

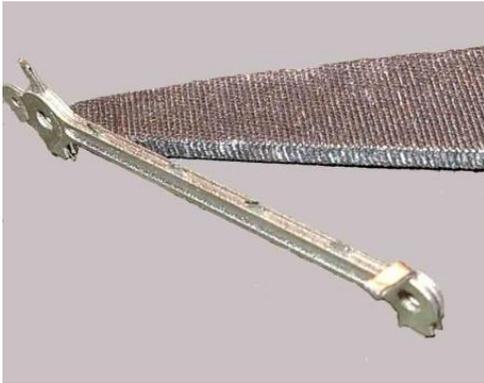
C101 - 4F Replacement Coupling Rods - Fluted

C103 - 4F Replacement Coupling Rods - Plain

The replacement rods were originally designed to go with the Brassmasters' EasiChas for the Bachmann 4F and Alan Gibson or Ultrascale replacement wheelsets. However, they can also be used to replace the original rods on the Bachmann locomotive or with any other model of a 4F.

1. Each side is manufactured from 4 etches and hinged behind the centre crank pin. There are also overlays for the bosses. Most locomotives were fitted with fluted coupling rods, but the last 40 were fitted with plain fish bellied coupling rods. The replacement rods are designed to have to be assembled from two parts, a front and a back. The instructions are common to both types of rod – refer to the etch diagram overleaf for the part numbers.

2. Cut one pair of rods from fret [1 & 2].



3. If using the original Bachmann or Markits wheels find the largest drill that will pass through the crankpin holes; if using with Alan Gibson or Ultrascale wheels, open the crankpin holes using a 1.5 mm drill. Using the same drill, drill perpendicularly into a scrap piece of wood. Leave the drill in the hole in the wood. Tin the mating surfaces of a pair of coupling rods and place over the drill. This holds one end of the rods accurately ready for soldering. It is critical to align the two halves exactly in order to make one rod so take some time tweaking. See photo.

4. Place a little flux along the edge of the rod and apply heat; the solder on the soldering iron will run between the rods and join them. The secret is to apply only a little solder at a time. Solder will fill the “cusp” and give the impression of a solid rod. See photo left. Repeat for the whole length of the rod.

5. Repeat for the for the other front rods [3 & 4] then the assemble 2 sets of rear rods [5 & 6, 7 & 8] in the same way.

6. There are four different boss overlays for the front of the rods and another four for the rear of the rods. On the prototype, the bosses were quite thick. However, thicker bosses can lead to clearance problems in model form, so the rear bosses can be missed off if you don't have the space.

7. Only cut the bosses off the fret as you are going to use them. Working from the front of the locomotive, the half-etched boss overlay [9] is fitted to the front coupling rod boss, the half-etched washer [10] is fitted to the rear. The full-etched centre boss overlay [11] is fitted to the front of the centre boss, the half-etched one [12] to the rear. The full-etched fork overlay [13] is fitted to the front of the forked end of the back rod and the half-etched one [14] to the rear. Finally, the half-etched boss overlay [15] is fitted to the front of the trailing and the half-etched washer [16] to the rear. Using the appropriate bosses, apply each boss holding it in place with a cocktail stick and solder in place using the same technique as for joining the rods. Clean up each rod with files.

8. Carefully blend the bosses into the front face of the rods.

9. The rear length of each rod has a knuckle joint to manufacture. The front and rear rods are joined with a short length of 0.8 mm wire which is pushed through the front and then cropped back on the rear leaving about 0.5 mm proud. See photo.



from

10. To stop solder flooding the joint apply a little oil to the surfaces not to be soldered - this will prevent the solder running into the joint. Keep the rear of the rod clean. Solder can then be quickly applied with a very hot iron the back of the rod to fix the wire in place. Clean off excess solder leaving enough to keep a strong joint. See photo of completed rods.

to



11. Open up the crankpin holes in order that the rod will either rotate on the crankpin screw (if using Bachmann or Markits wheels) or on the crankpin bushes (if using Alan Gibson or Ultrascale wheels). This can be done with a reamer, broach or a fine Swiss file.

12. If using the Bachmann wheels the bush that protrudes from the front of the wheel into which the crankpin screws will need shortening. Carefully file back until there is only a small part left protruding.

13. Fit the rods to the wheels and test run.

The position of the parts on the etch and the part numbers are the same on both the fluted and plain rods.

