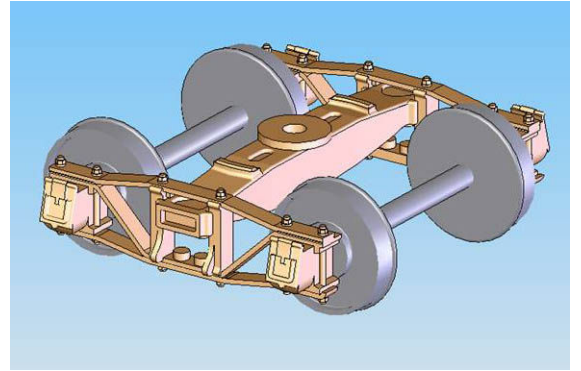


PRR 2D-F1 Archbar Truck Kit Instruction

14 SEPT 09
ver 1.03 web version

Thank you for purchasing our PRR 2D-F1 Archbar truck kit. The patterns for the lost wax castings were generated by Bill Lane using the 3D AutoCAD program Solidworks. Bill has generously given us permission to use his patterns. The assembly is pretty straight forward. The sideframes do need to have the openings for the journal box resized to press fit the Celcon® journal bearings.

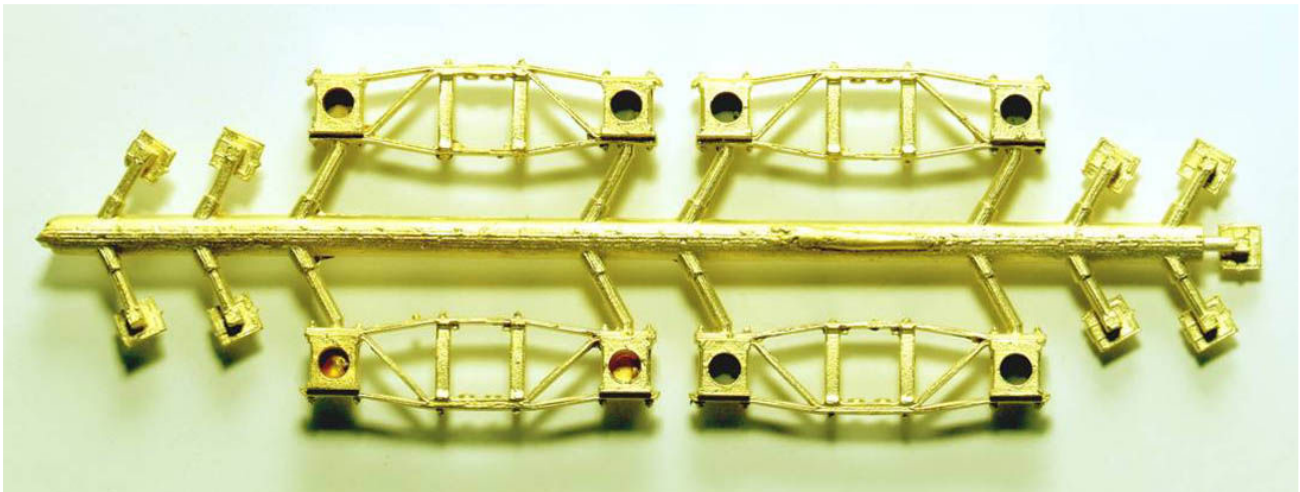


Parts list:

- Brass sprue with 4 side frames and 9 journal box lids
- Brass sprue with 2 truck bolsters for flush mounting on car bolster, (marked 'brass cars').
- Brass sprue with 2 truck bolsters for spigot mounting on car bolster, (marked 'SHS cars').
- Celcon sprue with journal bearings (8)
- Truck Springs (8)

Suggested tools:

- A #29 half round drill to re-size side frame journal box openings.
<http://www1.mscdirect.com/CGI/NNSRIT?PMPXNO=1677964&PMT4NO=70546319>
- For SHS cars only, #21 half round drill to re-size side frame journal box openings.
- Drill press (highly recommended), electric or hand drill.
- Drill press vise (highly recommended) or small vise to hold journals during drilling.
- KD spring tool or small flat bladed screwdriver to insert truck springs.
- Small square and flat needle files to clean castings of flash and sprues.
- A few inches of thread to weave through the springs to prevent them from running away during insertion.



