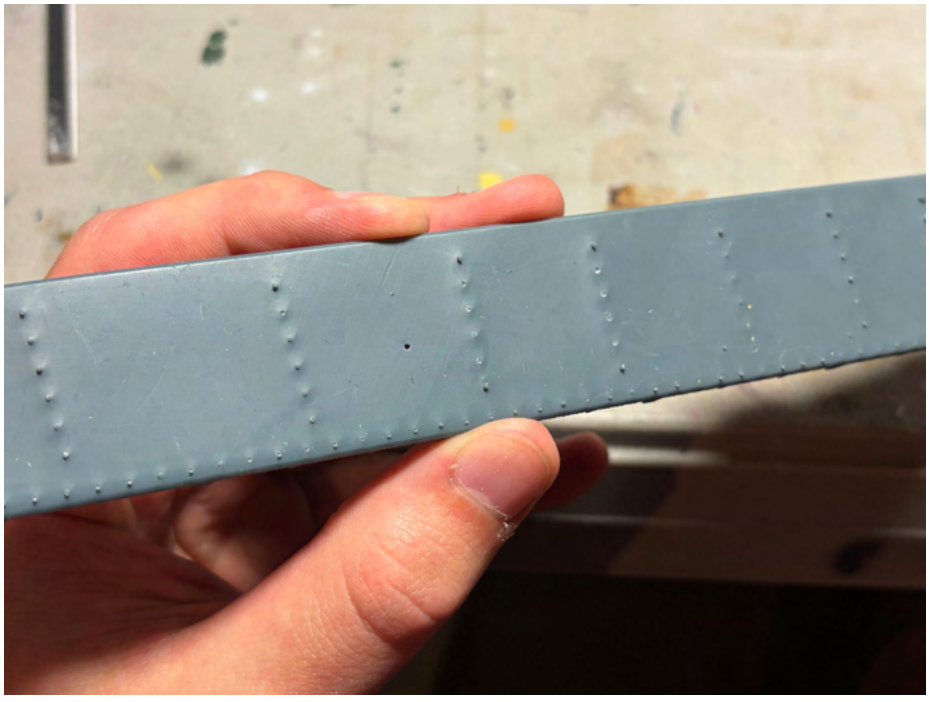
On the interior supports, you can see text that says “Remove for weight”. SImply use some pliers and remove these parts for the weights. Once removed, sand this area and the sides flat.

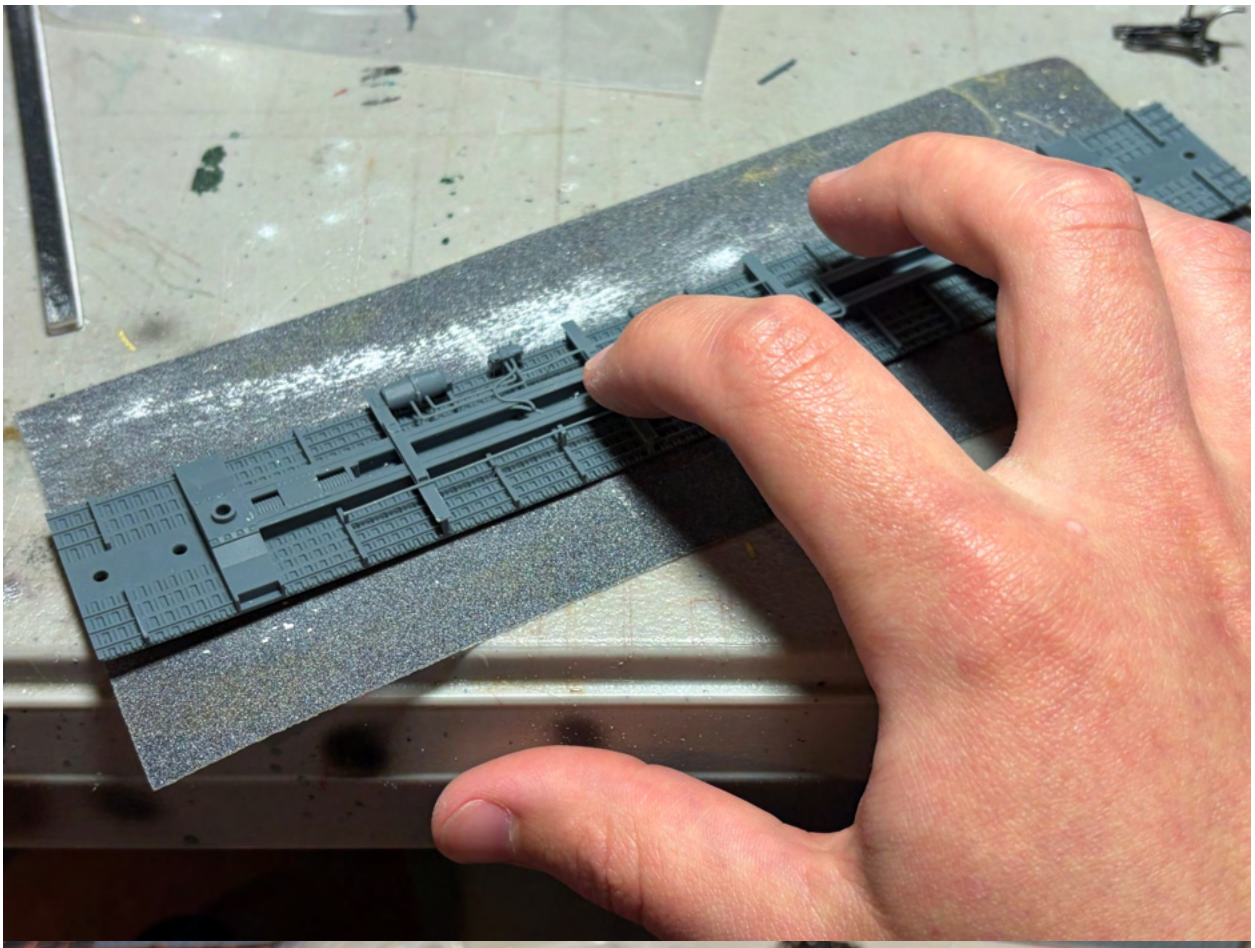


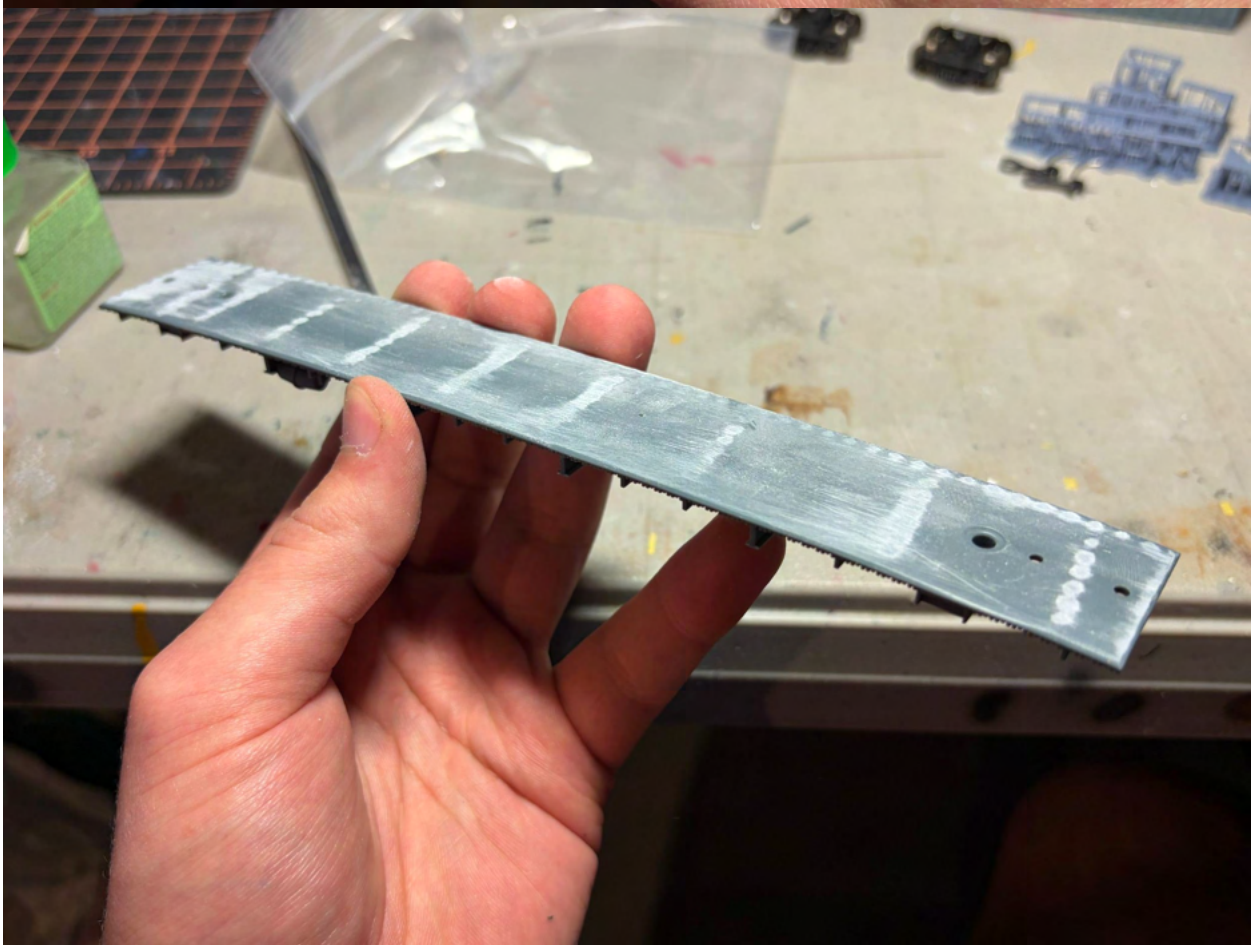
Near the mounting bolster, sand the print support nubs until flush.

Step 2: Removing support nubs from underframe and installing weight

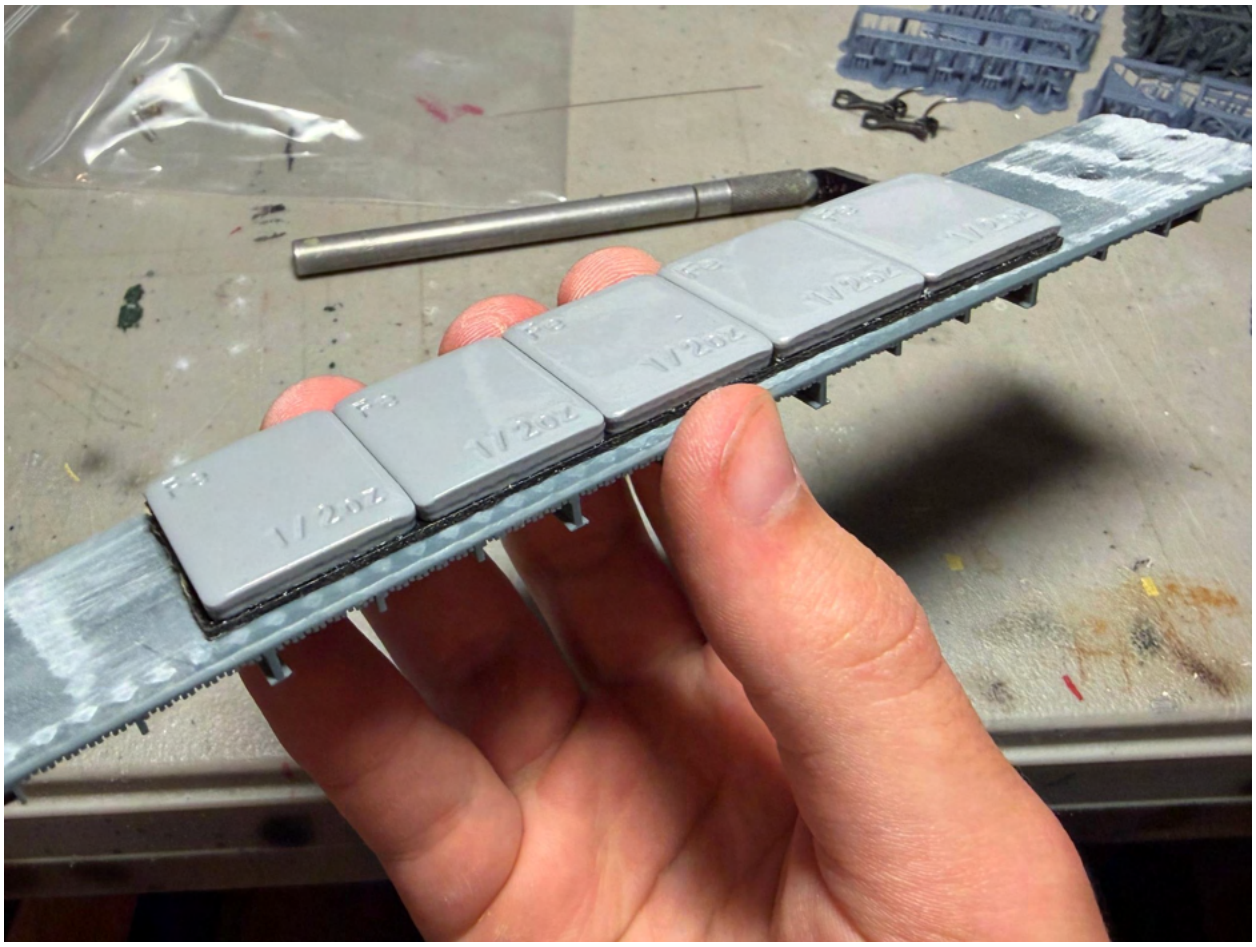
The underframe of the car has print support nubs. Make sure to sand these flat so they don't interfere with the mounting process. Be careful with the underbody detail!





