



## LM5 Motion Set for Stanier LMS 8F 2-8-0

COMET MODELS components complementing this motion set are:

Frames	LF5	Pony truck	LS3
Cylinders	LC1	Crosshead	LS8

This motion set etch is designed to fit our loco frame pack LF5. It is not recommended as a replacement for just the coupling rods and motion on the Hornby-Dublo/Wrenn models, as their wheel spacing is not to scale.

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 parts 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 LS8.

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.

### Parts List

1A & 1B	Coupling rods	9.	Return crank
2A & 2B	Connecting rods	10.	Eccentric rod
3.	Slide bar	11.	Expansion link
4.	Slide bar support bracket	12.	Lifting arm
5.	Drop link	13.	Motion bracket
6.	Union link	14.	Motion bracket overlay
7.	Combination lever	15.	Expansion link trunnion cover
8.	Valve rod		

### Assembly sequence

1. Fix the outer coupling rod overlays (1B) to the plain inner rods (1A) - 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.
2. Fix the outer connecting rod overlays (2B) to the plain inner rods (2A). Note the rods are handed.
3. Assemble the connecting rods (2) and drop links (5) to the crossheads (pack LS8). Insert the pin from the rear, solder it to the outer face of the drop link, then cut and file it flush (see sketch 4). Note that the pin locates in the hole in the half-etched section of the drop link.
4. Assemble the slide bars (3) to the cylinder rear covers as per sketch 3 and file as necessary to achieve an easy sliding fit. Note the slide bars are handed.
5. Using the rivets supplied, assemble the drop link (5) to the union link (6), the union link to the combination lever (7) and the combination lever to the valve rod (8). Note that the union link is outside the drop link and the combination lever is outside both the union link and the valve rod. Note that the assemblies are handed.
6. Fold up the motion bracket (13) as per sketch 2 and fix the motion bracket overlays (14) in place, ensuring the top edge is flush with the top surface of the motion bracket. Now bolt this assembly and the cylinders to the frames, ensuring that the motion bracket aligns with the underside of the footplate. Solder the slide bar support brackets (4) together back-to-back in pairs, with the relief detail to the outside. Now solder the brackets to the front of the motion bracket, making sure that the slide bar support brackets fit snugly against the slide bars, but be sure not to fix them together. Remove the

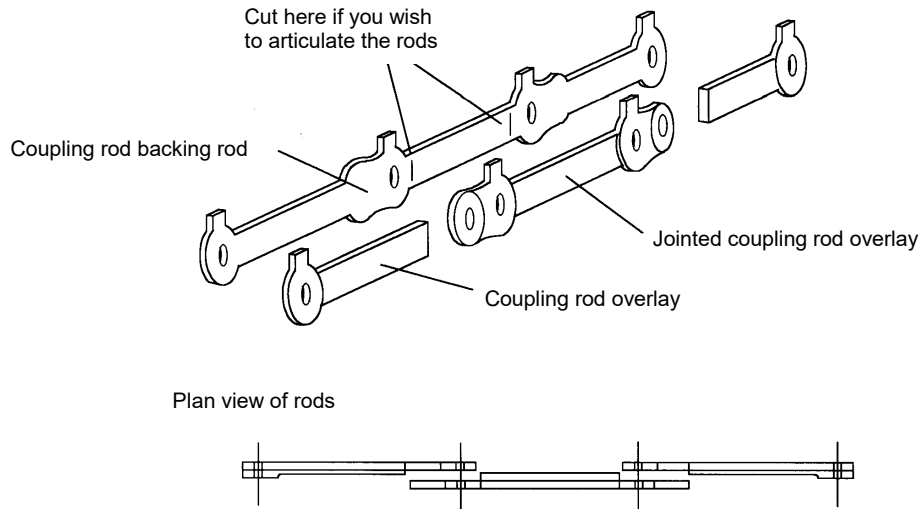
motion bracket.

7. Assemble the return crank (9) to the eccentric rod (10), noting that the eccentric rod is outside the return crank. The expansion link (11) is supplied as a fold-up unit, but if you prefer to simplify the assembly separate the outer link. If you are using the expansion link as supplied, fit the eccentric rod between the inner and outer links and fix with 0.9mm wire soldered to both links, using paper washers to ensure freedom of movement. Alternatively, if using only the outer link rivet to the outside of the eccentric rod. Note that these items are handed (see sketch 5).

