

Thow bogie cattle wagons – Screw coupled version Assembly instructions

Three variants of the Thow bogie cattle wagons were built over four separate shop orders between July 1890 and 1898. Over that time 36 wagons were produced, the last two remaining in service until their withdrawal in 1957.

The first variant is the initial 1890 prototype BCW 6251 which is covered by the 1890 kit. The next 25 BCWs built are represented by the 1891 kit while the final ten wagons built are covered by the 1895 kit.

Kits for each of the three variants have been produced and these instructions cover assembly of all three types. Specific differences for particular variants are noted in the text. Screw couplers are supplied in this kit. It is worth noting that these wagons were never fitted with auto couplers.

Recommended adhesives:

Superglue for polyurethane parts eg. Green Zap a gap. Some brands of superglue may not stick the plastic used in this kit. Unless you know a particular glue will work, testing the glue on some scrap is recommended.

Epoxy glue eg. Selley's 5 minute Araldite for the fixing the etched buffer springs to the end castings.

1. Remove the flash from the castings with a sharp knife. Take particular care when cleaning the ends to avoid damaging the top part of the castings as it is very fragile (Image 1). Use of a knife with a sharp, narrow pointed blade is recommended.
2. Drill a 1.1 mm hole through each of the buffer shanks (drill bit supplied). Drill a 1.0 mm hole in the centre of the buffer beam for the shaft of the hook coupler.
3. Trim the cast buffers off the sprue and tidy up the buffer heads with a file or a Dremel. Unfortunately the first batch of buffer castings have too much material on the head. If this is a concern, it can be ground or filed back to a thinner profile.
4. The buffers have been cast with longer shafts than necessary. Each shaft needs to be trimmed so the length from the front face of the head to end of the shaft is 8.7 mm. Use a pair of vernier calipers to make sure this distance is correct.
5. Drill 0.8 mm holes in four small squares of styrene. Insert the buffer castings through the buffer stocks then superglue a styrene square to the end of each buffer shaft. These are stoppers that prevent the buffers from falling out (Image 1).
6. Remove the phosphor bronze springs from the fret and Araldite a 2 mm section in the middle of each spring to the centre of each end. Don't use too much glue or the spring won't work. Hold the spring in place with the small peg (supplied) while the glue sets (Image 2).
7. Re-drill the 1.0 mm hole in the buffer beam to make a hole through the spring for the hook to pass through.
8. Glue the sides and ends together. The best way to do this is to glue one side to one end - making sure they are square. Repeat for the other side and end and then glue both of these assemblies together.
9. Drill and tap an M2 thread in the bogie mounts on the floor casting.
10. For the 1895 version only, glue the Westinghouse cylinder onto its pad on the underside of the floor (Image 3).
11. To allow the sprung buffers to work, the longitudinal beams at each end of the floor have to be trimmed back and a small notch has to be cut out of the centre of the floor to clear part of the spring where it attaches to the end of the wagon (Image 3).

12. Position the floor inside the body. The buffer springing does not allow the floor to be inserted from below so it must be fitted through the top of the body. The sides may need to be flexed slightly to allow the floor to fit through. Once happy with the positioning of the floor and after checking that the buffers spring freely, glue the floor in place.
13. Fit the sub-roof and check it sits down into the body. If it doesn't, material may need to be removed from the tops of the sides and ends with a fine file. Once happy it is correctly placed, glue it to the body.
14. Glue the corrugated roof to the sub-roof
15. On 1891 & 1895 versions the horizontal bars have to be glued to the ends and sides (Images 4 & 5 show their placement).
16. On the 1895 version fit the brake hoses to the buffer beams (Image 4).
17. Each brake wheel comes as two halves that have to be folded together. When over-folding to an angle between 90° and 180° the bend has to be made away from the etch line. Cut the brake wheels from the fret, then over-fold them and solder the two halves together. Clear the hole in the centre of each brake wheel with a 0.45 mm drill.
18. Drill two 0.5 mm holes through each of the brake wheel supports on the floor casting. Insert 0.45 mm wire through the lower holes and bend each end to 90° to form the locking handle. Insert another piece of 0.45 mm wire through the top holes and position the brake wheels so that they can be glued to both the support and the wire (Image 5). Trim off any excess wire.
19. Four truss rods are bent from lengths of 0.45 mm wire. Slide a plastic turnbuckle to the middle of each piece of wire prior to bending the angles (Image 4). Glue the ends of each truss rod into the angle between the floor and the bogie bolster. Glue the rods to the small supports cast on the large cross members (Image 3).
20. Assemble the hook couplers as per the separate instructions. Insert the shaft of the hook through the hole in the end. It should be an interference fit so that the hook will not move freely in the hole. Adjust the position of the hook so that the turnbuckle on the coupler sits in line with the front of the buffers. Glue the hook in place (Image 6).
21. Test fit the waisted bearings into the etched holes in the bogie frame. The etched holes may need to be opened up slightly with a round file or a suitably sized broach. The flange of the bearing has to be soldered to the side with the half etched lines (Image 7).
22. Over-fold the top round spacer making sure it is on the opposite side of the etch to that with the half etched lines. Solder it in place.
23. When folding etched parts to 90°, the bend must be made towards the etched line. Fold the sides of bogies to 90°. Fit the triangular support etches into their slots and secure them by twisting the protruding tabs.
24. When happy with the assembly being square, apply solder along all the etch lines then trim off the excess tab material.
25. Clean the flash from the bogie side frames. Locate the centre of each axle box in the back of the casting and drill a 1.8 mm hole. Open out the top of each hole with a 2.3 mm drill to allow the sideframe to clear the bearings (Image 8). A spare sideframe is supplied.
26. Fit the wheels and glue the side frame castings to the etches.
27. Fix bogies to the underframe using M2 screws ensuring they are not so tight as to prevent the bogies from rocking side to side.
28. Paint the wagon, apply decals (Image 9), seal the surface and weather to taste.

