

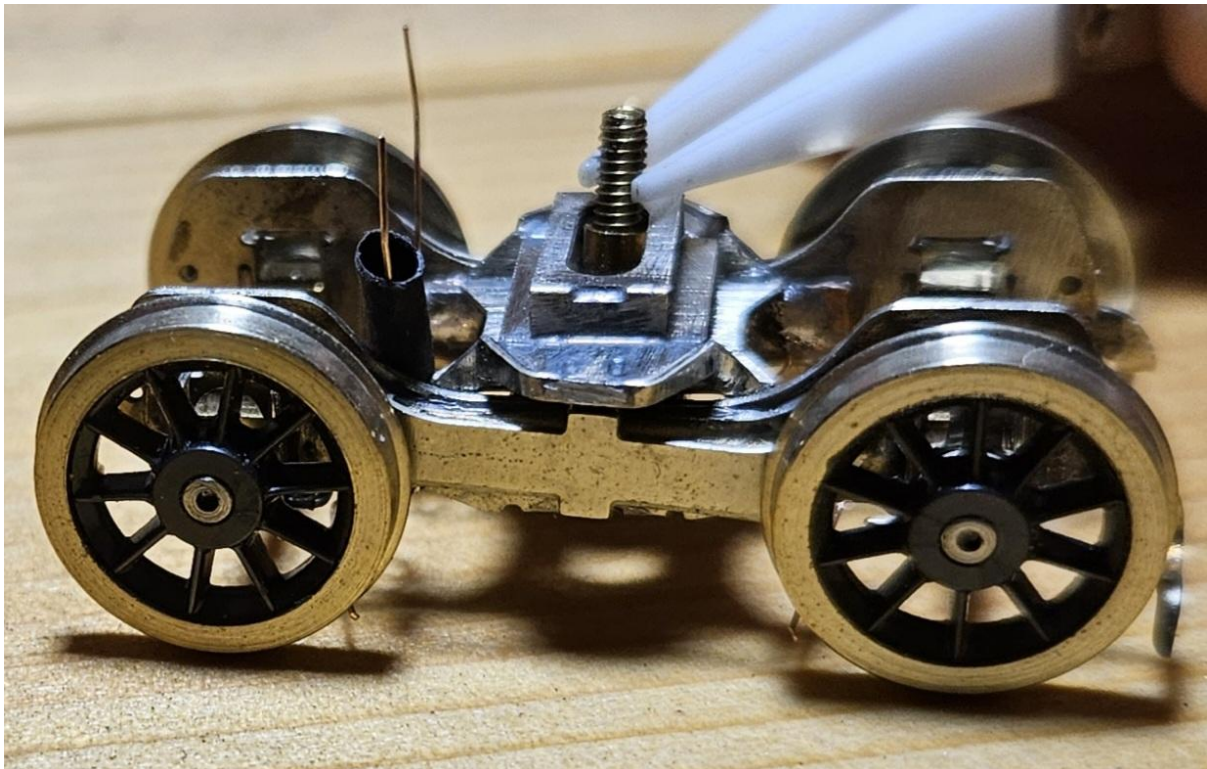
LMS 6'6" Loco Trailing Bogie Instructions

Introduction

This set of instructions covers Rumney Models kit X.29. This is designed to build into fully sprung LMS 6'6" trailing bogie.

The design of this bogie followed on from the design Justin developed for the Midland 1P 0-4-4T chassis kit. Initially this larger bogie was targeted at the LMS 2P 0-4-4T, however it is equally applicable to the Stanier & Fairburn 2-6-4T tanks. The Fowler design looks the same aside from an extra external block visible on the middle of the frame.

LMS front bogies were also generally 6'6" (some 6'3" bogies were in use, and 6'3" was used on the BR standards) – however the front bogies were of a heavier construction, so while this bogie would functionally work as a front bogie it would need alterations to suit cosmetically. If anyone has a go, please share the results!



