



COMET MODELS components complementing this motion set are:

Frames	LF41	Bogie	LS4
Cylinders	LC5	Crossheads	LS9

## LM41 Motion Set for BR Standard 4MT 4-6-0

This motion set etch is designed to fit our loco frame pack LF41. All folds should be made with the half-etch to the inside, and reinforced with solder. All parts are numbered on the etch and are identified in the instructions by the number in brackets. Where components are handed they are marked on the etch 'L' for left (nearside) and 'R' for right (offside). We recommend that all holes are drilled before you remove them from the fret, with the exception of the coupling and connecting rods which are best drilled after assembly. Drill to 0.85mm for riveted joints.

**NOTE:** Crossheads and pins are NOT supplied in this pack, but are available separately - COMET MODELS pack LS9.

We strongly recommend that the cylinder and motion bracket assemblies are arranged to bolt on to the frames so that everything can be stripped down and re-assembled as required, otherwise you are sure to finish up with an axle nut or whatever hidden behind the motion. A little forethought when positioning the frame spacers for chassis assembly will facilitate this.

If you wish to model the expansion link assembly as per the prototype please refer to section 10. The main instructions provide for a simplified version which should be acceptable to anyone who prefers to avoid fiddly soldering.

### Parts List

- |                            |                                      |
|----------------------------|--------------------------------------|
| 1. Coupling rods           | 11. Eccentric rods                   |
| 2. Coupling rod overlays   | 12. Expansion links                  |
| 3. Connecting rods         | 13. Lifting arms                     |
| 4. Connecting rod overlays | 14. Lifting arm links                |
| 5. Slidebars               | 15. Motion brackets                  |
| 6. Not used                | 16. Offside motion bracket overlays  |
| 7. Union links             | 17. Nearside motion bracket overlays |
| 8. Combination levers      | 18. Trunnion covers                  |
| 9. Valve rods              | 19. Valve rod forks                  |
| 10. Return cranks          | 20. Eccentric rod bearing overlays   |

### Assembly sequence

- Fix the outer coupling rod overlays (2) to the plain inner rods (1) - note the rods are handed. If you wish to articulate the rods, the inner rod should be split at the half-etched marks before assembly.
- Trim the front end of the inner connecting rods (3) by 3mm and fix the outer connecting rod overlays (4) to the plain inner rod. Note the rods are handed.
- If you wish to model the forked end of the valve rod refer to section 10. Using the rivets supplied, assemble the union link (7) to the combination lever (8) and the combination lever to the valve rod (9). Note the combination lever is outside both the union link and the valve rod. Note that the assemblies are handed.
- Fold up the slidebars (5) as per the sketch and check that the crossheads are a good sliding fit, fettling as required. Assemble the connecting rods to the crosshead (pack LS9) using the plain wire in the crosshead pack as the pivot, noting that the connecting rod fits into the fork of the crosshead. Assemble the union link (7) to the outside of the crosshead

drop link - insert the pin from the front, solder it to the inner face of the drop link, then cut and file flush.

- Fit the crosshead assemblies into the slidebars and locate and solder the slidebars to the cylinders. Note the small folded tab at the front of the slidebars should be to the top.
  - Assemble the return crank (10) to the eccentric rod (11) and the eccentric rod to the expansion link (12), noting that the eccentric rod is outside both the return crank and the expansion link. If you wish to add the bearing overlay (20) you will need to make this a soldered joint using a bright plated steel pin (not supplied) inserted from the rear, soldered on the outer face of the eccentric rod, then cut and filed flush. This presents a flush surface onto which to glue the overlay.
  - Fold up the motion bracket (15) as per the sketch and solder the motion bracket overlays (16 & 17) in place. To avoid the possibility of the coupling rods fouling the underside of the motion support bracket a small section should be removed from the vertical cross frame section. To avoid the top of the motion support bracket preventing a good fit of the loco body it may be necessary to file a small amount off the bottom edge of the bracket to enable it to sit lower in the frames.
  - To ensure accurate alignment, feed 0.7mm wire through the expansion link holes and pack out the overlays by 2mm. (Use pieces of scrap from the fret if you can't find any suitable material). The expansion link and valve rod assemblies can now be fitted to the motion bracket using 0.7mm wire and paper washers to prevent soldering everything together. Position the nearside lifting arms (13) over the pivot hole, passing between the motion bracket and motion bracket overlay and feed 0.7mm wire through.
- NOTE:** Refer to the sketch for the nearside valve gear, but remember to transpose from left to right when assembling the offside gear.
- Assemble the motion bracket and cylinders to the frames at the same time feeding the front of the valve rods into the holes in the rear of the valve chests. Make sure the cylinder and motion assemblies are bolted securely. Fit the offside lifting arms and lifting arm links, noting that the links are behind the valve rods. Feed 0.7mm wire through the front holes in the lifting arms and the lifting arm links (14). These can now be soldered in position, noting that the lifting arms pass each side of the expansion link and the lifting arm link. Place the connecting rod over the driven crankpin and fix the return crank outside this, remembering to allow a few degrees of forward lead on the return crank. Fit the trunnion covers (18) to the motion bracket.
  - If you wish to model the forked end of the valve rod bend the ends of the valve rod fork (19) through 180° with the half-etched line to the outside of the bend. Feed the valve rod and valve rod fork onto a length of 0.7mm wire and solder together as per the sketch. You should now find that the two forks of the valve rod fit each side of the expansion link, and assembly can proceed as outlined above. Separate lifting arm links (14) are also provided should you wish to represent the model in forward gear.

