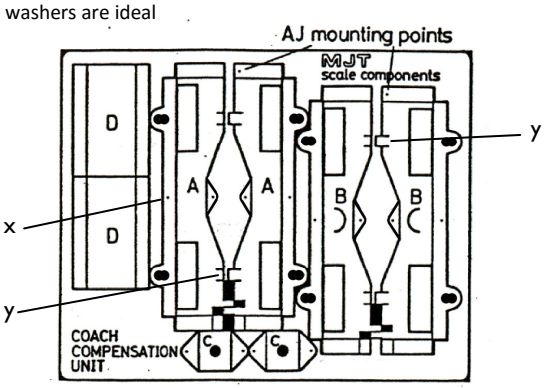
MJT
scale components

2221/3 – 2225/3 - 3mm Scale Torsion Bar CCU Instructions

Please read the instructions and familiarise yourself with the parts and options before bending, gluing or soldering them. Check that the kit contains a brass etch with the main components, a length of torsion wire and two 6mm press studs. To complete the kit, 4 wheelsets (of choice) and 8 brass 'pin point' axle bearings (MJT4009, MJT4010 or similar) are required. Note: some axle bearings may require packing with 2mm spacing washers – Peco 2mm fibre washers are ideal

Typical Etch



The etch carries two pairs of side frames (A and B); B features additional tabs which provide two point support for one end of the vehicle. It is important that the pairs are correctly matched during asembly. Also on the etch are two centre bolsters (C) and two mounting plates (D).

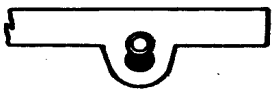
The holes for the torsion wire (8 in all – one of which indicated 'x') may have to be enlarged. To avoid tearing the hole place the un-separated fret on a scrap of wood and progressively open the hole with undersize drills. Test the wire in the hole at each stage as batches can vary slightly in diameter.

ASSEMBLY

1. Separate the components from the etch and clean any remaining tabs. With the exception of the two Alex Jackson mounting points marked on the component diagram open all the small holes in Parts A, B and C to clear the torsion rod – about 0.8mm (No 66). The larger holes in parts A and B will receive the axle bearings and need to be opened to 2mm.
2. Fold both pairs of side frames with all half etched lines on the inside of the folds.
3. The tabs marked 'y' have no half etched fold lines. The longer ones should be bent up to an angle of about 25° while the shorter ones (on the opposite side frame) should be bent down by the same amount. These limit the amount of movement in the assembled unit.
4. Fold the bolsters (C) and mounting plates (D); half etched lines again go on the inside of the fold. The body ride height can be adjusted (slightly) by folding the edges of the mounting plates (D) through less than 90°.
5. Solder the male half of each press stud to the half etched circles in the mounting plates (D). The female halves are soldered to the bolsters (C). If necessary, open the central hole to allow the press stud to seat correctly.
6. The holes for the bearings are oval, allowing the ride height of the CCU to be set according to the chosen cosmetic side. Before attaching the bearing, place (but do not fix) the side on the CCU and to decide if the bearing should be at the top or bottom of the oval – see diagram.

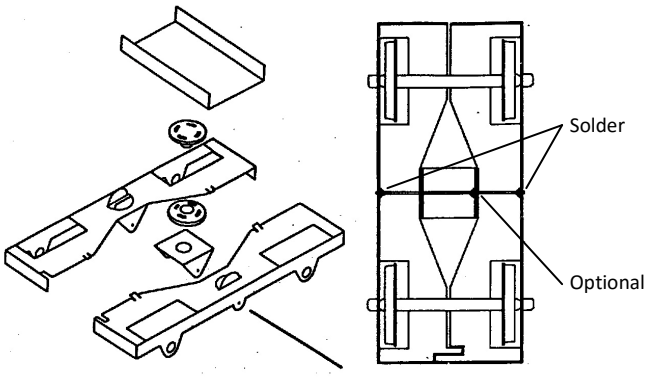
Alternative bearing positions.

Bearing in normal position



Bearing in dropped position

7. Thread the torsion rod through the small hole 'x' in one of the side frames so that a small amount protrudes through the outer face. Solder the torsion rod on the inner face of the side frame – see diagram.
8. Thread on one of the central bolsters (C). Thread the matching side frame of the pair but do not solder at this stage.
9Position the bearings and axles in the appropriate holes (Blu-tack will hold them temporarily) and check that the axles are held with a little end float (a fibre washer may be necessary to achieve this). Hold the two side fames in place with a piece of masking tape. When satisfied with the alignment (it should be possible to stand the CCU upside down with the wheel flanges on a flat surface) and amount of float solder the torsion rod to the second side frame again on the inner face. Remove the masking tape.
10. Repeat the procedure for the second CCU.



Note - While free to rotate on the torsion rod, the centre bolster (C) will be held accurately in place when it is attached to the vehicle body. If uncomfortable with this, the centre bolster can, optionally and with an increase in stiffness, be soldered to the torsion bar as shown taking care to align the top surfaces – lay the assembly upside down on a flat surface – and not to solder the bolster to the side frame – suggest soldering the torsion rod to the bolster before the sides are in place.

FITTING THE UNITS

If the CCUs are to be fitted to a proprietary coach it may be necessary to remove any moulded projection on the vehicle floor around the bogie positions.

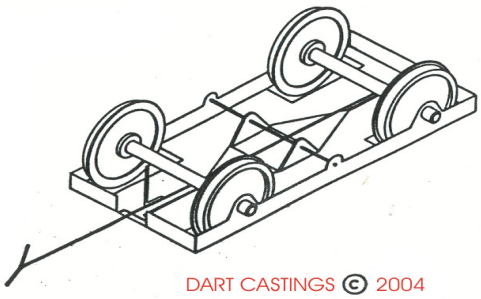
Re-join the press studs to establish if, and how much, packing might be required between the vehicle floor and the mounting plates. Once this has been done separate the press studs and glue the mounting plate to the floor.

When set attach the bogies and test run the coach on a suitable piece of track.

After trimming any surplus torsion rod, cosmetic bogie side frames can be fitted according to choice. Any side frame of corresponding wheelbase can be used; small variations can be accommodated by using waisted bearings (MJT4009). All that is now required is for any rearward projections to be cut off and the back filed flush.

FITTING ALEX JACKSON COUPLINGS

Many modellers like to use Alex Jackson couplings. The CCU has been designed with the use of these couplings in mind. To assemble, proceed as above. To provide clearance for the coupling to move remove the small half etched square from the end of each side frame (parts A and B). At the opposite end there is a there is a mounting hole provided for the shank of the coupling to be soldered to the CCU. The prepared coupling should be 'threaded' between the torsion rod and the face of the central bolster – see diagram.



Dart Castings
17 Hurst Close
Staplehurst Tonbridge
Kent TN12 0BX

www.dartcastings.co.uk