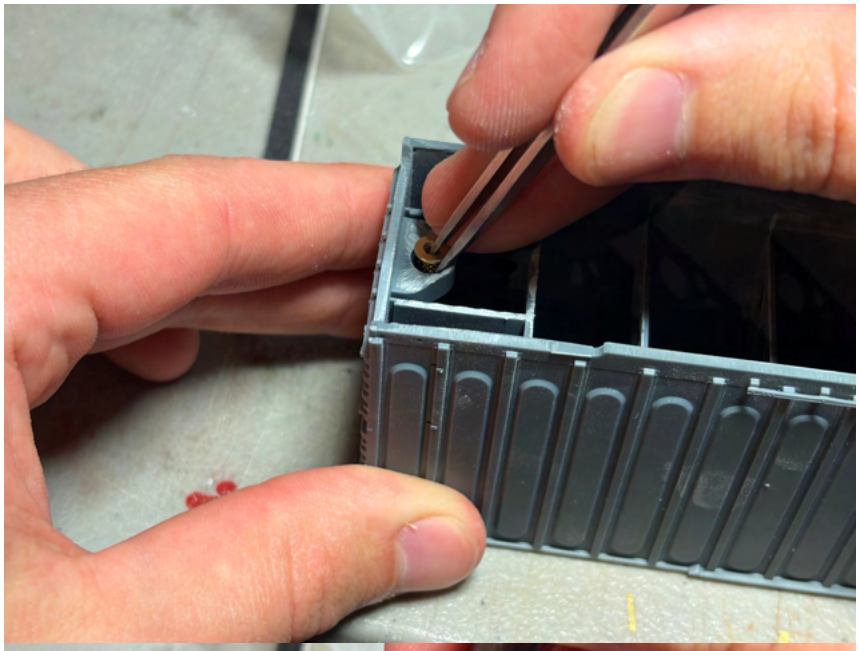


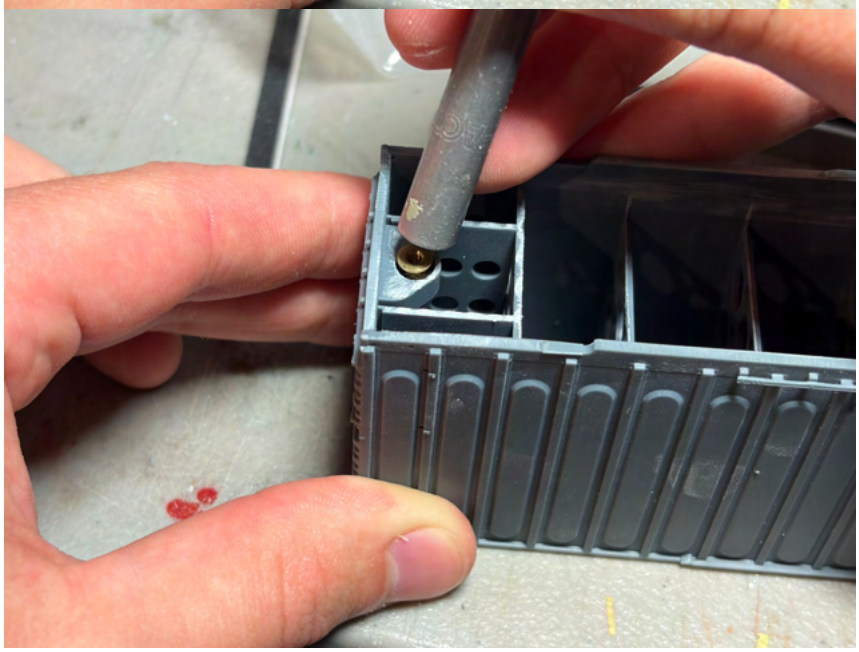
Weight is not included with the kit. I recommend installing stick weights onto the underframe. I used 5, ½ oz stick weights

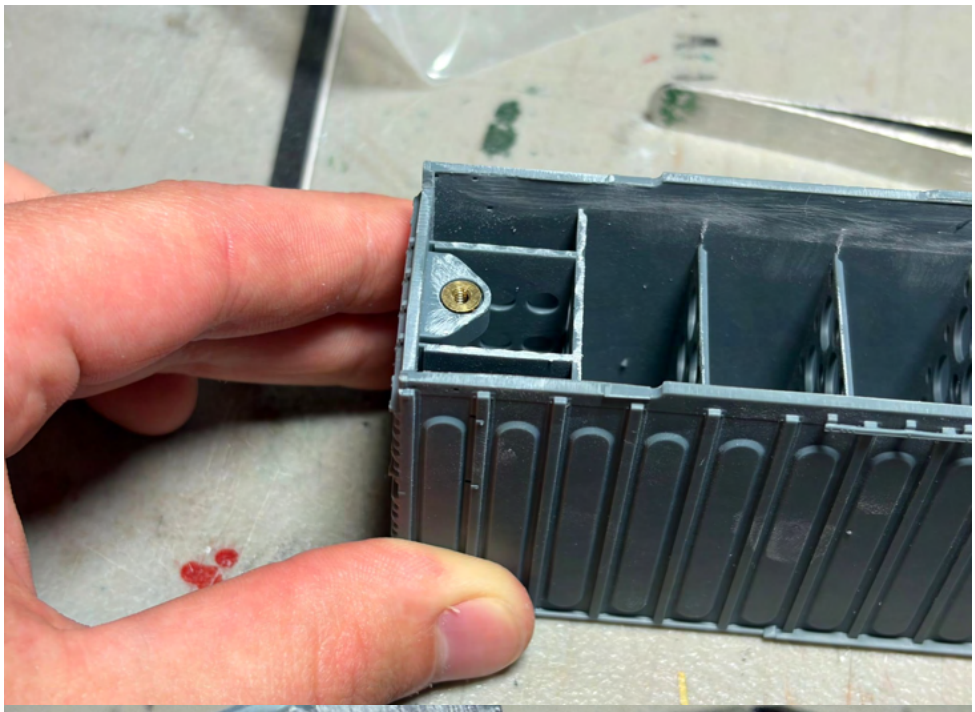


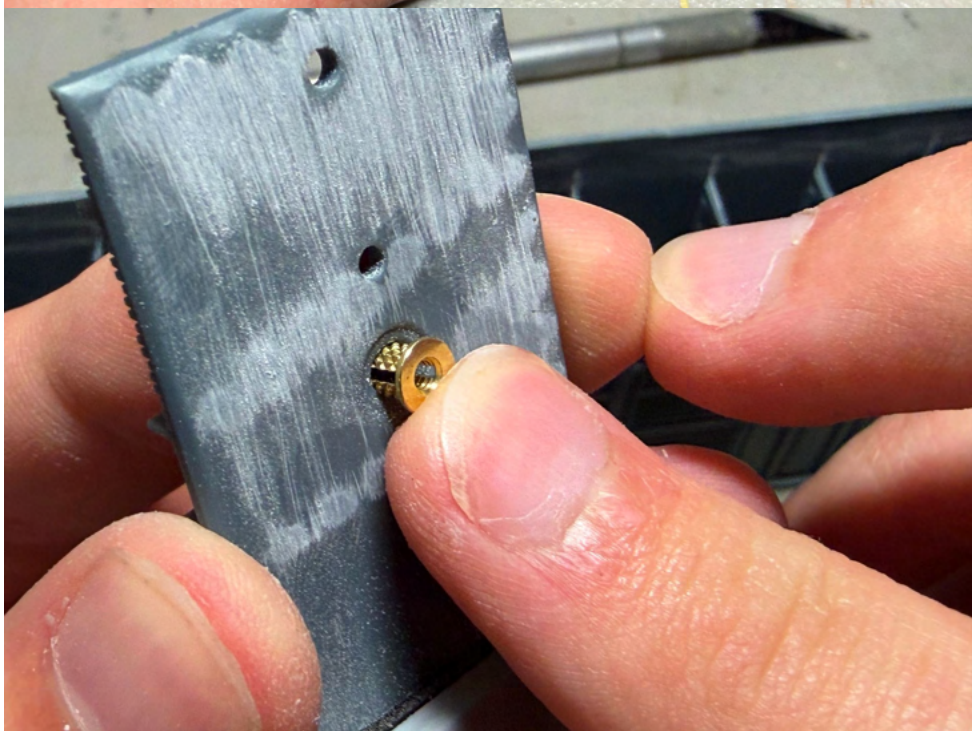
Step 3: Insert brass inserts into body and underframe

In both the body and frame, there are 2 graduated holes, these are meant for the brass inserts. Place the brass insert in the hole and force it into the hole using the blunt end of a hobby knife. Use a modest amount of pressure









Step 4: Installing the ladders

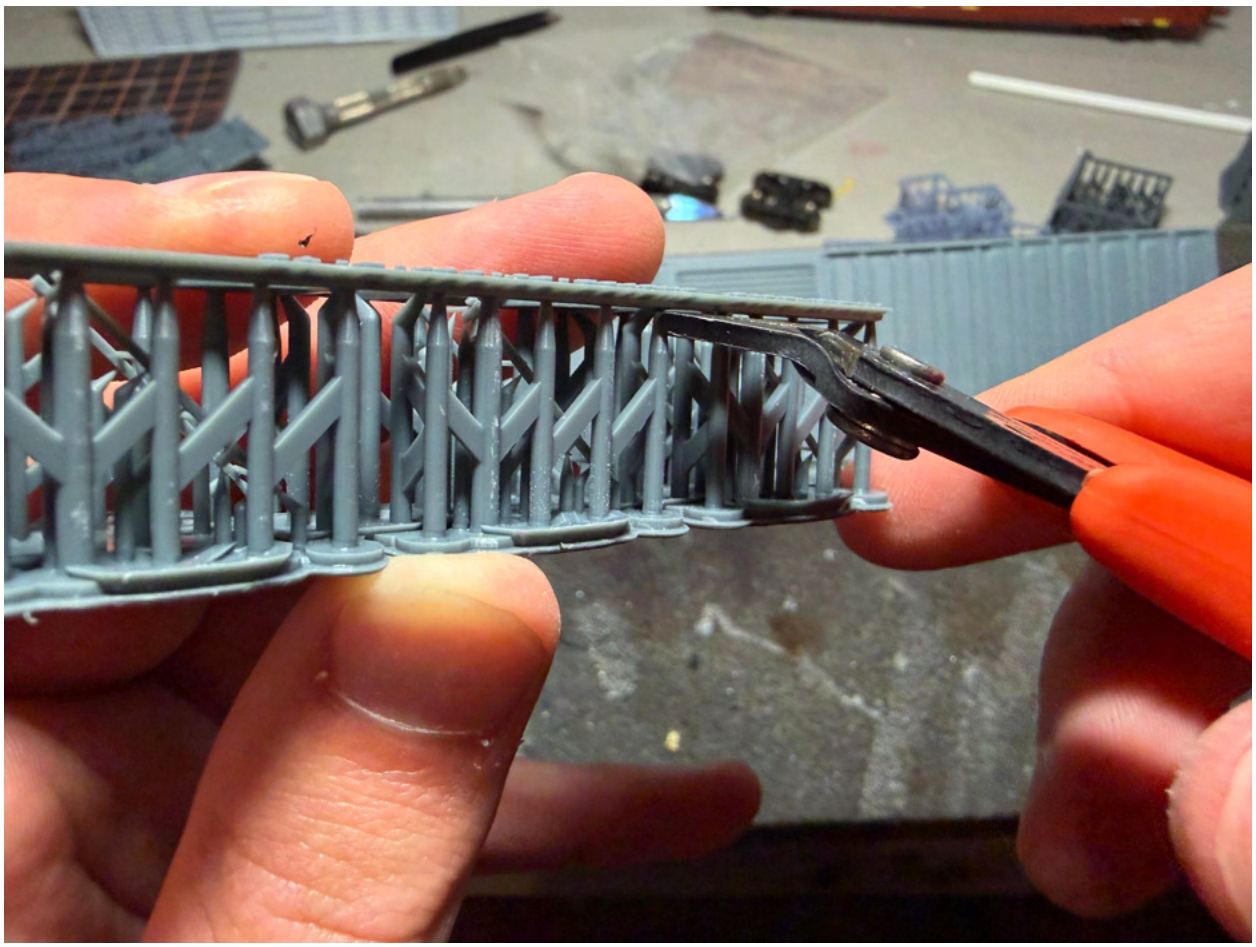
There are four sets of ladders included in each kit. Each set is labeled as followed:

- Side-Right
- Side-Left
- End-right
- End-left

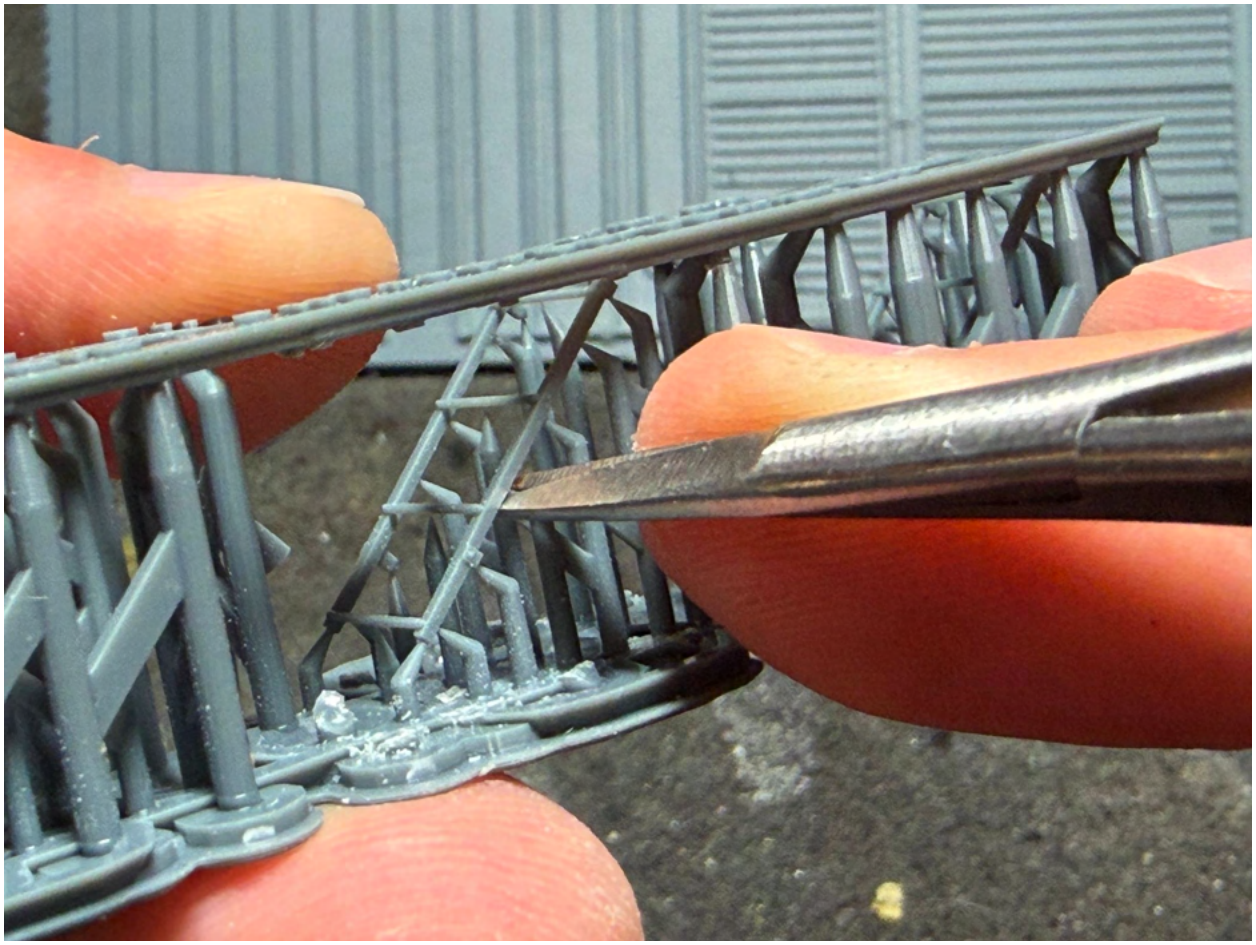
Each type corresponds with each side/end of the car. When facing either the side or end of the car, the ladders are identified as “left” and “right”.