Springing

A bit of trial and error here as it is very much going to depend on the loco weight and its weight distribution. The bogie was set up for 0.5mm deflection using 10 thou wire given a weight on the bogie of about 70g. I suggest starting with 10thou steel wire. The spring beams should coincide with the shadow ones attached to the frames given a 0.5mm deflection.

Notes

Read through the instructions first and familiarise yourself with the components. Drawings and photographs taken during the construction of the test etches are included.

Etches

Check all holes before removing parts from the fret. The drawing process for etching, if you use a CAD program as I do, is extremely accurate but the actual etching process itself not an exact science. If the fret is slightly over etched, then there is no problem but if they are under etched the holes will need enlarging. I find that this is easiest to do before removing parts from the fret. The hole sizes will be noted at the appropriate points. Use an appropriate drill or a tapered reamer.

Remove one part at a time from the fret.

The instructions will assume that tags connecting parts to the fret will be cleaned up on removal of a part unless it is specified specifically in the instructions not to.

Very important:

All fold lines are through 90° with the fold line on the inside unless stated otherwise.

This means that when I say fold something up the folds should be made through 90° with the fold line on the inside. If the fold is to be done in any other way I will say so.

Everyone has their own soldering methods. I now use an Antex 50W temperature controlled soldering iron with predominantly 145° solder and La-Co paste flux.

Materials List

You will need a few items to be able to build the bogie.

4 x High Level Standard 2mm Hornblocks

0.31mm and 0.4mm wire. Cambrian Models are good source for these.

M2 bolt plus 2.5mmx2mm tube for bolt sleeve

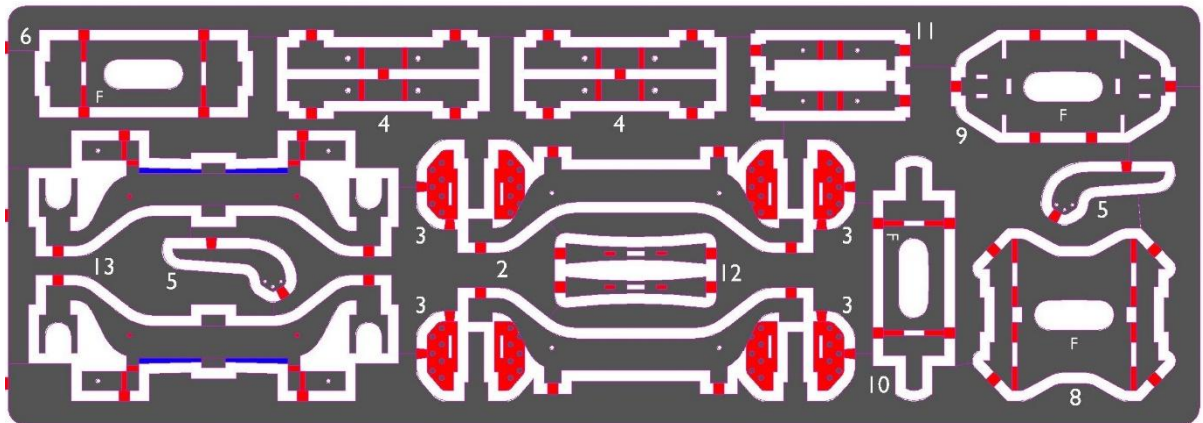
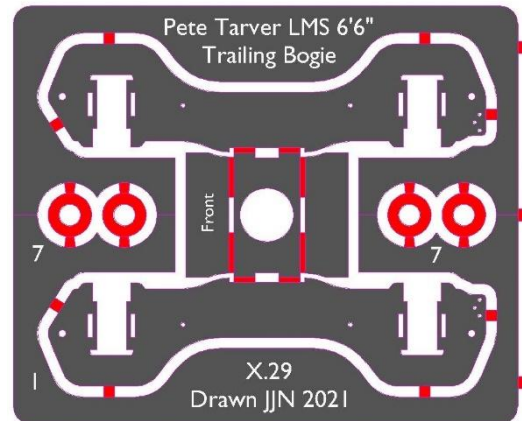
Wheels

Wheels on the prototype were 3'3½". The bogie has been set up for Ultrascale wheels but you can easily use Gibson's which are a slightly different diameter. If you use the Gibson's, you will not need the axle washers and may need a 5 thou shim between the bogie and the frames.

