

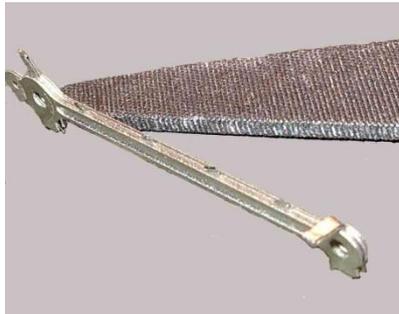
## Brassmasters C101 - 3F Replacement Coupling Rods

The replacement rods were originally designed for the Brassmasters' Bachmann 3F EasiChas and Alan Gibson or Ultrascale replacement wheelsets. However, they can also be used to replace the original rods on the Bachmann loco or with any other model of a 3F.

1. Each side is manufactured from 4 etches and hinged behind the centre crank pin. There are also overlays for the bosses. Some locos are fitted with fluted coupling rods, others are fitted with plain coupling rods. The replacement rods are designed to have to be assembled from two parts, a front and a back. In each case a fluted front should be attached to a non fluted back. When these are fitted to the loco, fit the rods with the flutes to the outside for a fluted rod and flutes to the inside for a non fluted rod.

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

- 3.



If using the original Bachmann 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 bosses that can be fitted to the rods depending on whether the loco has plain or fluted rods, [9] coupling rod boss fluted, [10] forked joint boss fluted, [11] coupling rod boss plain, [12] forked joint boss plain). The coupling rod bosses are fitted to both ends of the leading rod and to the rear end of the trailing rod, the forked joint boss to the front of the trailing rod (spare bosses are provided on the etch). 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. Carefully blend the bosses into the front face of the rods.

7. The remaining bosses can be added to the rear of the rods as, on the prototype, the bosses were quite thick. However, thicker bosses can lead to clearance problems in model form, so add them only if you have the room.

8. 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 is pushed through from the front and then cropped back on the rear leaving about 0.5 mm proud. See photo.



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 to the back of the rod to fix the wire in place. Clean off excess solder leaving enough to keep a strong joint. See photo above of completed rods.



9. Open up the crankpin holes in order that the rod will either rotate on the crankpin screw (if using Bachmann 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.
10. If using the Bachmann wheels the bush that protrudes from the front of the wheel into which the crankpin screw will need shortening. Carefully file back until there is only a small part left protruding.
11. Fit the rods to the wheels and test run.

