COMET MODELS

LF19 Frames for GWR 2800/2884 2-8-0s

Components required to construct a complete chassis:

Motion set	LM19	Cylinders	LC2
Pony truck	LS2	Crossheads	LS8

8 off Markits 4'7" drivers (WH202)
4 axles, 8 crankpins and washers
1 set 12mm 10 spoke bogie wheels (WH31)
Gearbox GB5/20 and Drive Extender
Mashima MH1624 motor

This etch contains sideframes, brake shoes, balance weights and brake pull rods to produce a basic chassis of the correct scale dimensions and appearance which can be used as a substitute for a kit or RTR chassis. Cylinders, motion, crossheads and pony truck to complete the chassis are all available from our range - see the panel above. The coupling rods in this pack should be used, NOT the ones in pack LM19. A separate fret of 00 spacers is included, which can be exchanged for EM (LS10) or P4 (LS60) by returning them to us in a stamped, self-addressed envelope.

As supplied the frames are suitable for the new Hornby model, which has the correct wheel spacing.

We recommend our gearbox GB5/20 and Drive Extender with a Mashima MH1624 motor for this model, and can supply the first two as well as Markits driving and pony wheels.

Please note that all bends should be made with the half-etched lines to the inside and reinforced with a fillet of solder.

Assembly Instructions

1. The frames may be assembled rigid, or with sprung axles using our hornblocks and springs (code LS55). If you wish to spring the chassis cut through the spring hangers using a piercing saw and remove them together with the centre portion of etch within the hornway. The sides of the hornways are etched at 5.85mm approx. so as to ensure that any slight variations in the width of the machined grooves in the hornblocks do not result in any one of them having a loose fit within the hornway. Each hornway must be carefully dressed with a file to achieve a good sliding fit to each hornblock, which should then be marked up or placed into a labelled bag to ensure it is assembled only into the hornway to which it has been precisely matched. Take time and care over this stage, removing material slowly and from each face equally. The hornblock must drop in freely under gravity but must not show any fore and aft play which might cause the coupling rods to bind. This might sound daunting, but the patient builder will be rewarded with a chassis having superior ride, track holding and traction compared to an unsprung chassis.

2. For rigid axle assembly, carefully open out the axle bearing holes in the frames until the bearings are a close fit, ensuring the bearing flanges fit snugly against the frames. This is best done using a five sided broach. If you are using our chassis jigs (see below), DO NOT solder the bearings in place at this stage. Open out the holes for the brake cross-shafts to 0.75mm.

3. Select the appropriate frame spacers - the size and position of them will depend on the siting of the body fixings and your preferred motor/gearbox and pick-up arrangements. Our own preferences are, where possible, for a tongue and slot fixing at the front buffer beam and a single bolt fixing under the cab, together with wiper pick-ups mounted below the chassis. A suitable layout of spacers is shown (sketch 1) to suit this and our gearbox GB5 and Drive Extender, and a Mashima MH1624 motor.

4. If you are springing the chassis drill out the holes at each side of the hornways and those in the separate spring etches to 0.5mm as shown in sketch 4. The frame spacers fold to right angles on the half-etched line. Solder your chosen ones to one of the frames, then assemble by clamping the other side frame to the first using the wheelsets to check alignment before soldering the second side frame. This crucial stage of the assembly can be achieved more easily and with greater accuracy by using our frame assembly jigs (code LS16 for 00, LS17 for EM and LS61 for P4). Full instructions are provided with them. If you are springing the chassis using our hornblocks please note that you will need a set of four turnings (code LS59) which are intended to locate in the hornway during this stage of assembly.

5. For a sprung chassis insert the spring and hornblock, ensuring that they are placed into their correct hornways only. Note that the grooves in the hornblock are not on the centre line. This allows you to choose a greater or lesser amount of sideplay on each axle. Use 0.45mm wire to locate the spring detail and solder in place using a minimum of flux. This captures the hornblock and the protruding centre shackle should ensure that the bottom of the hornblock is slightly above the bottom edge of the chassis giving approximately 1.0mm of movement only. Do not be tempted to file too much material from the top of the centre shackle. Greater travel should not be necessary and there is then a risk that the spring could become dislodged if there is too much downward travel.

6. If you wish to incorporate the representation of a simplified inside motion, solder lengths of 0.7mm wire through the first, second and fourth brake hanger holes in the frames, or through all holes if not. Solder the brake overlays to the brake rear etches (sketch 5) then thread on and solder in place. Alignment of them is made easier if something of suitable thickness is used to space out the brake shoe from the frame, with a wheelset fitted to ensure correct spacing relative to the wheel treads.

7. If fitting the inside motion, drill holes A, B, C & D to 0.7mm. Fit a 0.7mm wire cross shaft through the hole above the second axle's brake hanger holes, trapping the inside motion etches through hole B. Solder the cross shaft to the frames (but not to the inside motion) and file it flush on the outside of the frames. Thread 0.7mm wire through hole D and solder the motion frets to the wire 5mm apart. Trim the wire so that it fits between the frames. Now thread the brake hanger for the third axle through the frames and hole C and solder it in place. Now solder the motion frets to the cross shaft through hole B. Thread wire through hole A, solder in place, and then cut it between the motion frets and file smooth on the inside. Trim the protruding wire so that it will fit between the mouldings on the body. Fit the brake shoes for the third pair of drivers.