To remove the ladder from the supports, follow these steps:

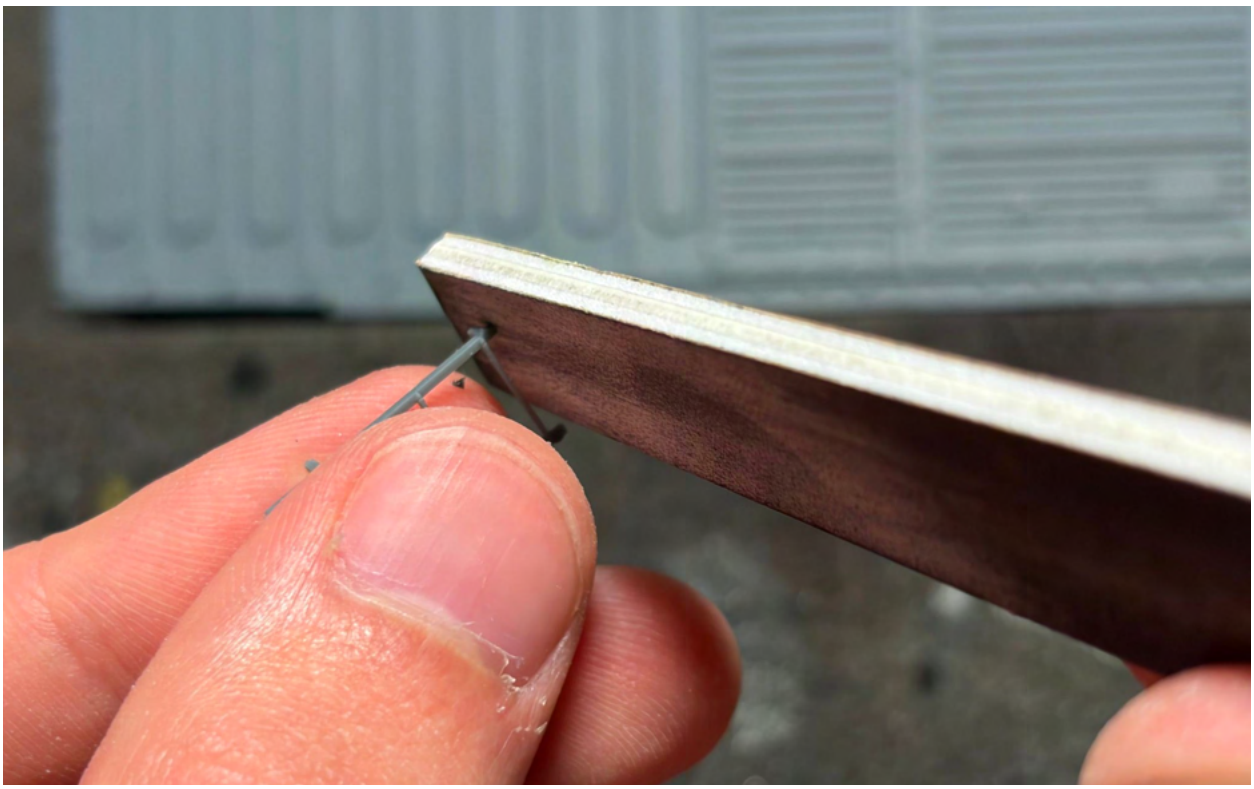
First, remove the protective bracing



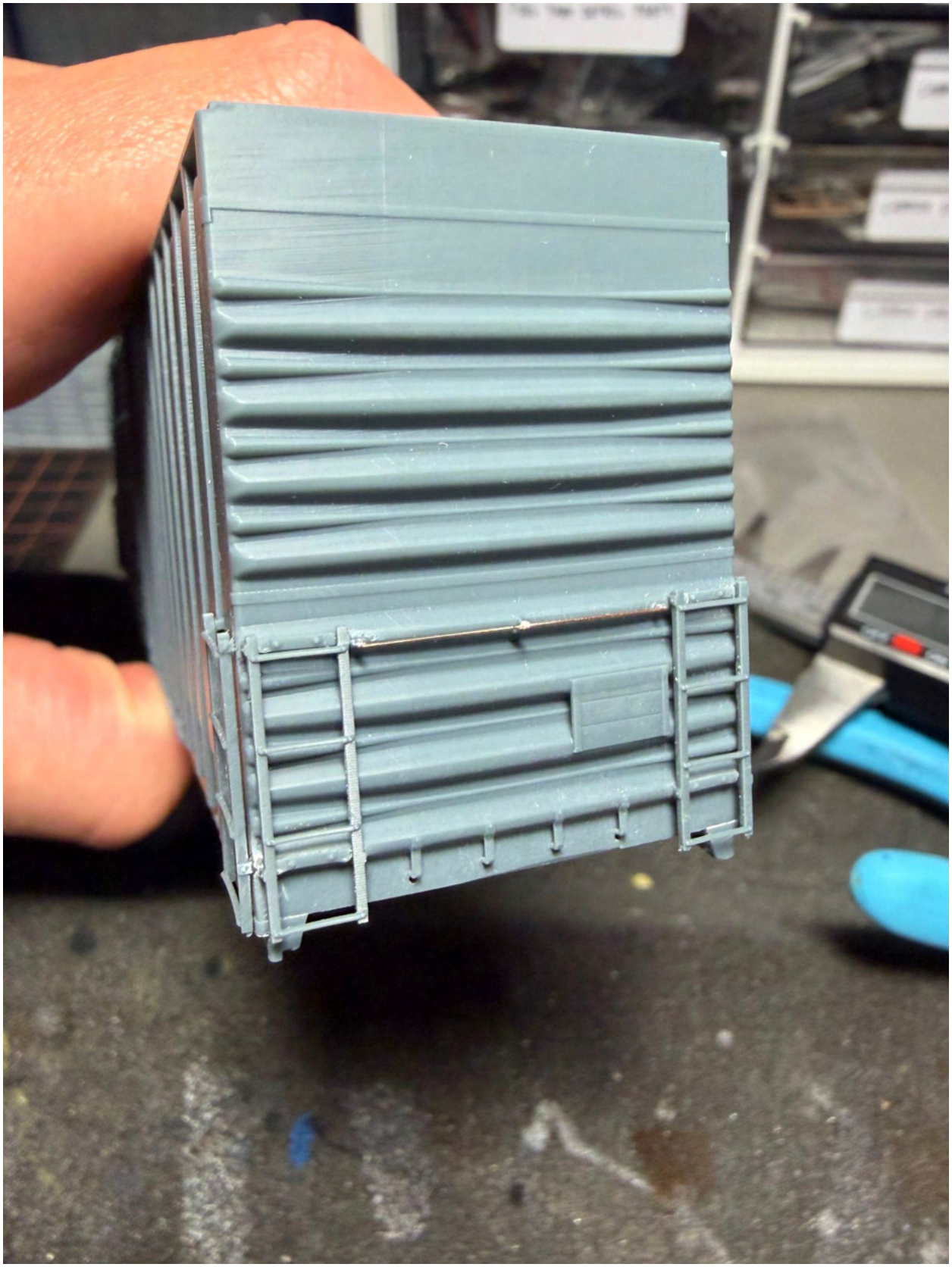
Next, carefully remove the supports from the ladder itself:



Then, Finish off by sanding the remaining support flash



Install the ladders on each side according to the labels on the supports

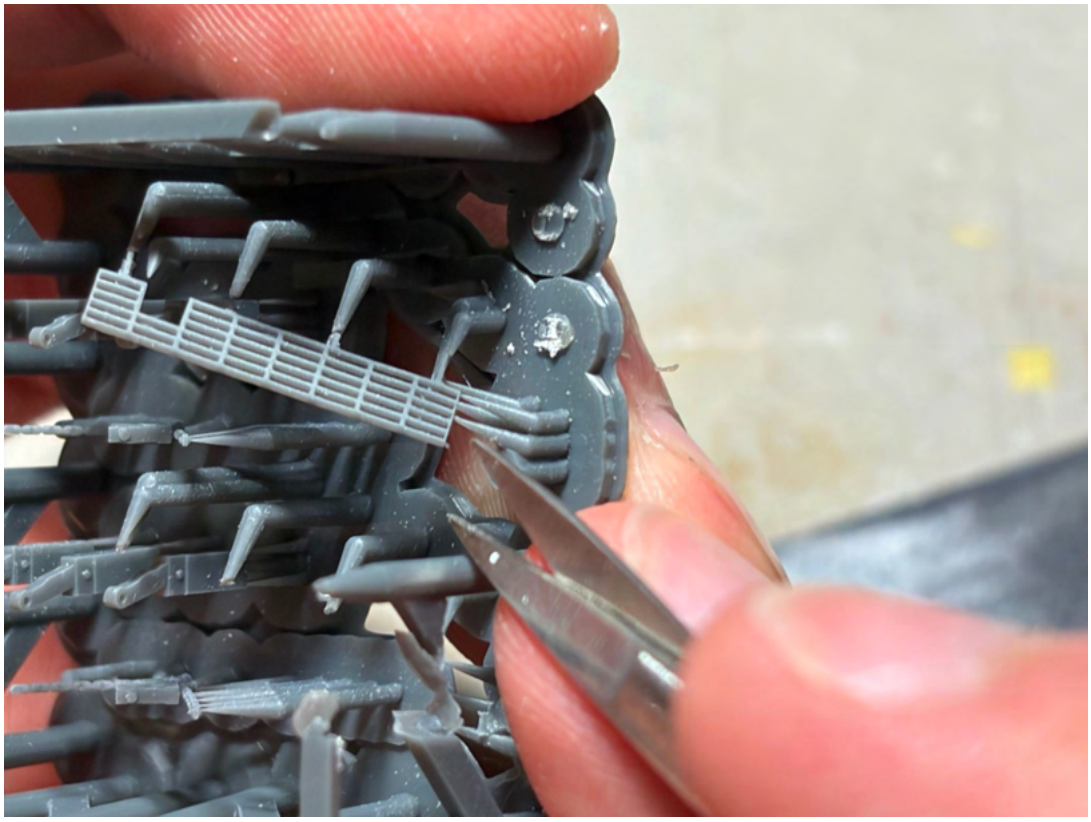


Step 5: Install grab iron between end ladders

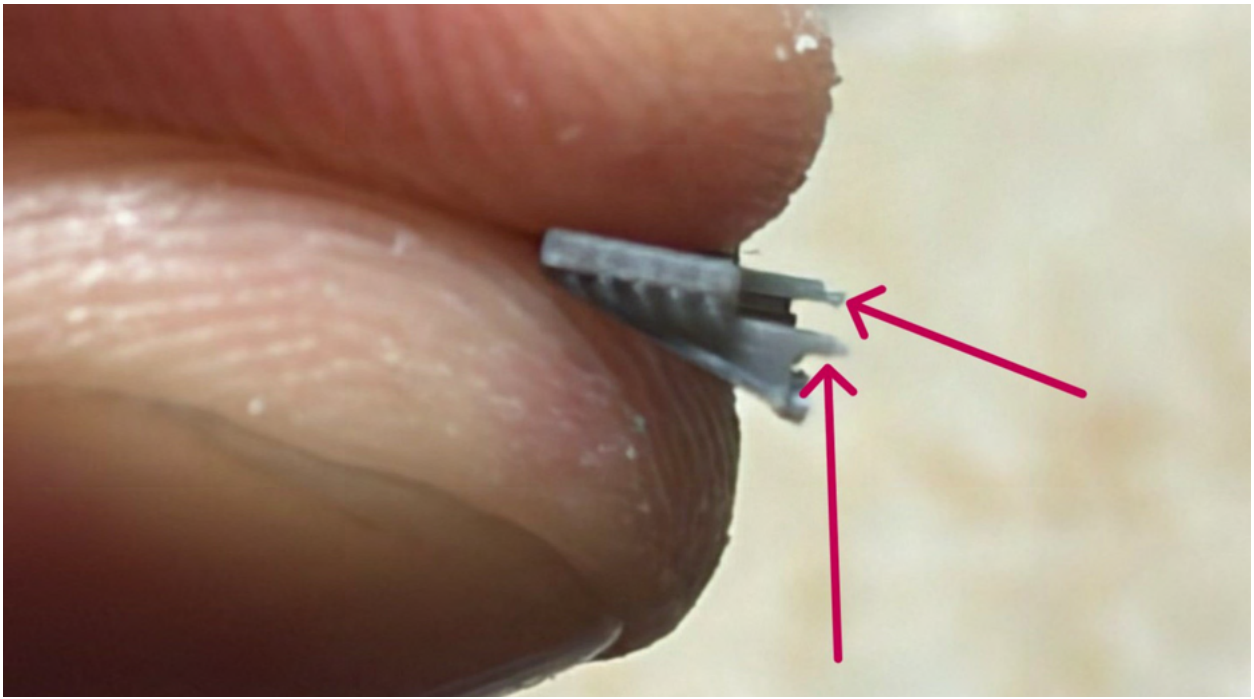
On each end of the car, a grab iron spans between both sides of the car terminating into the body. You will notice 2 small holes in that area. That grab iron will need to be custom bent using wire. I recommend anything from .008-.012”. The length between the two holes is approximately .827”.

Step 5: install walkway platforms

Locate the walkway platforms included in the kit. There are “A” end and “B” end walkways included. To install the part, carefully remove it from the supports using the same process for the ladders (remove protective bracing, remove supports, sand off flash)

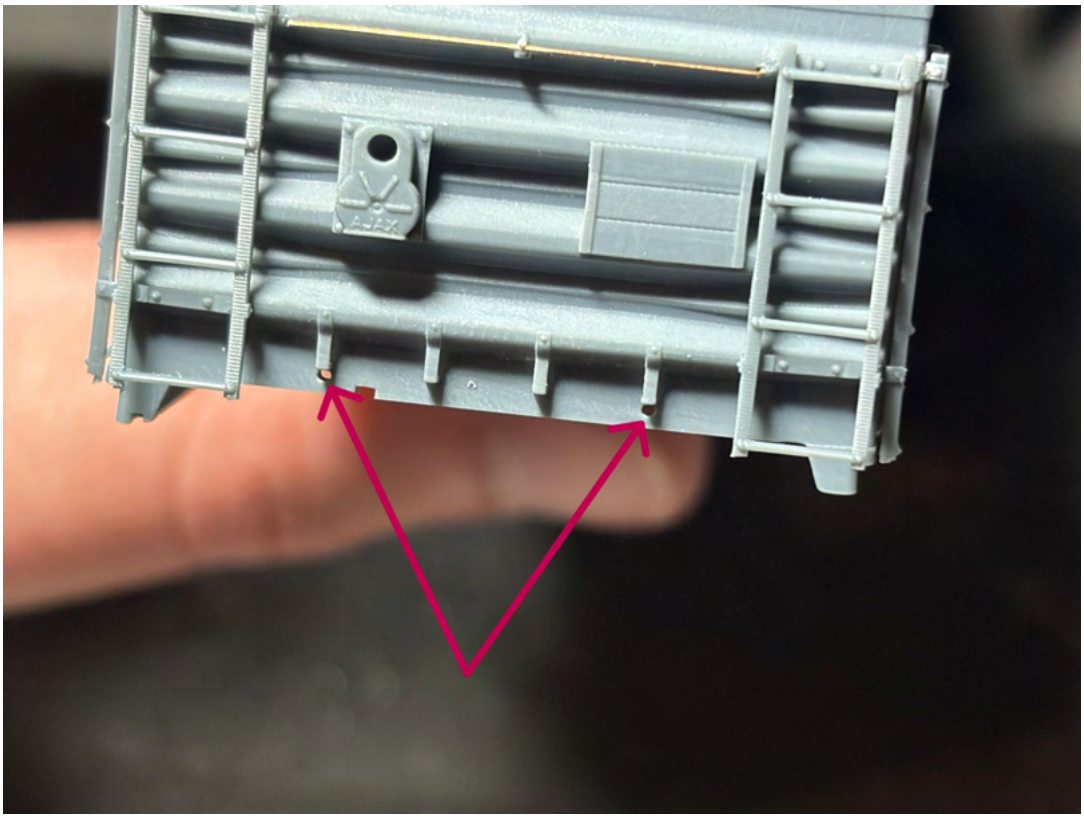


Do not remove the mounting pins on the top ends of the walkway!



