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The tools that are required - new razor blade / cardboard from cereal boxes / Rail nippers / Sharp pointed tweezers (non magnetic makes life a little easier) / Needle nose pliers / Tooth picks / ruler/ black sharpie /Gel Super Glue (also makes life a little easier) The brands that I found to work well are LOCTITE / Lepage found at Home Depot. It comes in a very nice easy to squeeze bottle see photo # 1 / Safety glasses.

**These instruction are illustrated on a North American Railcar Corporation
 Cylindrical covered hopper**

Step #1 - Remove the trucks, trip pin on the coupler, using rail nippers also remove any original hose detail - see photo # 3



Step #2 - With the supplied wire cut about a 1 inch piece. Using the needlenose pliers 1/4" away from the end, bend it at a right angle. Keep the vertical edge flush with the end of the coupler box. On some cars it may have to just stick past the edge for wheel clearance. Glue in place. If you have a choice flush is better. No glue is needed on the vertical edge. Trim flush with the bottom of the coupler box see photo # 4 Now you can put the trucks back on. On some cars with thinner coupler box covers it is important to trim the wire so there is 1/16 inch below the bottom of the coupler shank. This is to keep the air hoses at the same height.

Step #3 - With cardboard from a cereal box make a jig like in the photo # 5,6 using ruler make a mark 3/8" from the stop that you have just made. I used a knife but you can use a pencil or a pen but this part needs to be accurate — very important. Now place one air hose so the magnet is against the stop and using a new razor blade cut at the 3/8 mark to give you a nice clean cut. At this point the color dot does not have to be up. On locomotives (very long cars like auto rack) since they like to swing out more on curves, the air hose should also be 3/8". With the locomotive and very long cars the hose should be attached under the center of the coupler shank. This is to compensate for greater swing in tight curves. The measurements seem insignificant but it makes a big difference. It is important to be accurate when cutting the air hoses.

