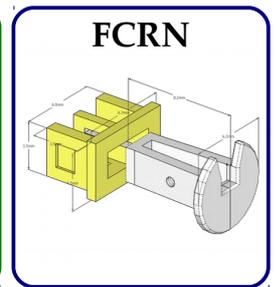
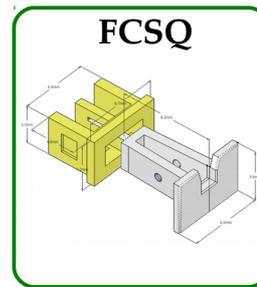


Combined Coupler/Flexible Fitting Instructions



Important Notes

1. Please read these instructions fully before starting work.
2. These are scale model parts not suitable for children, which require careful preparation and setting up to work reliably. It is assumed the modeller will be reasonably skilled in filing, drilling, soldering etc.
3. All parts and castings should be checked **before** starting any work. With the castings some distortion, visible parting lines and blocked holes, are to be expected and can be corrected in the preparation stage. If you feel any parts are not to an acceptable standard then please contact Zamzoodled to discuss a resolution. Zamzoodled cannot accept any responsibility if work has already been started on the parts.
4. These flexible coupler/fittings need to be handled carefully to avoid distortion etc. They are robust enough for service (and capable of hauling long heavy trains) but will not survive rough handling during fitting and operation. Storage should be done in such a way to ensure no pressure is applied to the coupler/fittings.
5. All couplers have a chopper at one end only which means the rolling stock needs to face the same way round. This matches common prototype practice. However, choppers can be raised up out of the way and will couple with another coupler+chopper, i.e. you can have a chopper at both ends, but this will preclude the use of iron tails/electromagnetic operation on such couplings.

Contents and Materials

The couplers usually come in packs of 4 (i.e. enough for 4 locos, wagons etc.) with brass pins for the chopper pivot and soft iron wire to make iron hoops and/or iron tails for electromagnetic operation. These new couplers are a combined coupling body *and* fixing which should be much simpler to prepare than the metal couplers, however accurate positioning is vital.

The following tools and materials will be required:

- Small pliers - smooth faced
- Piercing saw with fine blade, e.g. 4-0 cut
- Needle files – the best you can get
- Fine abrasive paper, e.g. wet & dry 1000 grit or finer
- Small broaches and drills (0.5mm & 0.9mm)
- (for iron tails) Soldering Iron, Solder (220°C tin/silver recommended) and suitable Flux or silver solder and torch if you have appropriate experience
- Metal cleaner (e.g. Cillit Bang) or suchlike
- Metal Black
- Thick Glue (e.g. Bostick All Purpose)

Zamzoodled also supply Height Gauges



Further details on Zamzoodled chopper couplings (including DCC operation) can be found in issues 86, 87 & 102 of the Narrow Gauge and Industrial Railway Modelling Review:

<http://www.narrowgaugeandindustrial.co.uk/>

Videos of these couplers in operation can be seen on the O14 Group website:

<http://www.o14group.org/>

Note that reliable operation can only be achieved by:

1. Accurate fitting both centrally and to a common height – Note that Zamzoodled supply height gauges for this purpose.
2. Ensuring the chopper can rise and fall freely.
3. Planning your layout carefully. Coupling may work on gentle curves, but only if the chopper can reliably engage in the slot. Automated uncoupling will only work reliably on straight track.



Coupling Preparation and Fitting

All Flexible One-Piece Types

Preparation

1. Please check the castings carefully before removing them from the sprue – see **Important Notes on Page 1**
2. Carefully cut the coupling/ fittings from the sprue leaving the mounting lugs intact.
3. Carefully cut the choppers from the sprue at the places marked on the diagram using a piercing saw and fine blade.
4. Carefully correct any distortion – use smooth faced pliers.
5. Clean, smooth and open up the holes as required so the chopper freely rotates on the pivot pin, but without being sloppy .
6. Carefully clean up any parting lines, flash etc. with fine needle files and polish with fine abrasive paper paying attention to the following :

- Ensure the sides and edges of the chopper are polished smooth especially the front face (D). Operation can be helped by forming a slight V towards the tip (as shown right).



Forming the Slot in the Buffer Beam

These fittings require a slot 6mm wide x 3.5mm high in the exact centre of the buffer beam at the correct height. A Zamzoodled height gauge can assist with the marking out of this.

7. Carefully cut a combined mount/ buffer from the sprue
8. Carefully offer up the mount to the prepared slot in the buffer beam to see if:
 - a) it fits
 - b) it is the correct height †
 - c) it is exactly central †(† check with height gauge)

Carefully open up the top or bottom or sides of the slot as required.

9. Note you may want to leave this stage until after painting
10. Carefully fit the assembled coupler into the slot and fix in place with a tiny drop of epoxy at the sides – best added from the back.

Optional for manual magnetic uncoupling

11. Open up the hole in the chopper tip (H) using a drill/broach and insert a tiny length of soft iron wire*. This can either be soldered in place and snipped/ filed flat. Alternatively form the wire into a small loop over the back of the chopper – this is slightly more obvious but makes it easier for the magnet to grip. (* supplied)



Optional for electro-magnetic uncoupling

12. Carefully clean up the small V slot in the chopper base with a piercing saw or fine file ready for soldering. An alternative approach suggested by Julian S. is to cut a fine vertical slot just ahead of the pivot hole. Solder a short length (about 11mm) of soft iron wire* onto the chopper base and form to the the shape shown (silver solder will give a stronger joint but this should only be attempted if you have appropriate experience). Clean up and polish. Ensure the pivot hole is clear and check it is still free to pivot in the coupler slot. (* supplied)



Chopper and tail shown approximately full size

13. Measure the width across the coupling at the pivot location and cut a pin to this length allowing a bit extra for it to protrude slightly. Note the real thing would have had a split/ cotter pin.
14. Now clean the chopper and pin using your favourite cleaning potion and then blacken as required. Note painting is NOT recommended for operational couplings.

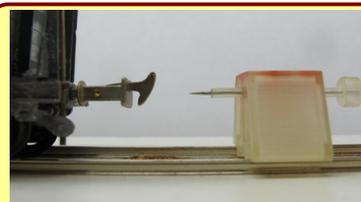
Finishing

15. Now permanently fit the chopper with the pivot pin ensuring can still rise and fall freely and then secure with a tiny blob of glue on the outside ensuring it doesn't bung up the chopper operation.
16. Finally ensure the iron tail is aligned correctly (if using).

The couplers should now be ready for use

Assuming the couplers have been correctly prepared, polished, and fitted centrally at the correct height then they should couple and uncouple reliably at least on straight track, however if you do encounter stiction type problems then try rubbing the chopper and buffer slots with graphite such as a 6B pencil. Please handle and store carefully – see **Important Notes on Page 1**

TIP Make up a reference pair of couplers that reliably couple with each other and always use these to test all other couplers.



A height gauge will provide a common reference to ensure all your couplers are correctly centred and at the right height, which is the key to reliable operation. Zamzoodled gauges have a gauging pin and shaft but can also take a standard coupler (best prepared for the purpose).