Carefully sand the remaining flash off the walkway without removing the mounting pins

Before installing, locate the two small holes on the body



Install in place

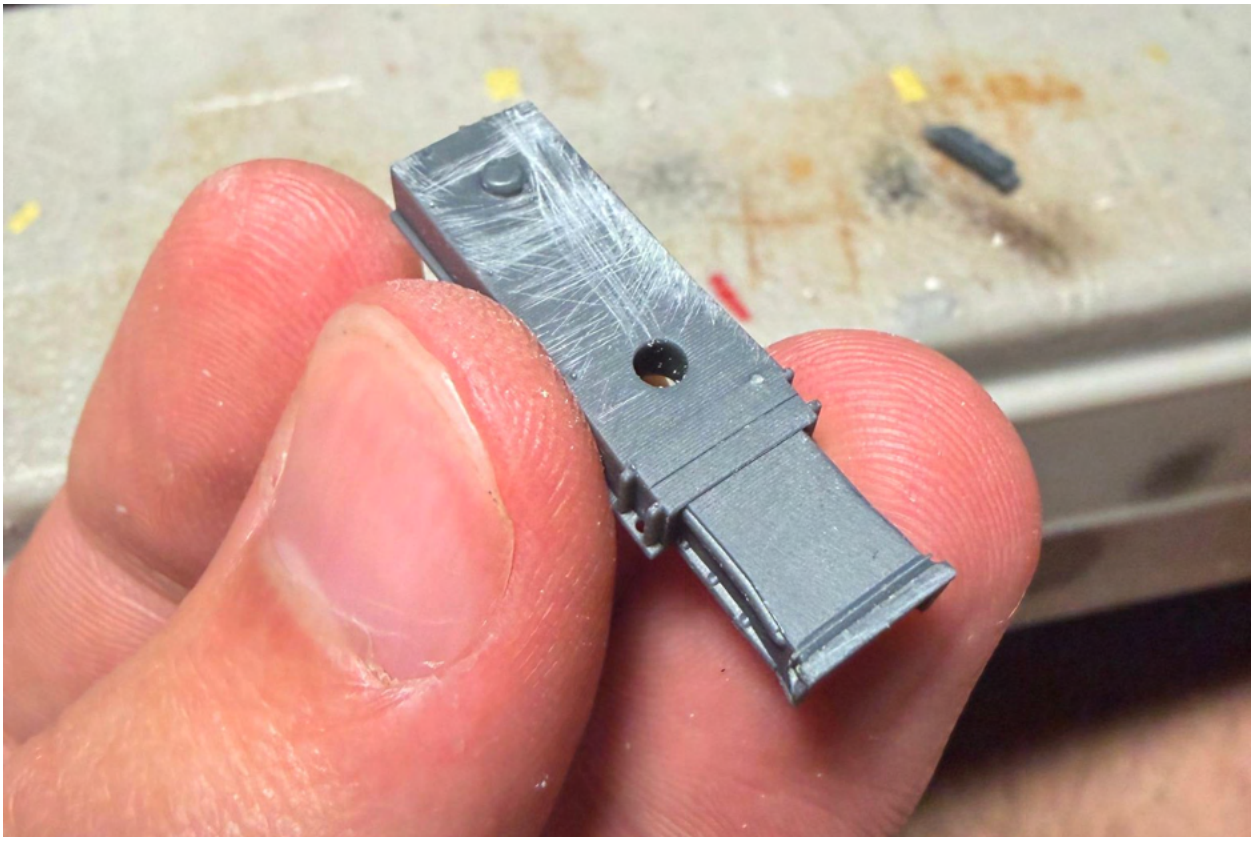
Step 6: install Brake wheel

This kit does not include a brake wheel. I recommend using a Kadee (modern) style brake wheel. Tangent brake wheels will work as well. Locate the hole for the brake wheel on the “B” end and simply install a brake wheel.

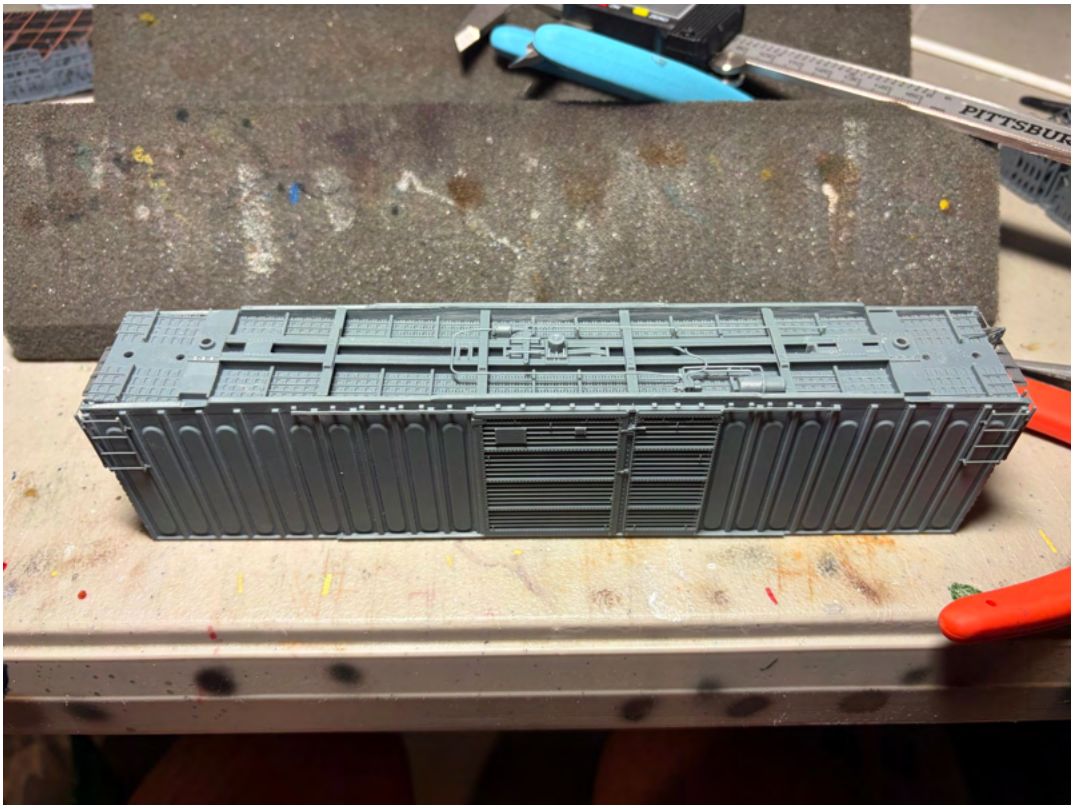
Step 6: Assemble draft gear and mount underframe to body

Locate the draft gear assembly. Using the same method as before, remove the three parts from the print supports.

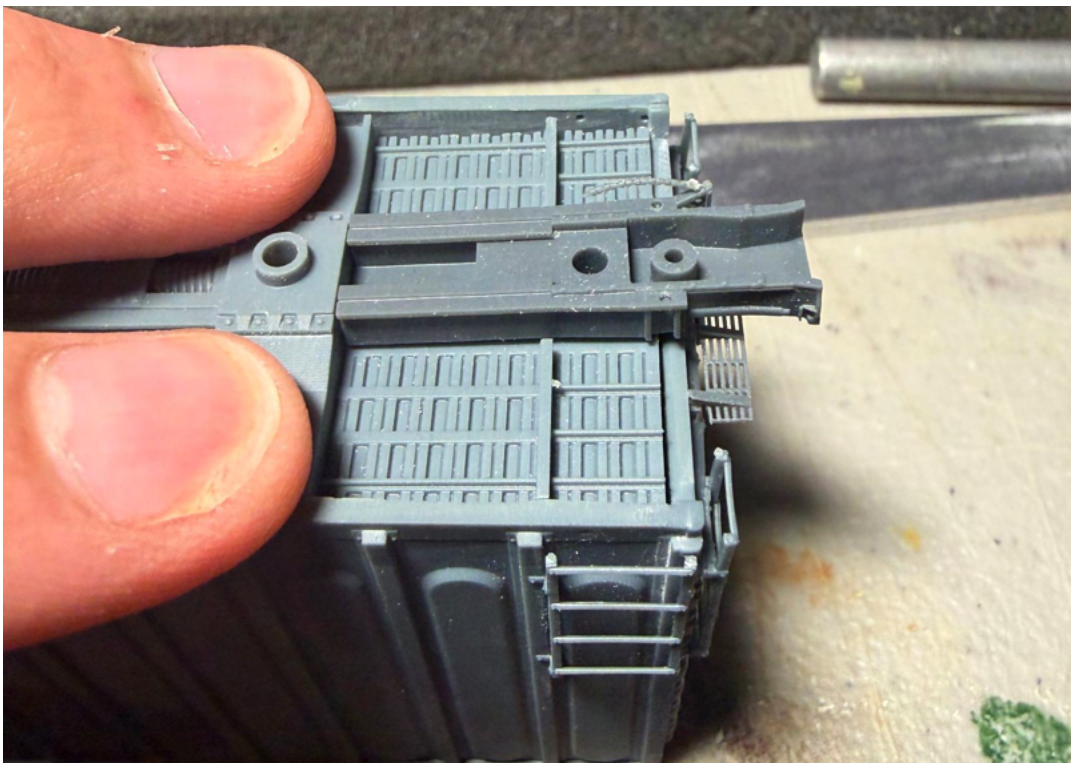
Sand off the support nubs. Do not remove the large pin located at the rear of the draft gear.



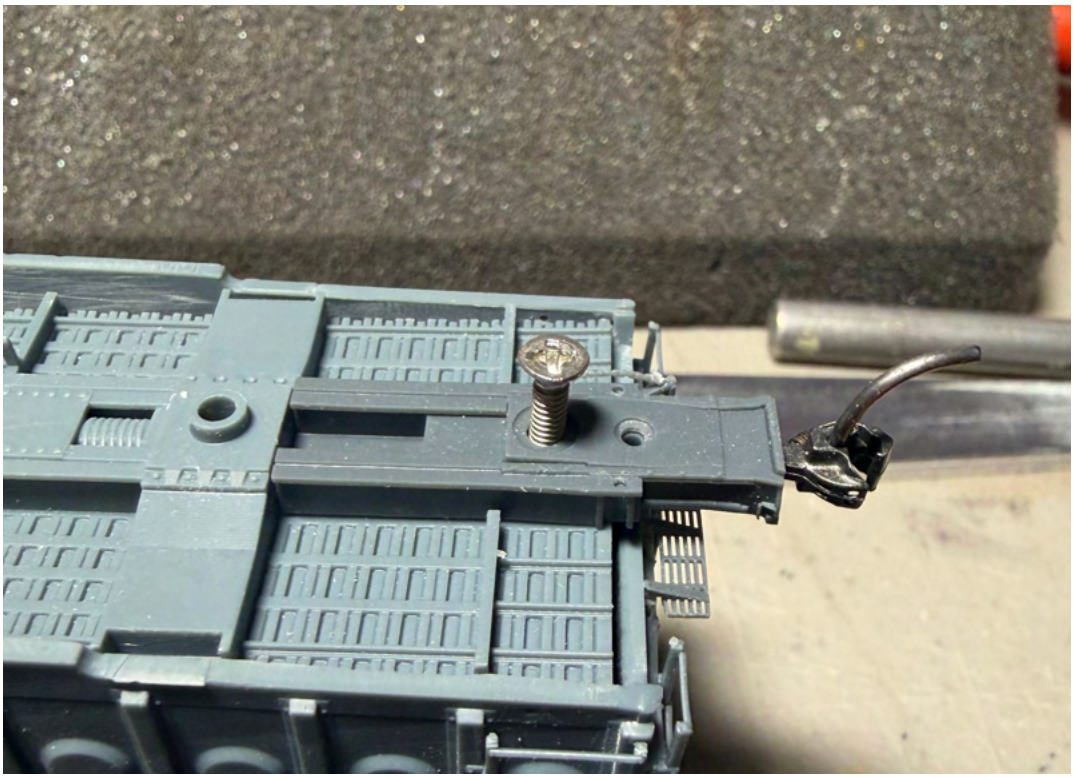
Before assembling the draft gear, carefully sit the underframe onto the body.



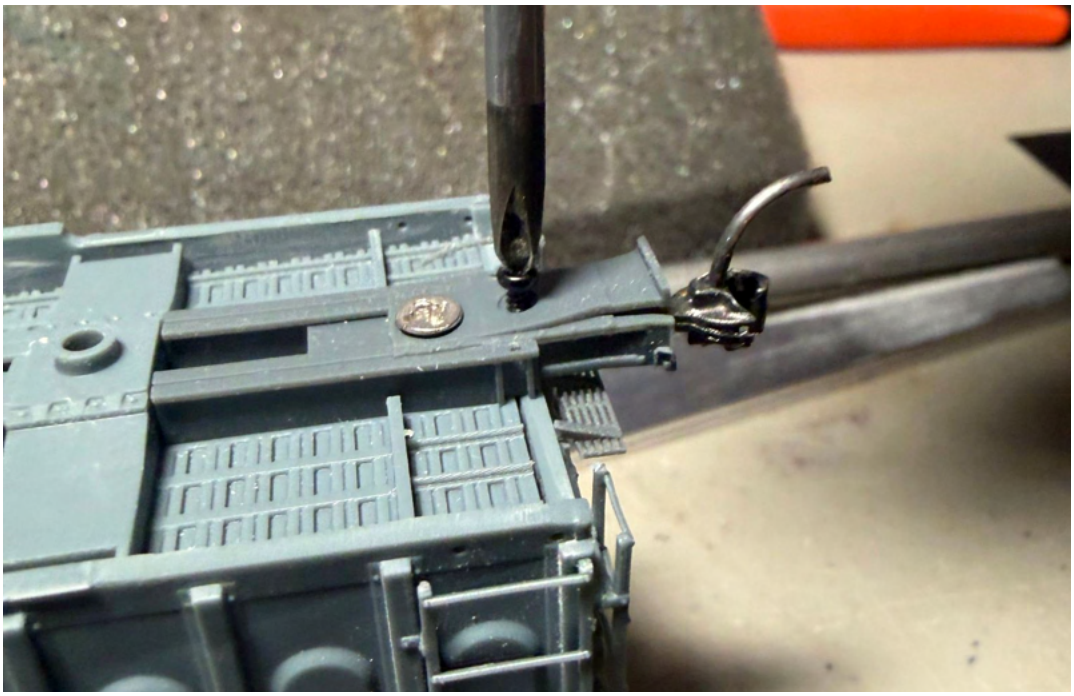
Place the main draft gear part onto the corresponding holes. Make sure the large pin sits in the corresponding hole.



