The parts in this kit are designed to be used on the Atlas ACF 3510cf cylindrical covered hopper to convert it to a Phase IV 3510cf car like those used by the Missouri Pacific. These instructions are written with the assumption you are working with an undecorated kit, or an unassembled and stripped model. Please read through these instructions to become familiar with them to help understand what each step is and how everything will come together.

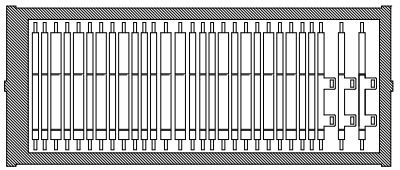
You will need to fill all of the walkway mounting holes (openings?) in the roof of the car. This can be accomplished several ways. One would be to insert the plastic walkway into the openings, glue in place and then slice off flush with roof. Another would be to insert pieces of styrene strip, glue in place and slice - repeat. Or you could just use some filler of you choice. Smooth areas to your liking.

Here is a trying part of the conversion, marking the holes for the new roofwalk supports. Getting the paper drill template to fold and allow you to mark drill locations on the top of outer edge of the long horizontal stiffeners will be a challenge. The drill template has an outline that is the same size as the roof. Normally, you would be instructed to cut on these lines and tape to the roof with all edges even. BUT you will also see little "+" marks to the outside of the long edges of the outline. Again, more options to consider. One would be to cut the template just to the outside of the marks and fold along the long edge line to sit along crease of roof/stiffener line. Another would be to painstakingly cut little scalloped tab areas around each outside "+" mark. This would allow you to line up the edges easier and the little tabs would fold flat on the stiffener easier. And another option would be to cut out the template on the outline proved and tape to the roof. Then, when you mark the inner hole for drilling, you will need to carefully mark each hole straight out to the outer edge of the stiffener so the two holes are even and perpendicular to the edge. All these options is due to the complexity of getting the template to be accurately positioned for drilling the support holes. Each side is a mirror image. As long as the end of the template is even with the end of the roof and the long edge of the template is even with the "crease" of the roof edge, the supports should line up evenly and as designed. *A tip on taping the template to the roof - using a paper hole punch, punch several holes in the template being careful NOT to remove any of the "+" marks. Then use small pieces of tape at each of those holes to tape to roof.*

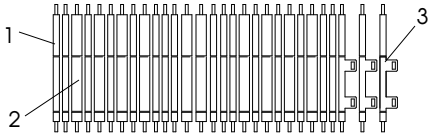
OKAY, got ya totally confused, scratching your head and throwing things? The words "trying part of conversion" were used. Well when you get back to the challenge and have the template taped to the roof, use the supplied T pin to mark a drill pilot point in each of the "+" marks. Once all of the "+" are marked, remove the template and drill a #78 hole in each of the pilot marks. If you need additional templates, they can be downloaded from our web site.

There are three different roofwalk supports in this kit. The corner ladder support (#3) has small loops protruding from one edge. Then there are two regular supports that are just different widths. In the drawing you will see numbers for each of the different supports. These numbers correspond to the numbers seen between each of the "+" mark pairs. You need to match these up as you add the supports. Removing one of the supports from the fret/

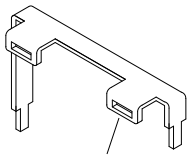
Supports as packaged
Remove from (shaded)fret



Shape of supports after trimming from fret - note fold lines dividing supports



frame, as close to frame as possible and looking closely for small etch marks on one side. At these marks, carefully bend 90 degrees creating two legs. Insert mounting pins into appropriate holes, glue in place with CA and move on to the next support. On the two corner supports with the ladder loops, these loops will need to bend down 90 degrees in the same direction as the legs. It will probably be easier to bend the loops before bending the legs down 90 degrees. Continue adding supports until all drilled holes have supports added to them.

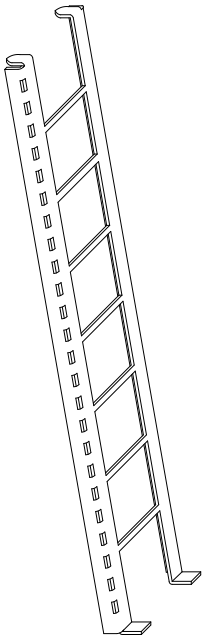


Shape of support #3 - note ladder loops bent down

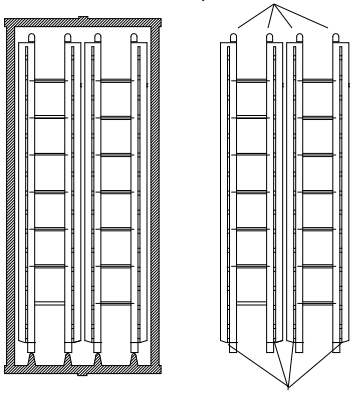
At this time we suggest you add any end detail like brake equipment and lines.

To form and add the ladders, carefully remove them from the fret/ framework so they look like the image below. You will see that each side of the ladder is divided in half by a series of slots and half etched on one side. Carefully bend the outer half of the side 90 degrees with the half etch side to the inside if the bend. A pair of small needle nose pliers may be used to make this long bend. Work slowly and with small movements to create a 90 degree angle iron side. At the top of the ladder, bend the two tabs over almost 90 degrees in the same direction as the ladder sides. These will insert into the loops on the corner support #3 when ladder is installed. The two bottom tabs bend out about 90 degrees, away from the ladder. These will rest on the end floor when ladder is installed. Once you are satisfied with the shape of the ladders, install tabs at the top into the support loops and the bottom resting on floor and CA in place.