Step by Step Instructions .

NOTE: Please **READ** all the steps before starting. You may wish to complete in a different order.

1. Resizing the journal bearing hole.

With side frames in a vise, you need to drill out the existing opening to accommodate the Celcon journal bearings with a #29 half round drill bit. Brass is machined dry (without lubricant) and you should use a very slow speed to prevent the drill bit from grabbing the brass.

A note about drilling brass. Brass is a much softer alloy than the metals that twist bits were designed to drill. The twist bits tend to grab the brass and can either deform the part you are drilling or actually spin the vise holding the part. Twist bits can be modified for brass with a grinder. To do this, align the axis parallel to the flat end of the wheel and gently remove the sharp positive rake edge of the drill lips equally on both sides. You can read more at:

<http://www.mmsonline.com/article.aspx?id=14722>

PS for me it was just easier to purchase the correct drill bit for brass from MSC.

1a. Resizing bolster king pin opening for SHS cars.

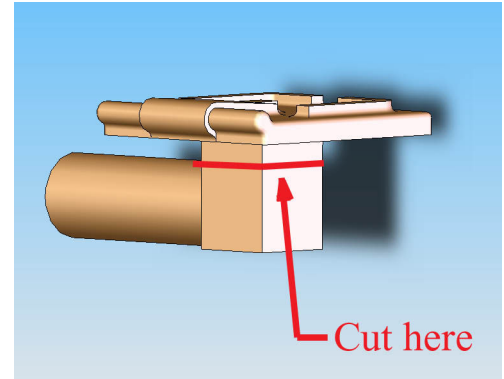
Place the bolster in the drill press vise and run the #29 half round drill through the king pin opening. On the bottom of the bolster you need to countersink the opening to seat the brass washer for the king pin screw. You only need to go down enough for the brass washer to seat. Use a #21 half round drill.

2. Journal bearing Insertion.

If you are planning on baking after painting, or soldering the journal box lids to the side frames, this step should occur after these actions to prevent heat damage to the Celcon journal bearings. You can use either a small panavise, pliers or channel locks to push fit the journal bearing into the side frame. The journal bearing should be a press fit. If you make the hole a bit too large, the axle will hold it in place, but it makes it a bit more difficult to assemble. The journal bearing should be pressed flush with the back side of the side frame. It is OK if it extends out a few thousandths, but any more and the axle ends may be pinched and this will effect the rolling characteristics.

3. Attaching the journal box lid.

Remove the journal box lid from the sprue by cutting away the runner, leaving only a very small square boss (see figure X). You can cut the runner away from the journal box lid, so that no filing is needed to correctly insert over the journal box. The journal box lids can be attached using ACC or solder. If you do solder, this step should be done **before** inserting the Celcon journal bearings into the side frame. Some of the lids may be bent on the brass sprue. The lid is very thin and bent ones can be straightened out once attached journal box. Once attached, press the bent lid on a hard surface and they will straighten.



4. Painting - -

It is best to decide if you want to bake your painted truck parts before you install the journal bearings. Unless you are planning on prepping the part with a sand blaster, a primer is recommended. Remember, several light coats are better for seeing the details than one thick coat.

5. Truck assembly -

- Insert bolster at 45° angle through each side frame one at a time.
- When bolster has entered and guides have lined up with the side frame, turn bolster 45° and push upward, make certain that the two bosses of the bolster are on the bottom side of the bolster.
- With bolster in place on one sideframe, insert the wheelsets
- Holding the side frame against the thumb, hold both wheelsets with two fingers
- Place opposite side frame in right hand wheelset and turn side frame 45° and insert bolster and left hand wheelset carefully turning entire assembly 45° until entire assembly snaps into place.
- Turn completed assembly upside down. Hold bolster flat with fingers of left hand.
- Weave thread through center of two spring. Using a KD spring tool (or small flat screwdriver), insert spring on each bolster boss. Compress spring using tool and insert on side frame boss. Repeat on other side of truck. Once inserted, carefully remove the 4 threads so that the springs do not dislodge.
- Consider working over a small dish pan or beer flat. Springs are known to pop out during assembly (the thread should prevent them from going very far).