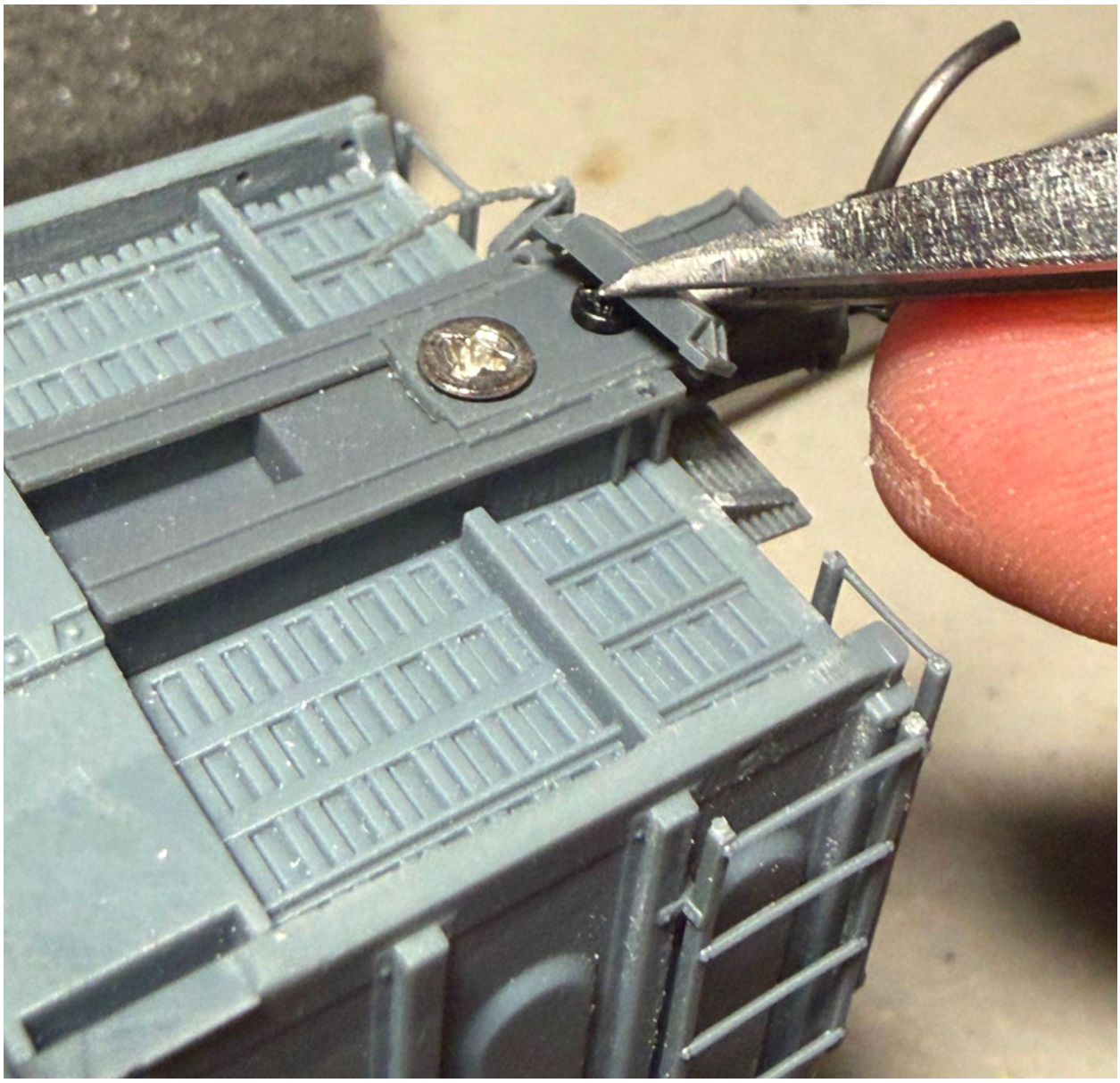
Install coupler (Use a long shank coupler) and place the coupler pocket lid on top. Screw in the flat head 2-56 screw into the large hole.



Then install small M1.4 flathead screw into the small hole



Once complete, Install the final part into the holes on the draft gear. This part can be installed after paint if the coupler pocket needs to be accessed. The part may need to be sanded in order to fit over the small coupler screw.

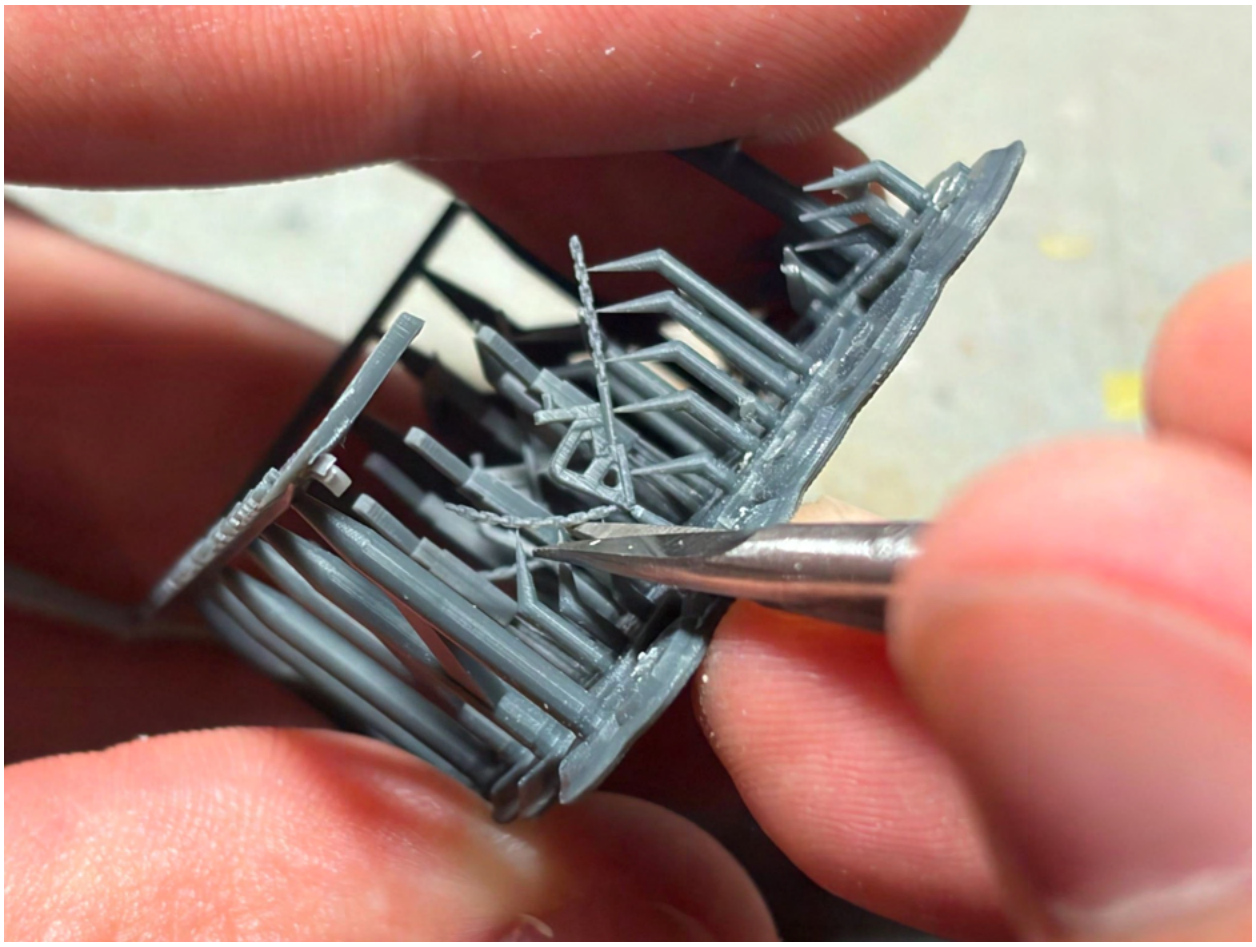


Coupler height

Coupler height can vary from car to car depending on a number of factors. There is extra material printed on the underside of the coupler pocket lid. If your car coupler height is high, sand this material down until it's at the correct height. If the height is still not remedied, then make sure the draft gear is level and not askew.

Step 7: Install the Hand brake bell crank

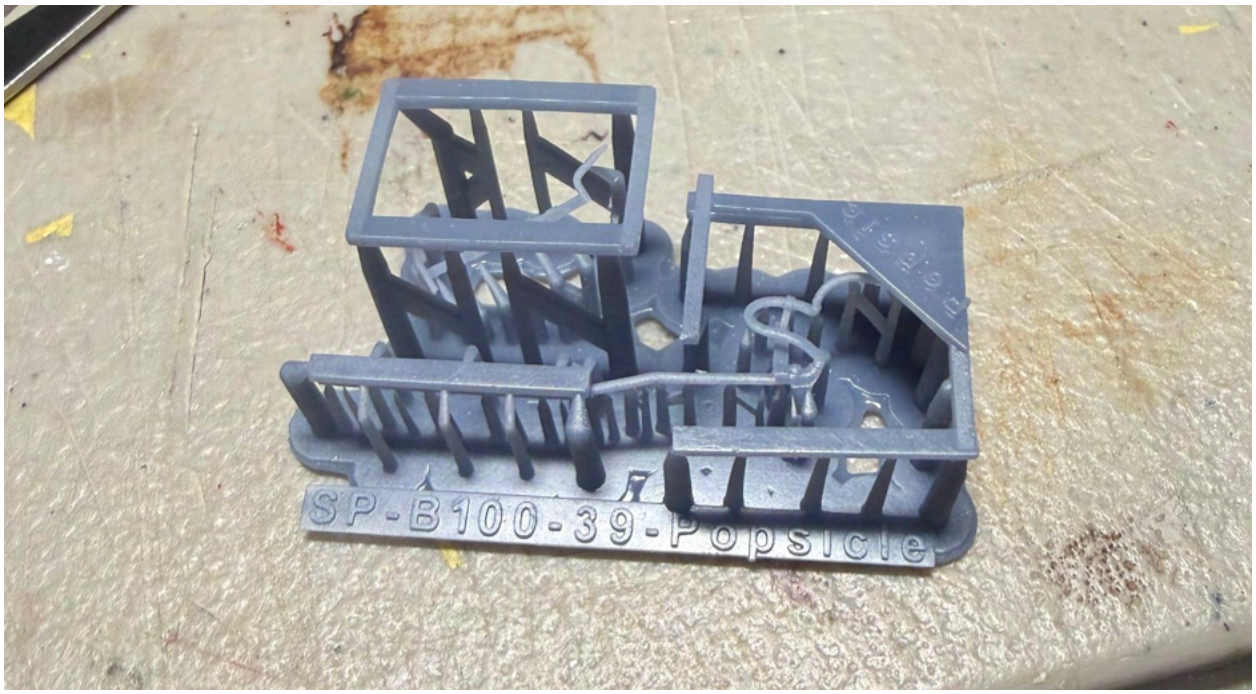
Locate the hand brake bell crank and remove from supports using the same method as before.



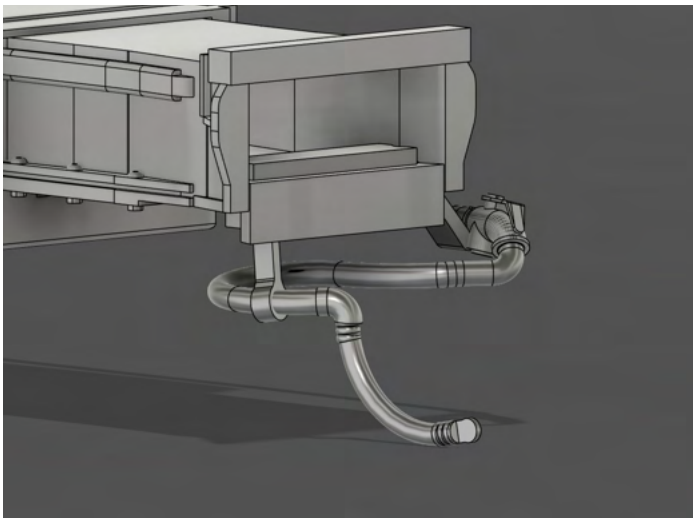
Once removed and sanded, locate the small indent + hole on the “B” end of the body. Install the part into the hole. Reference the following photo:

Step 8: Install hose and uncoupling lever

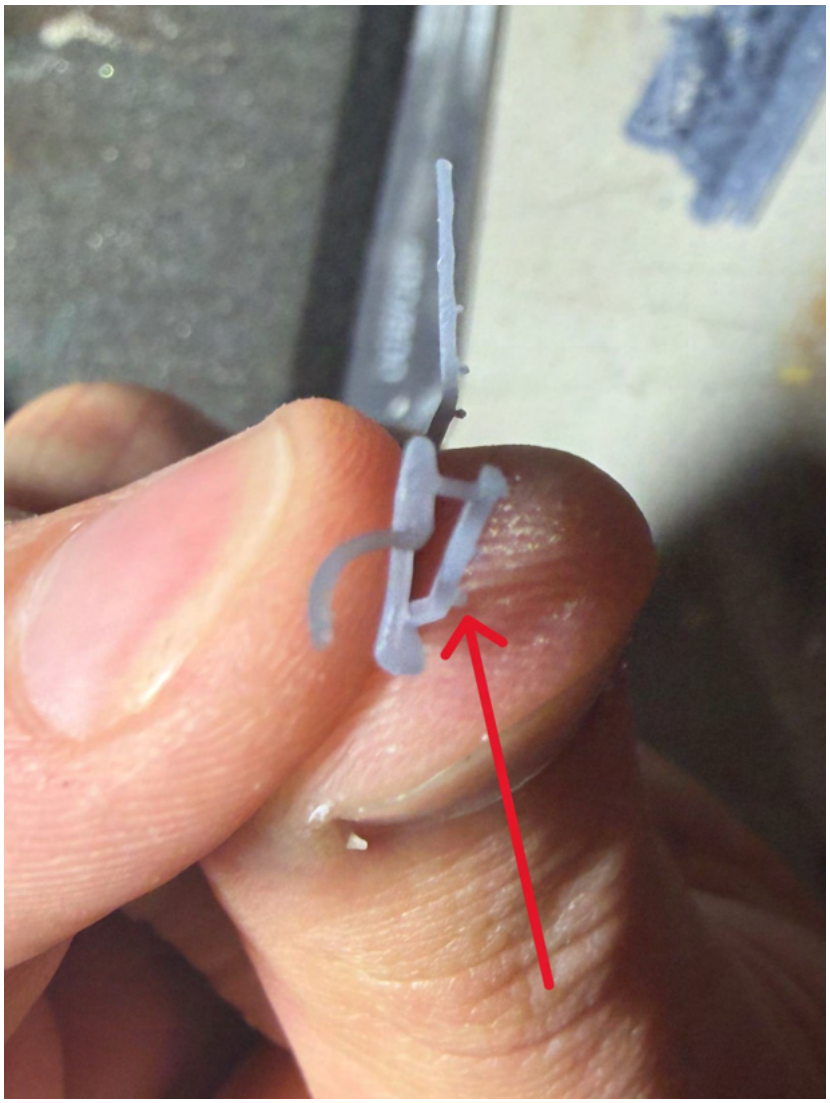
Locate the hose and uncoupling lever. These parts are printed using a flexible rubber resin.