Ladder bent to shape. Top tabs bent in



top mount tabs

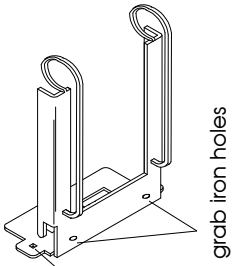


Ladders before and after being trimmed from fret/frame

Fold at divide lines

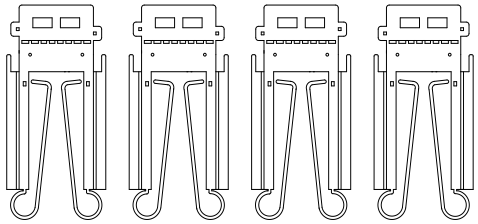
Moving to the corner stanchions, you will need a smooth, outer side sill to attach these to. Carefully remove the cast on corner grab irons, the stirrup steps and the end plate on the corner. To form the stanchions, carefully bend the sides in 90 degrees like you did on the ladders. The angled portion will point in to the car and the outer surface will be the smooth side. Now pivot the grab handles so the loop comes from the inside and loops out so the long handle is to the outside of the stanchion and the car. The end of the handle will go into appropriate hole after stanchion assembly is installed. The bottom portion of the stanchion assembly will bend in 90 degrees in the same direction as the stanchion sides. This bottom plate will rest against the bottom of the end floor for support. You may have noticed a small pin protruding from the lower corner of each stanchion side. These pins are just little stiffener pins that may help stabilize the assemble. If they interfere with the next step too much, they can be removed. And yet another item to note, there is a left and right version of the these stanchions. On that bottom plate, one of the holes is more offset to the center of the plate than the other. This 'offset' hole goes on the outer end of the car. Ok, now from the end of the car, slide the formed stanchion assembly over the car side sill with the bottom tab against the bottom of floor, outside against side sill and those two pins on the inside of the sill. End edge should be flush. Left or right designations refer to position as view car from the side.

'left hand' stanchion bent to shape, as viewed from side of car.



note offset stirrup step hole. this hole accepts 'plate' of stirrup step.

Corner stanchions trimmed from fret.

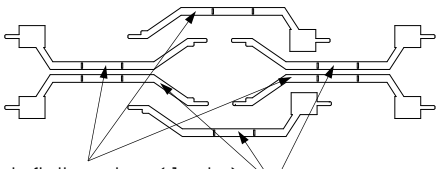


two left hand two right hand

Drill #78 holes in the two grab iron holes and install grab irons of your choice (not included in the kit). These will help hold the assembly in place.

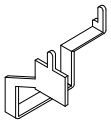
Also drill holes for the ends of the long grabs handle ends, insert handles in holes and CA in place when they are even with stanchion posts.

Shape of stirrup steps after being trim from

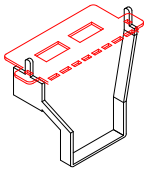


Left stirrup steps (1 extra)

Right stirrup steps (1 extra)



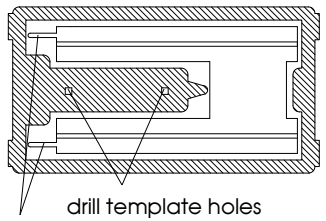
Formed, right hand , stirrup steps as view from 'inside' (bottom) of car.



'left hand' Stirrup step formed to shape, shown inserted into holes on bottom of stanchion tab

New stirrup steps can now be formed and added. Remove an appropriate corner stirrup from fret to match the image below. Two little etch dots are provided to mark where to bend the step up 90 degrees. There are a couple more bends to make that are not marked on the part. These are small bends to help line up the inner pin location. On the bottom plate of the stanchion assembly there are two pilot holes that will need to have #78 holes drilled into the bottom of the sill. Position the mounting pins of the step into these holes and CA in place. The 'plate' on the step is on the outer corner. Some tweaking may be required to inner leg to get a good shape and fit. Make adjustments needed before gluing. Use caution as too much tweaking may cause step to break. Repeat on remaining corners. Again, left and right refers to position when view car from it's side

brake housing stand as supplied, attached to fret



drill template holes

mounting pins

The brake housing stand should be mounted centered to the left of the coupler box. There are two drill template holes on the fret holding this piece. Position and drill holes where you are comfortable with. Bend sides of brake housing stand over 90 degrees and install in drilled holes. Brake housing and hardware is your choice.

The only item left from our kit for you to add is the roofwalk. It can be added about any time. Just center it on the supports and glue in place. Glue? There are several we can suggest. Canopy glue like the RC model guys use, it is flexible and tends to hold. Contact cement (original Barge) thinned with liquid cement (MEK) applied to both surfaces will work. Should it come loose, hit it again with MEK will reactivate the contact cement and hold them together again. Epoxy will work. Silicone II is flexible and will hold, but may be a paint issue. And then there is J-B Weld, a metal epoxy to bond metal. Slow drying but great for bonding metal to metal. We DO NOT recommend CA (super glue) type adhesives for adding the roofwalk.

Well, that pretty much wraps up our portion of this modeling project. Finish adding any other details you plan to add and paint the car. A decal set, produced by Mask Island decals, is available from Missouri Pacific Historical Society (www.mopac.org).

Thank you for using our product on your model. Please see your local hobby supplier for all of our photo etch details or visit us online.

Happy Modeling from Plano Model Products