References:

General assembly and painting techniques:
Branchline Modeller No. 1 Pages 35-41

Goods wagons of the NSW Railways (Eveleigh Press, 2019) Pages 300-303

Stock wagons of the NSW (James McInerney)
www.oocities.org/james_mcinerney2000/stockwagons.htm

Painting and weathering a BCW: Australian Journal of Railway Modelling No. 9 Page 43

BCW instructions—Photos



Image 1. End showing styrene stoppers glued to the ends of the buffer shafts. The pieces marked with an arrow are very fragile.



Image 2. End showing etched spring being held in place by a peg while the glue securing it to the end dries.

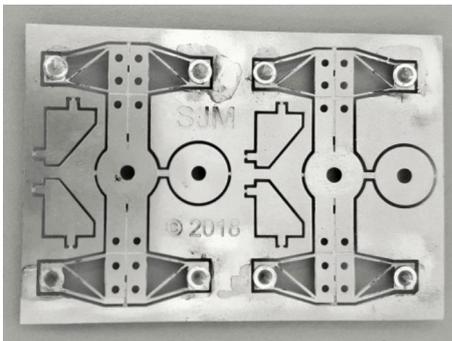


Image 7. Archbar bogie etch showing correct orientation of the waisted bearings. Tabs on the angle brackets can be twisted with pliers to secure the part prior to soldering.

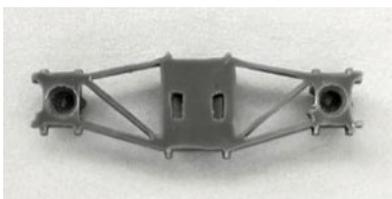


Image 8. Flash has been trimmed from the sideframe casting and holes have been drilled to clear the waisted bearings that protruding from the bogie frame.

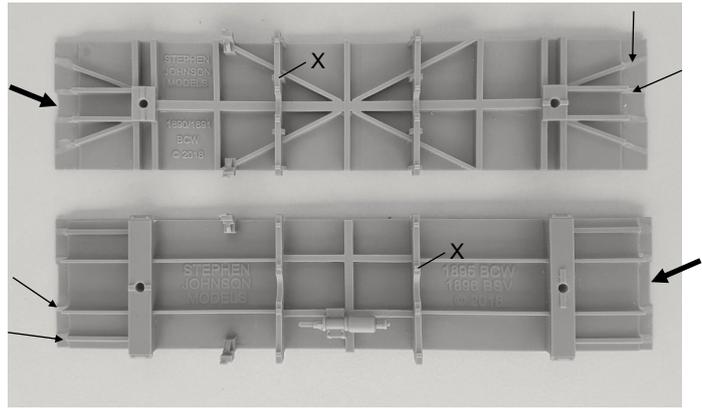


Image 3. Floor modifications required to fit sprung buffers. Thick arrows indicate notch cut in each end to clear part of the spring glued to the wagon end. Lighter arrows indicate areas of the longitudinal beams that have to be trimmed back in each corner. Truss rod supports are marked with an 'X'. The position of the brake cylinder on the 1895 version is also shown.



Image 4. Side view of an 1895 wagon showing the location of the horizontal bars, the brake wheel and locking handle.



Image 5. End view showing location of horizontal bars and brake hose.



Image 6. Adjust the position of the hook so that the turnbuckle on the coupler lines up with the faces of the buffers.



Image 9. Prototype photos showing location of decals