When removing the parts from the print, start by removing the protective bracing. Once complete, we will start removing the hose. Keep the following things in mind while removing the supports:

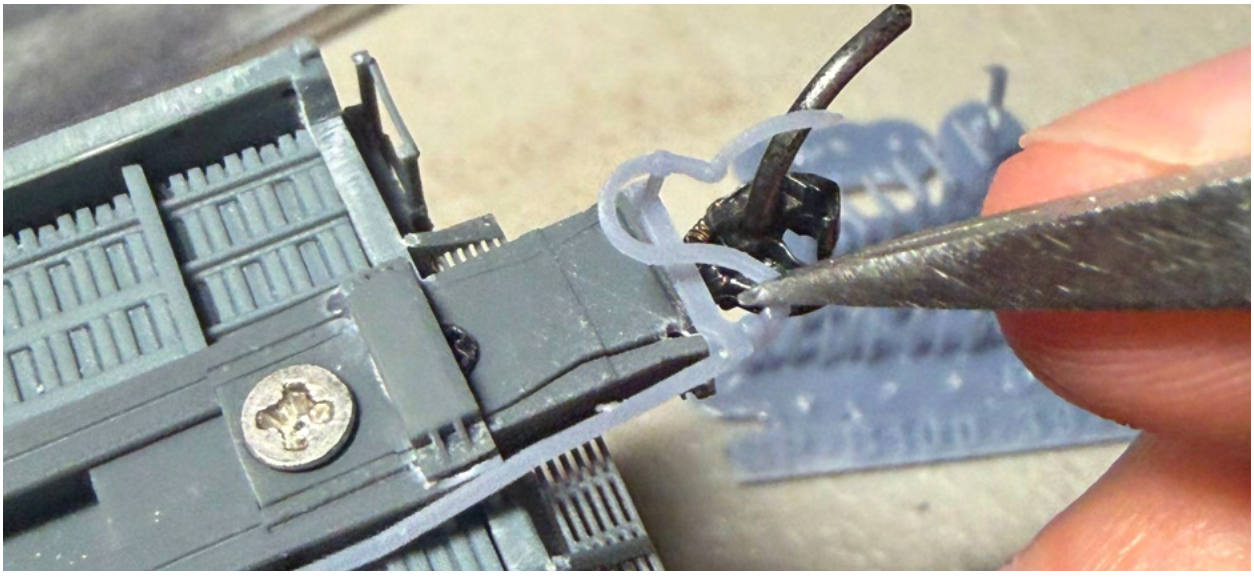


The hose part is a very complex shape. It includes a bracket that mounts to the coupler pocket and a holding arm which prototypically holds the hose. When removing the part, do not remove these details

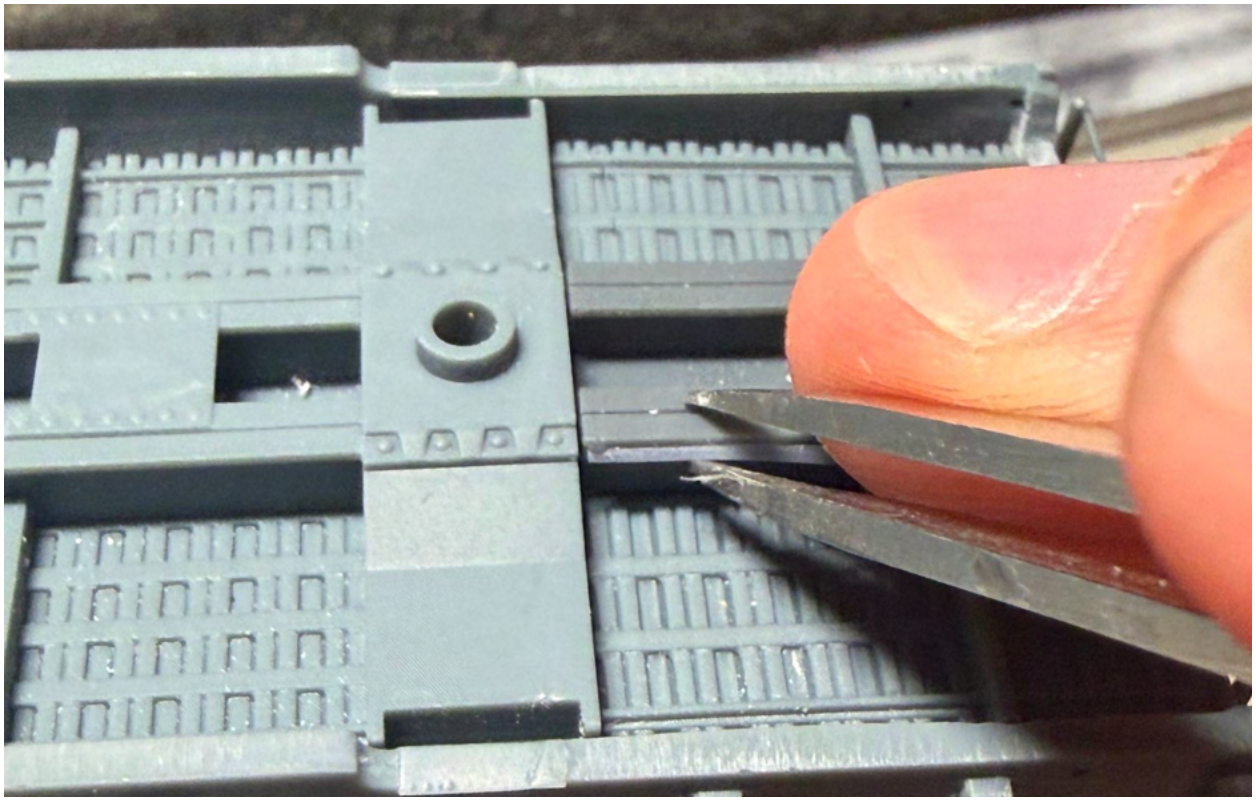


Do not remove the mounting pin. It is located right before the bracket angles down towards the hose.

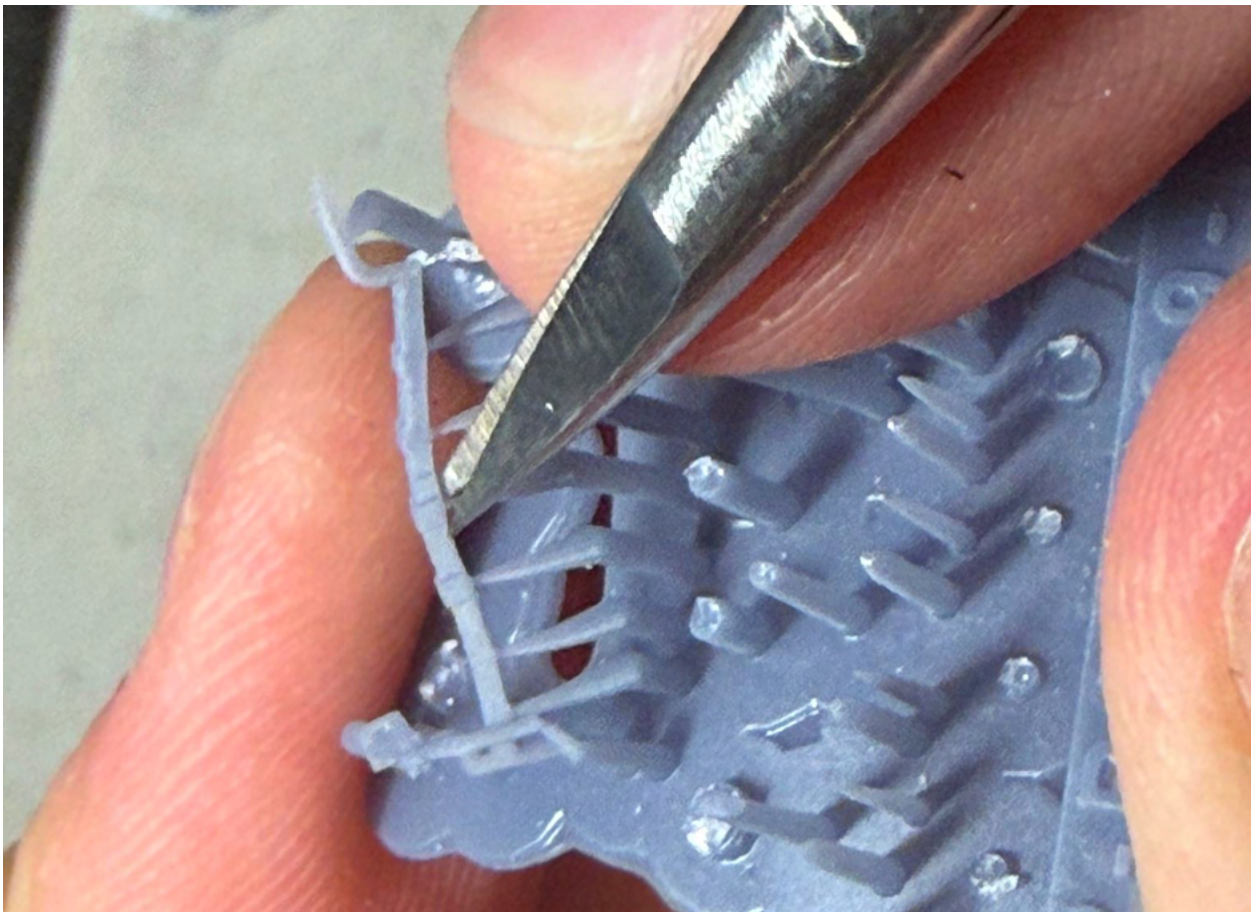
Remove any support nubs using a Hobby knife. The part is too flexible to use a sanding stick. Once complete, install the part into the hole between the coupler pocket lid and draft gear.



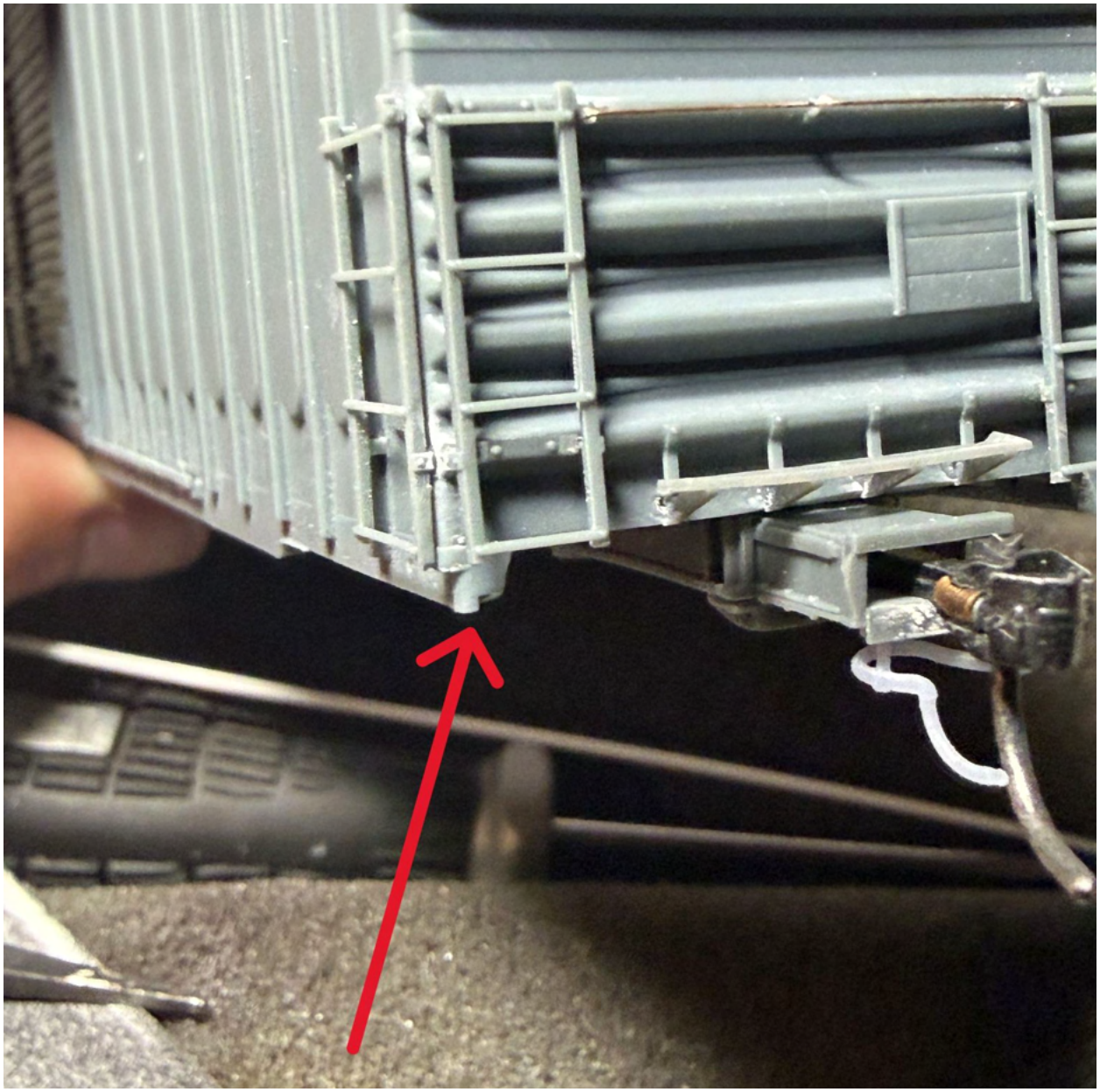
Install rear part of hose under the small mount near the bolster



