

Kitsap Live Steamers

S. P. Caboose

Construction Notes

These notes are intended to give you an outline of the method that was used to construct the first kit. There are several possible ways to attach the parts in this kit, and it will be up to the builder to determine which method is appropriate based on his available tools and experience. Some of the possible methods include spot welding, mig welding, and riveting. Another possibility is to use flat head screws, which are only partially countersunk to assemble the parts. The remainder of the heads can then be filed off leaving a smooth surface for finishing.

Two things that you might want to consider before you begin. You may wish to prime the parts before assembly to avoid rusting inside of the joints of the parts and if you wish to do rivets it will be easier to layout and drill the holes before assembly.

Construction

Please read through the instructions to familiarize your self with the construction of the kit. The kit is based on a Southern Pacific C-40 caboose. As we don't furnish any of the detail items such as ladders, grab irons and railings it can be modified to represent other prototypes. These choices are left up to the builder.

The materials that you received in the kit should consist of the following water jet cut parts:

- 2 ea. Floor plate halves
- 2 ea. Sides
- 2 ea. Ends
- 2 ea. Cupola ends
- 3 ea. Roof panels
- 2 ea. Doors
- 8 ea. Step side plates

From the framing material supplied you will need to cut the following parts:

1" X 2" rectangular tube

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|----------------|-----------------|
| 1 ea. @ 29.125 | Center sill |
| 2 ea. @ 14.375 | Bolster |
| 2 ea. @ 7.25 | Bolster doubler |
| 2 ea. @ 10.875 | Draft gear tube |

1" X 1" X 1/8" Angle

2 ea. @ 29.125" Frame side rails
4 ea. @ 6.00" Frame side rails (ends)

3/4" X 2" HRS

2 ea. @ 2.187" Draft gear spacer (save the scrap)

1" X 1/2" X 1/8" Channel

2 ea. @ 11.687 End beams

1/2" X 1/2" X 1/8" Angle

2 ea. @ 45" Body side support
4 ea. @ 11.25" Body corner support
4 ea. @ 4" Cupola corner support
12 ea. @ 6.5" Roof supports

1 1/4" X 1 1/4" X 1/8" Angle

12 ea. @ 3.375 Steps

You will find that all of the water cut parts will have a burred edge from the cutting process. Using a smooth file, remove the burrs from all of these pieces.

Frame

Place the two floor plate halves on a flat surface and lay the frame parts on them to check for fit. *Note; If you're welding the parts together use short stitch welds to avoid warping the floor plates.* If everything looks good center the bolster doublers on the bolsters and attach them together. Locate center and drill the appropriate size hole for your truck mounting pin. The drawing shows 3/8" but adjust the size if necessary for your situation. Layout and drill the draft gear tube. Layout and drill and tap the draft gear spacer.

Attach the 1" X 1" X 6" long angles to the corners of the floor plate, being careful to keep the edges flush. Attach the bolsters to the floor plates butting them up against the 1" X 1" angles. Butt the floor plates together, being sure to keep the edges in line and the plates tight together. Apply the center sill and the 1" X 1" angles to the edges of the floor plate. *Be sure to keep the angle and floor plate edges flush.*

Bolt the draft gear spacer to the draft gear tube. Center the draft gear tube on the floor plate and use the scrap of the spacer material to support the end of the tube at the bolster. Be sure that the spacer does not extend beyond the end of the floor plate. Attach the draft gear tube and spacer to the floor plate and bolster assembly.

Make up the end beams by cutting the flanges to the thickness indicated on the drawing. Make up the end pieces by cutting away half the diameter of a piece of 5/16" diameter rod (not supplied) and silver braze them to the ends of the channel. Cut the notch in the center of the end beam to clear the draft gear tube. Attach the end beams to the floor plate and draft gear spacer.

Body Assembly

As a reminder, if you were planning on doing rivets, now is the time to layout and drill the holes. I would recommend not installing the rivets at this time. After the body is assembled you can drill through any of the holes that were covered by framing and then install the rivets.

Begin the body by laying the ends on a flat surface with the window to the right and attaching the 1/2" X 1/2" X 11 1/4" angle to the ends, flush with the top of the outside corner and the edges of the pieces. Attach the 6.5" pieces of 1/2" X 1/2" angle to the top of the ends for support of the roof panels. Note that all of the body windows and the doors are set in 2" on the prototype which can be simulated on the model by installing a frame around the window openings and the sides and top of the door on the inside of the walls 1/4" thick. (Material not provided)

Attach the 4" pieces of 1/2" X 1/2" angle to the edges of the cupola ends flush with the top corner and the outside edges of the pieces. Attach the roof support angles as shown on the drawings.

Set the frame right side up on spacers to allow a couple of inches clearance below the outside edges. Set the body ends on the floor plate and support with magnets or blocking to keep them vertical. Set the sides up and clamp them to the ends at the top corners being sure to keep the top of the sides even with the top of the ends. The inside corners of the sides and ends should meet at the inside corner of each piece. (See detail on drawing #8) Attach the sides to the ends and the floor along the bottom. Attach the 1/2" X 1/2" angle along the top of the sides making sure that the top of the angle is flush with the top of the sides. Now add the cupola ends making sure that the top of the cupola ends is even with the top of the cupola sides.

The corners of the body on the prototype were radiused and if you wish to model this you will need to grind and or file the corners to a 3/16" radius. *Do not radius the corners of the cupola.* Fill any cracks with an epoxy metal filler and file and or sand smooth.

Steps

The steps are constructed from the 1 1/4" X 1 1/4" angle, giving you the correct tread and rise dimensions. Cut 12 pieces to the correct length being careful to be very accurate for a good fit. An easy way to assemble the steps is to obtain a 12" piece of 1" aluminum angle and clamp it in a vise with 6" extending out one side. Clamp the first piece of step angle to the vertical section of the aluminum angle and the next piece to the horizontal section and weld them together in the joint. Move the assembly up and repeat for the other step. Watch the orientation for the correct tread and rise dimensions. After you have assembled the angles sandwich the angle assembly between two of the step side plates and attach.

To attach the steps to the body, turn the caboose upside down and support. Set two of the step units in place on one end and clamp a straight piece of material across the bottom of the steps to hold them in place while you attach them to the body. Repeat for the other end.

This completes the assembly of the body of the unit. The roof panels are supplied flat. Decide if you wish to have a removable roof section. We would recommend that you cut a short section from the long roof piece to span the end platform area if you wish to do so. This will enable you to attach the ladder and or railings permanently making them less likely to be damaged. Bend the roof panels to fit and apply.

Complete the details that you desire and trucks and couplers and you're ready to roll!

Thank you for purchasing a KLS caboose kit and we hope that enjoy it.

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