8. Lengths of 0.7mm wire are next threaded through the bottom brake hanger holes on one side of the chassis, through both sets of brake pull rods (ensuring that they are the correct way round) and then through the second set of brake hangers. Solder the wire to the brake hangers, then slide the pull rods outwards to line up with the inner edges of the frames and solder them to the wire.

9. Finally, solder on M2.0 fixing nuts for cylinders, pony truck and pick-ups as required.

The chassis can now be washed to remove any flux residues, but before painting we suggest that you fit the cylinders, motion bracket and wheels and check the fit of the body. You may find some slight filing is required to obtain a perfect fit, and if you have fitted inside motion you will need to trim the rear boiler support plate. If you are springing the frames take care to avoid getting any paint on the hornblocks or hornways.

Our preference is for wiper pick-ups made from 26swg phosphor bronze wire (sketch 6) as offered in our product code LS23. The wire is soldered to PCB strip which is bolted to a frame spacer. We recommend that, if possible, you arrange the pick-up to be "bolt on" since this allows for easy removal and adjustment of the wire wipers.

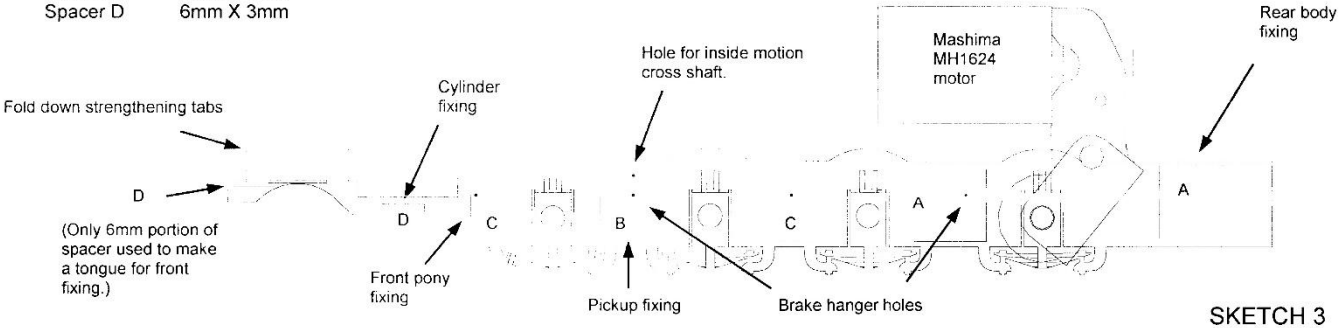
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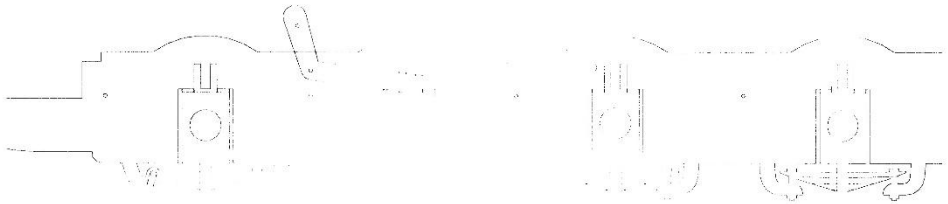
Our apologies for the poor quality of these sketches!

SKETCH 1 - GB5 and Drive Extender

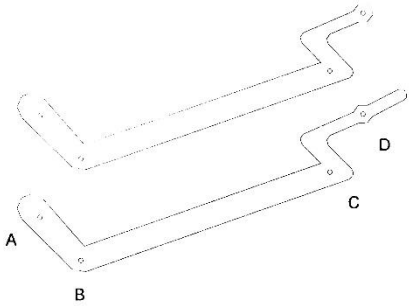
Spacer A	10mm x 10mm
Spacer B	10mm X 6mm
Spacer C	6mm X 6mm
Spacer D	6mm X 3mm



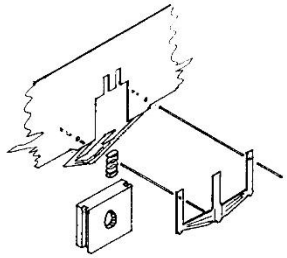
SKETCH 2 - Inside motion layout



SKETCH 3 - Inside motion components

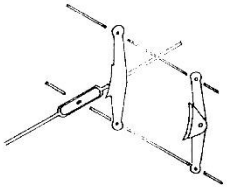


SKETCH 4



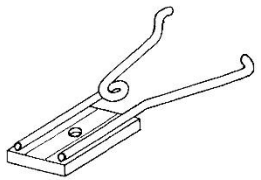
Fitting hornblocks

SKETCH 5



Fitting brake overlays to rear etches

SKETCH 6



Pickup suggestion