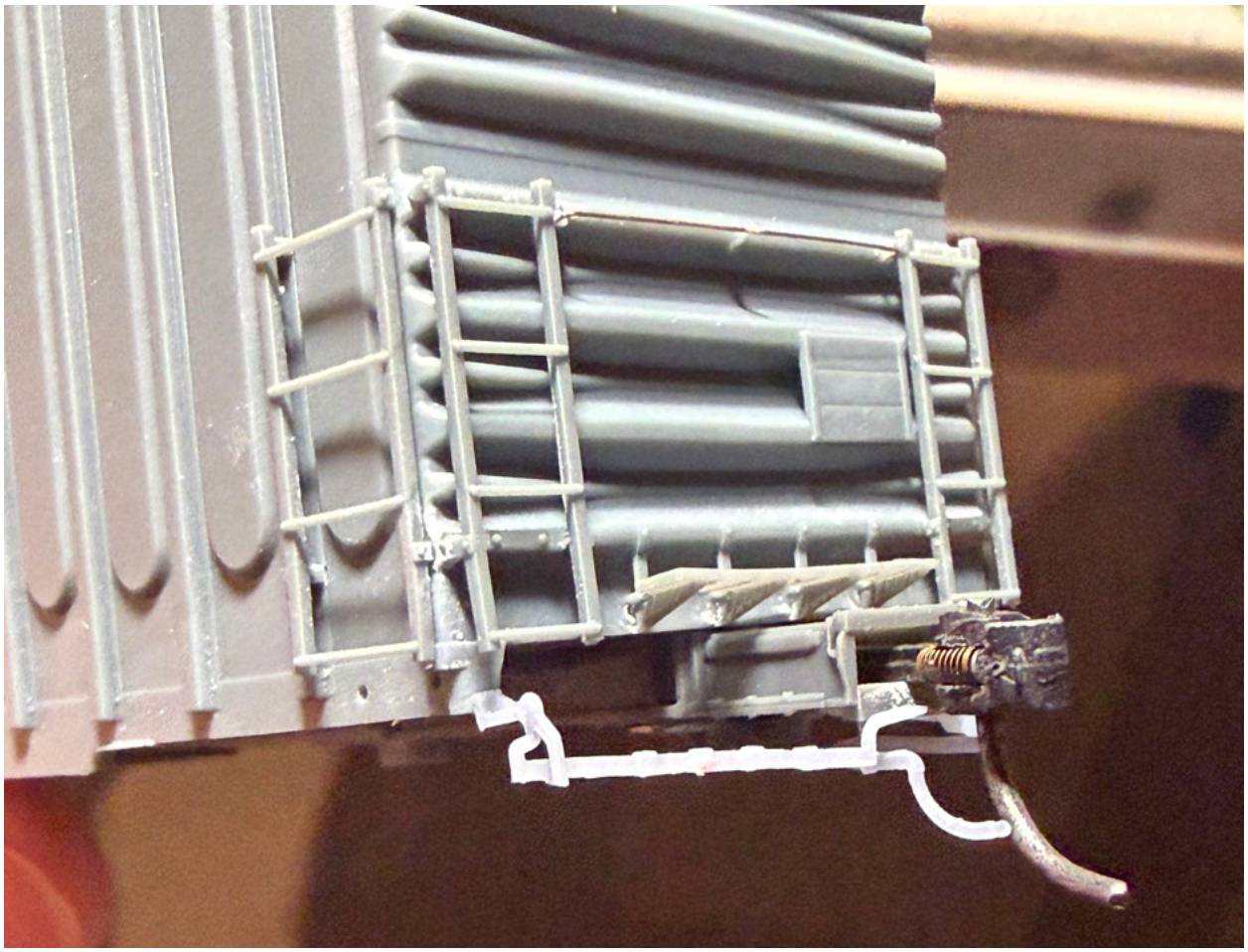
Next, remove the uncoupling lever from the print supports. Be cautious to not remove any of the details.



Locate this dimple on the body. This is where the mounting pin on the uncoupling lever will go

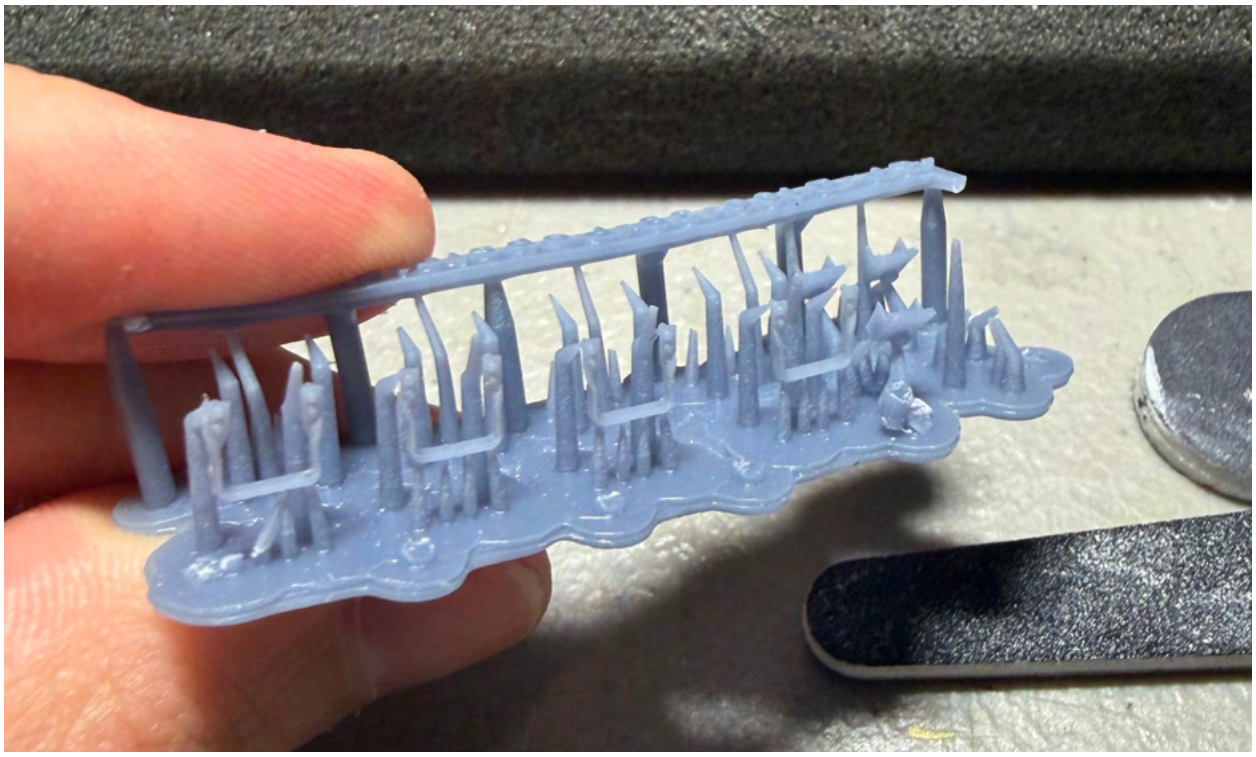


Install the uncoupling lever. I recommend gluing the other end of the uncoupling lever to the front face of the coupler lid.

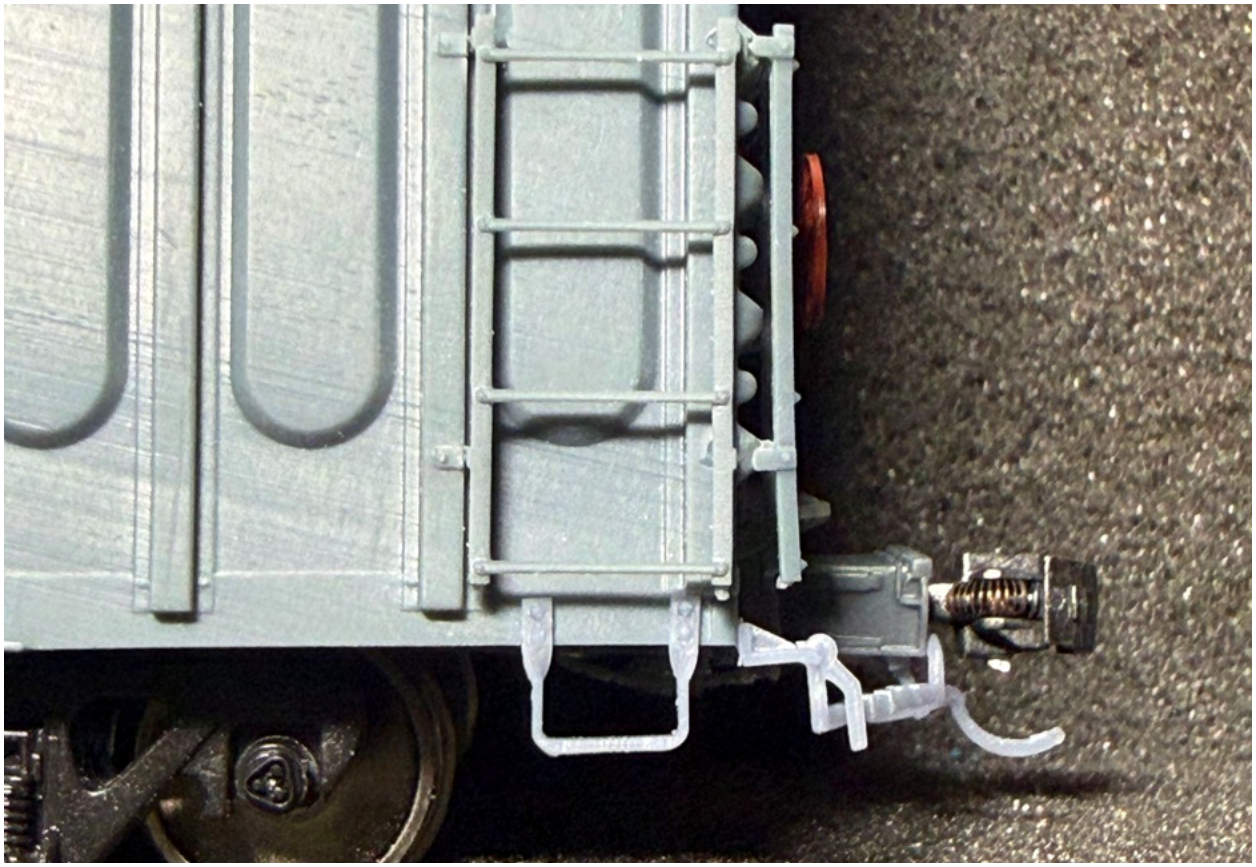


Step 9: Install stirrup steps

Remove stirrups steps from the supports using the previously stated method. These are also printed in a flexible resin. Do not remove the mounting pins along the back of the stirrup.

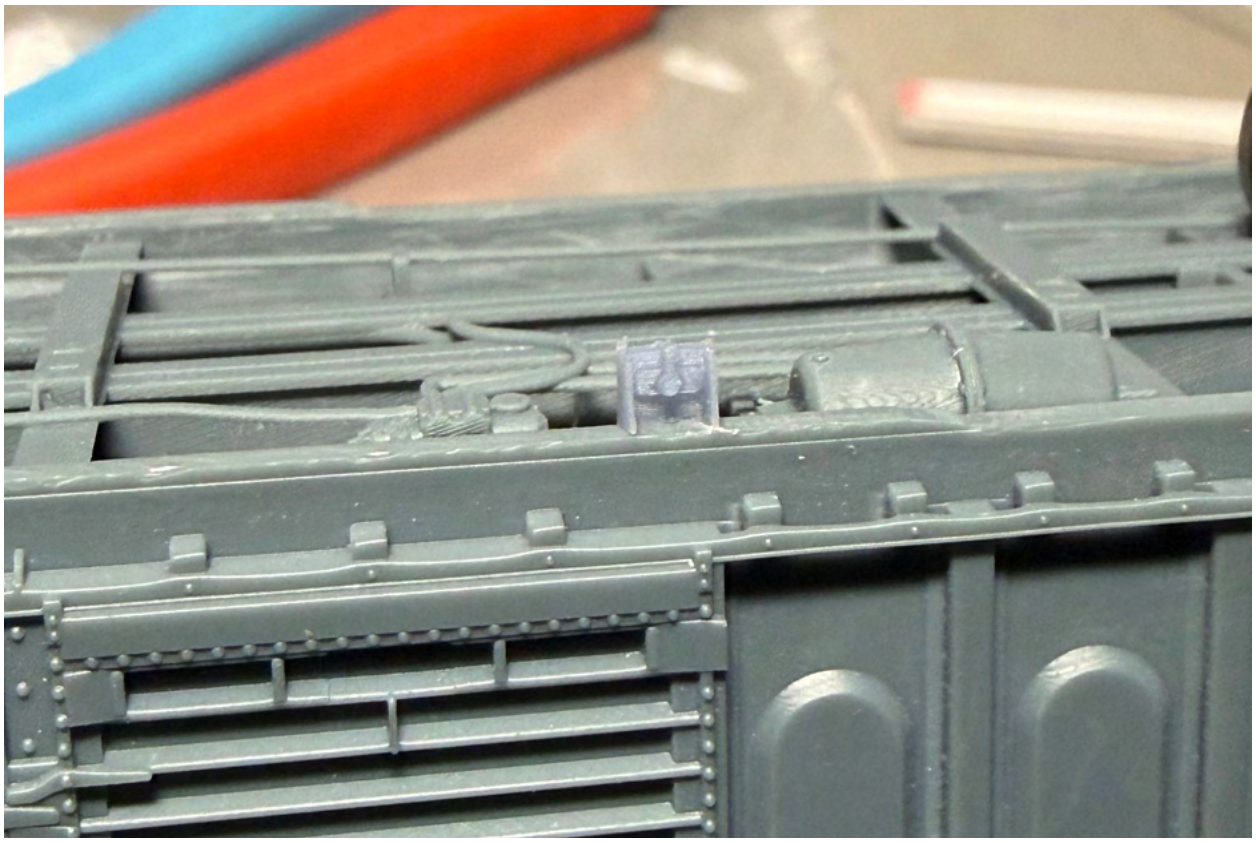


Install stirrups into the two holes below the side ladders. Repeat 3 more times.

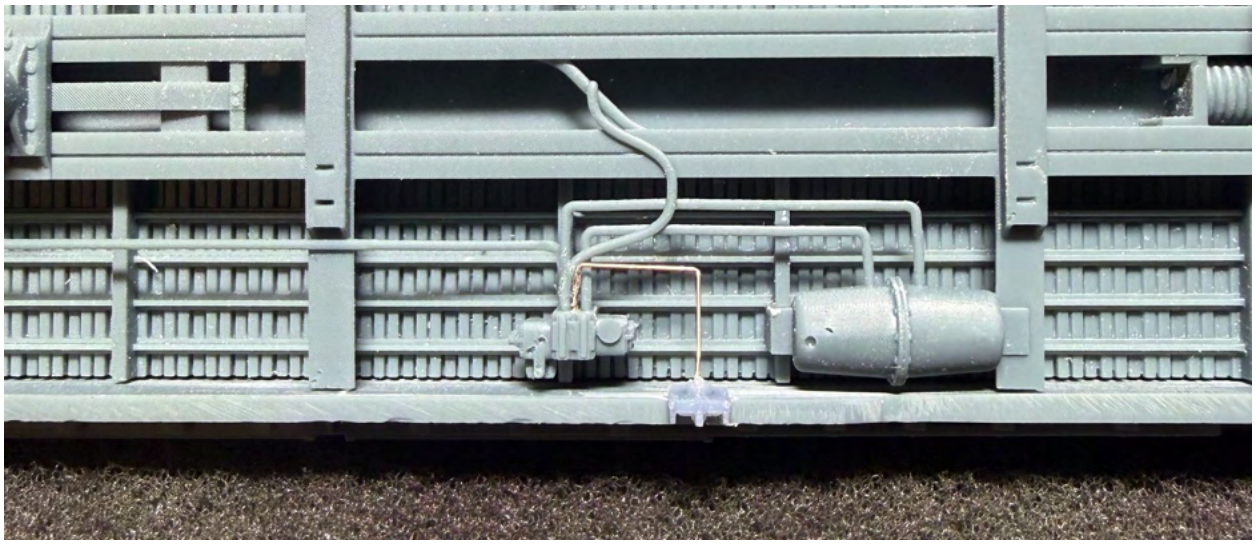


Step 10: Install retaining valve

Remove the retaining valve and locate the small indentation on the body next to the triple valve. Install the retaining valve in this location. Reference the following photo:



Bend a piece of brass wire (.008 to .012”) to join the retaining valve to the triple valve



Step 11: Install trucks

Install after market 36” Barber S-2 trucks. Use the remaining 2-56 screws to mount them to the body.