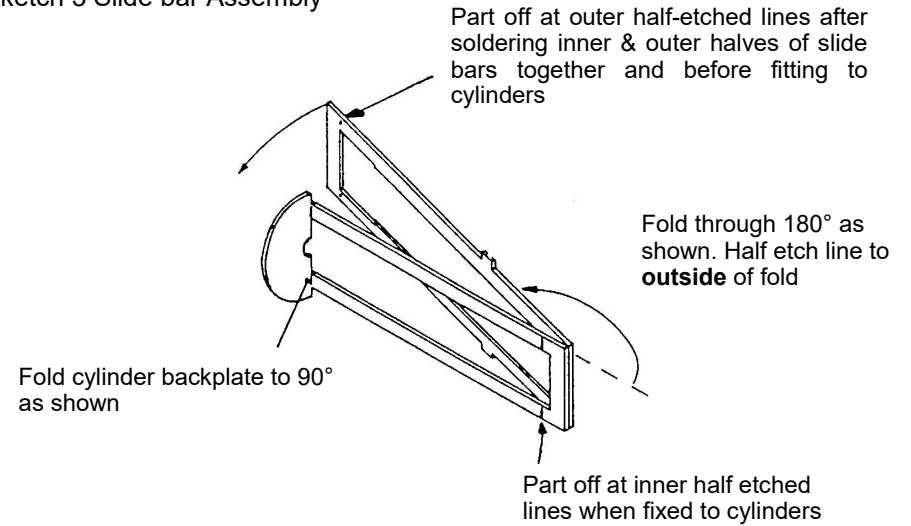
**NOTE:** Refer to the sketch for the nearside valve gear, but remember to transpose from left to right when assembling the offside gear.

8. Feed the end of the valve rod through the hole in the slide bar support bracket and the centre of the expansion link, align this with the pivot holes and feed 0.7mm wire through, soldering in place using paper washers. Feed 0.7mm wire through the rear fixing hole in the valve rod and the weighshaft bracket, at the same time locating the inner and outer lifting arms (12). Also feed 0.7mm wire through the front holes in the lifting arms and the slot in the valve rod then solder and file flush all projections. Repeat for the other side.
9. Reassemble the motion bracket to the frames, simultaneously feeding the crossheads into the slide bars. You may need to trim the end of the valve rod so that it just fits into the hole in the valve chest. Make sure the motion and cylinder assemblies are bolted securely. Place the connecting rod over the driven crankpin and fix the return crank outside this allowing a few degrees forward lead on the return crank. Finally, add the expansion link trunnion covers (15) to the motion bracket overlays.

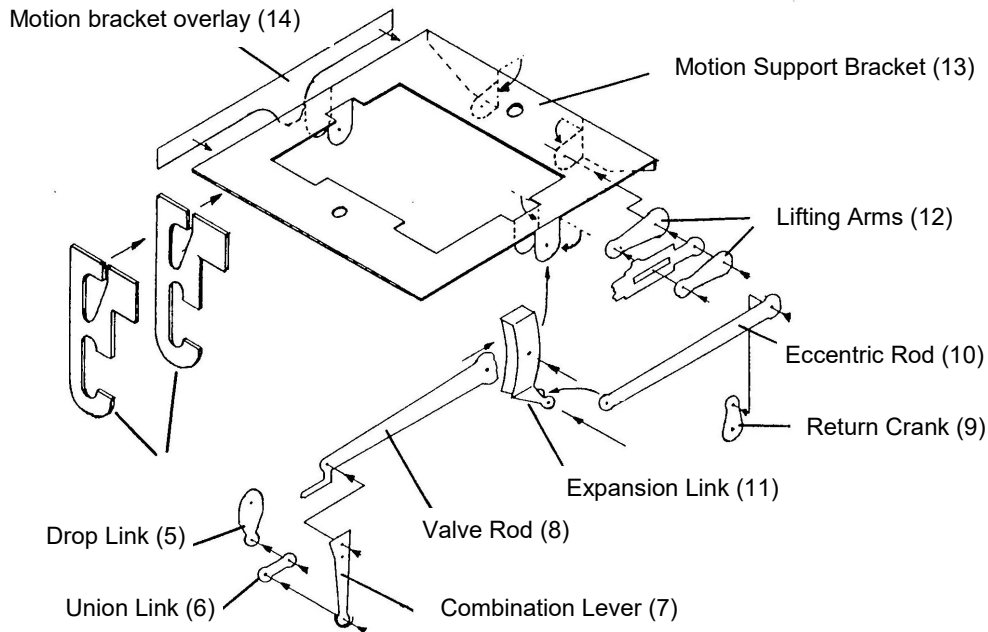
### Sketch 1 Coupling Rod Assembly



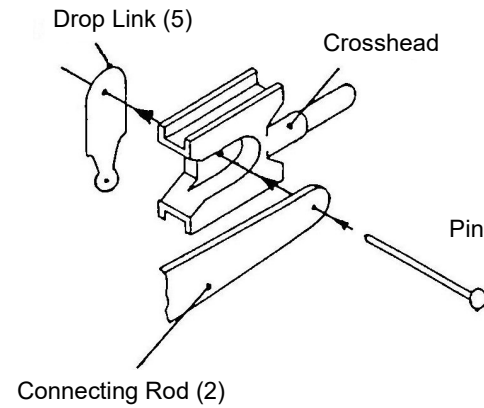
### Sketch 3 Slide bar Assembly



### Sketch 2 Motion Bracket/ Valve Gear Assembly



### Sketch 4 Crosshead assembly (viewed from back)



### Sketch 5 Expansion Link