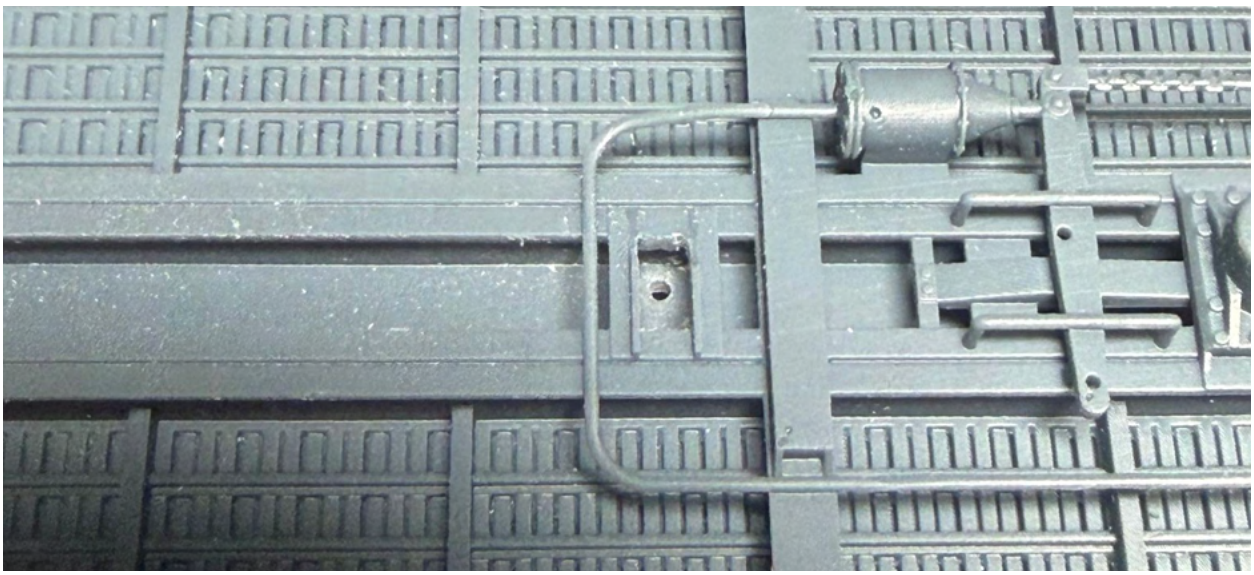
Step 12: Install low hanging brake piping

This is likely the trickiest part to do for this assembly. It requires a lot of custom bent components. Rely on the images to get the correct shape for the parts.

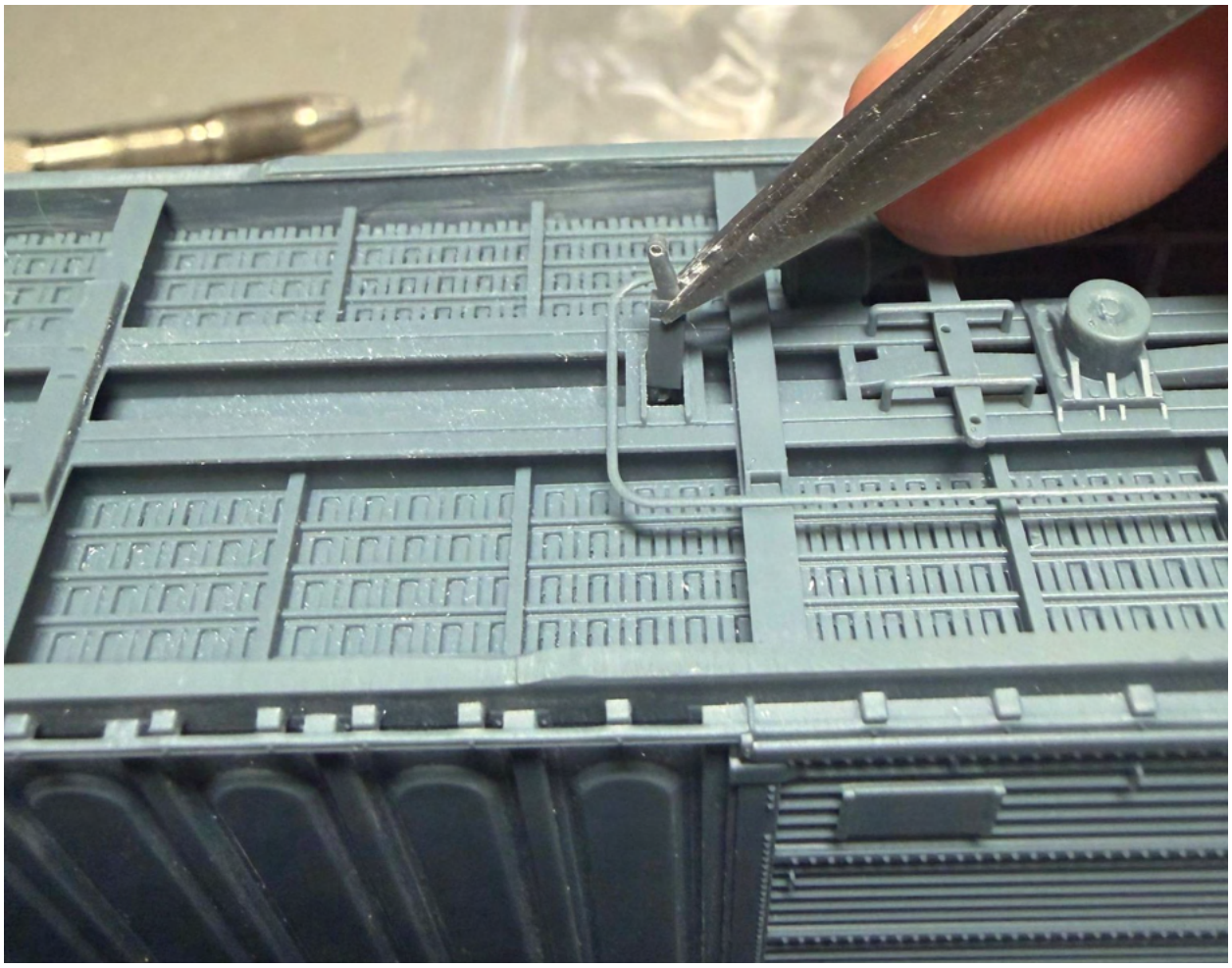
Rick Selby Photo

Looking at this picture, you can see the low hanging brake rods. Resin is not strong enough to produce these parts so we will be bending them using brass.

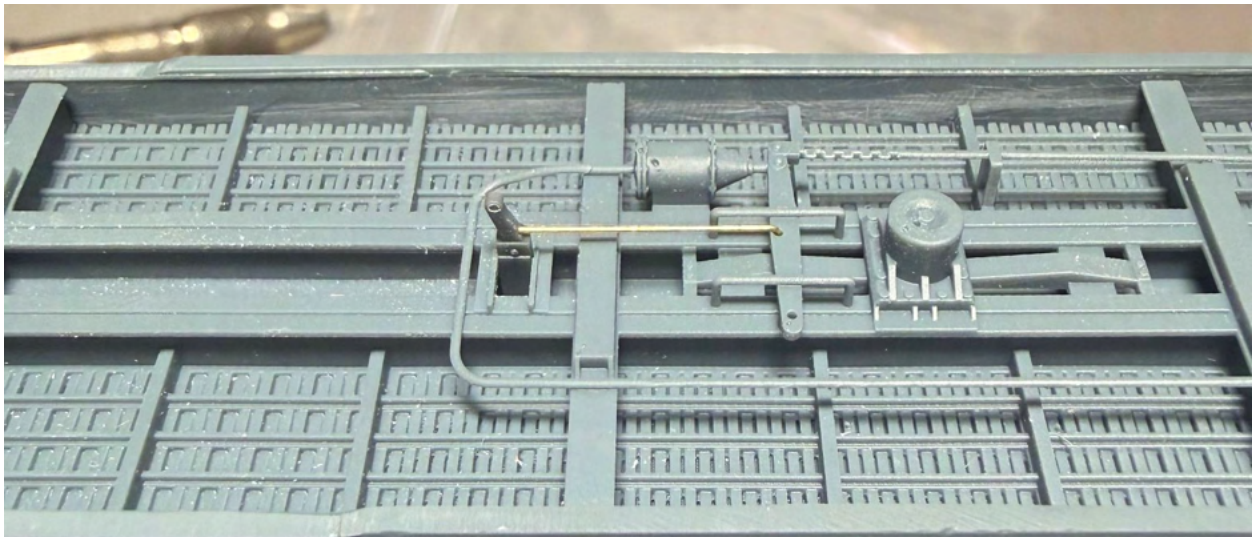
We will start by installing the low hanging brake lever, this part is printed in resin. Locate this part and remove it using the previously stated method. Do not remove the mounting pin located at the bottom. Locate this hole on the underframe:



Install the low hanging brake lever into place. I recommend (carefully) drilling out the hole on the top of the part to allow wire to be easily installed before installation.



Next, bend and install a piece of wire that spans from the cylinder lever to the low hanging brake lever. I recommend using a bigger gauge wire, around .012”.



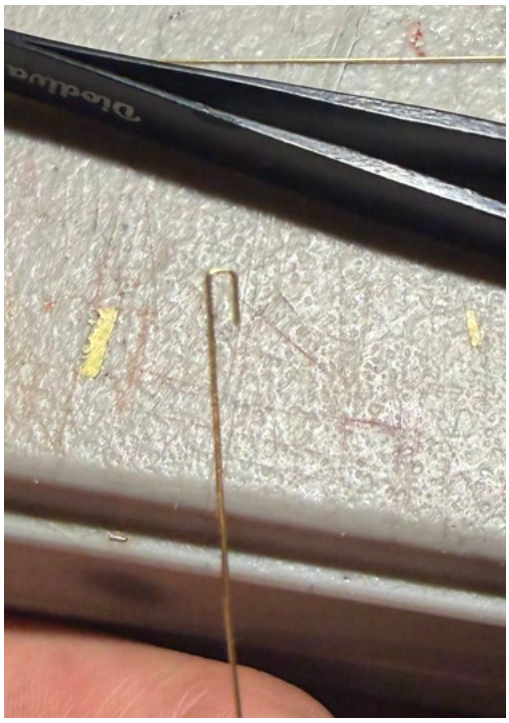
The next step is to install the low hanging brake rod holders

Robert Stott photo

This is a pic underneath a B-100-39. You will notice the metal holder that protrudes from the underbody. We will be using brass shape to produce this. There are three total (1 is a different height)

I recommend using .01”x.03” brass bars from details associates. Styrene could work in theory but might be more delicate in the long run.

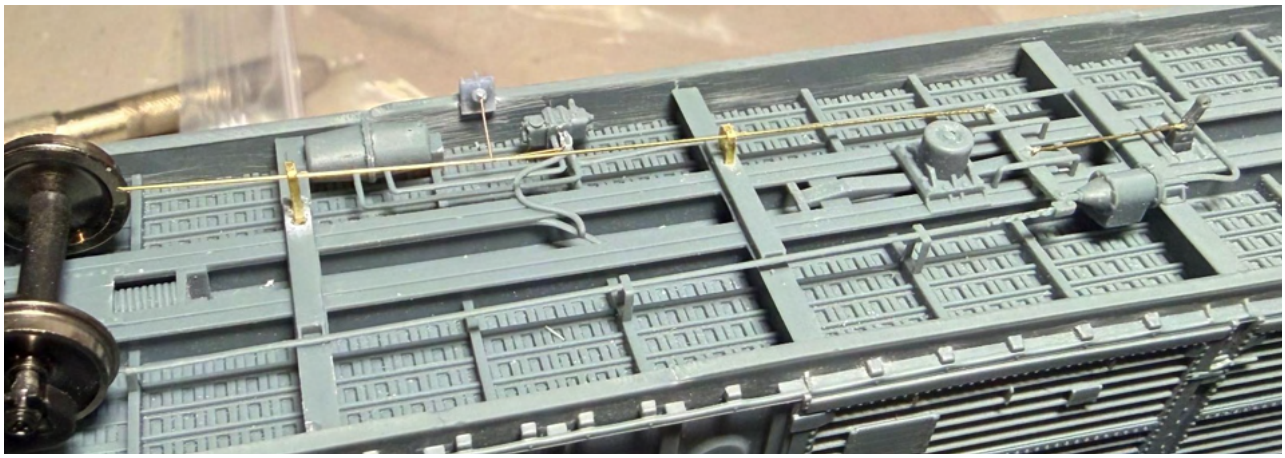
Using the brass bar, measure .141” of material and bend it 90° after that measurement. Bend the other side of the brass bar 90° and cut the excess material off to leave a flat, level surface on the bottom. Use the following pic as an example for shape:



Once complete, install the part into the 2 slots located closest to the center of the underframe. Use the following photo as a reference:

Next, we will be bending and installing the remaining two holders. Using the same methods as before, measure .188” this time. Repeat the same process as before (twice) using the new measurement. Once complete, install both parts into the slots. Use the reference photo below:

Once those parts are installed, we will now finish this off by installing the brake rods. We will first install the long spanning brake rod. Using the same brass wire as before, bend a pliers grip of wire slightly less than 90°. Next, slide the wire through the set of bent brass holders until the bent portion aligns with the holes on the cylinder lever. Install the bent portion into the cylinder lever. Reference the photo below for installation:



I recommend gluing the brass wire to the holders. Once complete, trim the brass wire near the closest wheel so it does not interfere with the truck.

To finish this off, bend another pliers grip of wire 90° this time. Thread this through the remaining brass holder until the bent portion aligns with the low hanging brake lever, not the cylinder lever. Install the bent portion into the hole at the top of the low hanging brake lever. Reference the photo below:

I recommend gluing the brass wire to the holder. Once complete, trim the brass wire near the closest wheel so it does not interfere with the truck.

That was the last step for completing the model