Parts List

Parts are numbered in suggested build order. The etch layout is shown below.

- 1 - Frames
- 2 - Shadow beam and inner hornguide detail
- 3 - Outer hornguide detail
- 4 - Hornguides
- 5 - Guard irons
- 6 - Frames spacer
- 7 - Axle washers for Ultrascale Wheels
- 8 - Bolster base
- 9 - Spring plank
- 10 - Bolster top
- 11 - Spring pillars
- 12 - Spring plank detail
- 13 - Sprung Beams

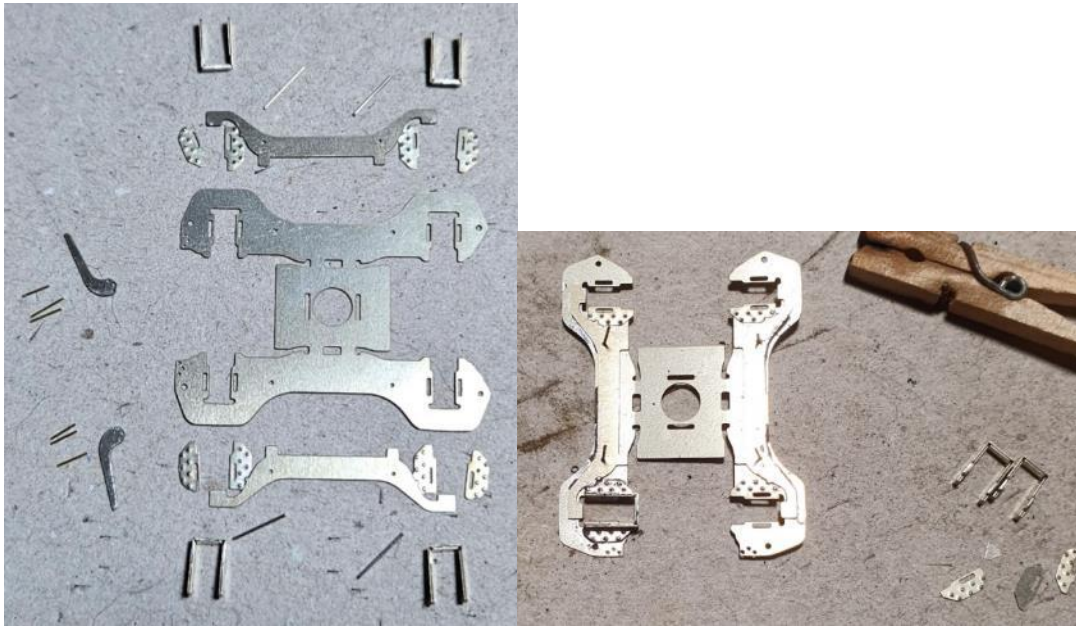


Construction Notes

Several items are marked F for front (and the frames Front). These need to all go the same way. Front is towards the front of the loco...

Attach shadow beams (2), hornguide detail (3), hornguides (4) and guard irons (5) to the frames (1) whilst the frames are flat. They all go on the outside (the side with no fold lines on). Use 0.4mm wire for the shadow beams and 0.31mm wire for the guard irons.

Also at this stage, before folding the frames up, it is worth reading page 5 regarding pickups as you may wish to drill 4 extra holes which will be easier while the frames are still flat.



At this point I would fit the frame spacer (6) before cleaning up – it can be easier to clean up the above while it is flat, however it is easy to accidentally fold the frame up, or worse the wrong way, while cleaning. The frame spacer folds up and drops into slots in the frames. Only solder at these tabs and solder up the frames at the same time.



Cut hornguides at bottom. Axleboxes can be retained by 0.4mm wire through the hornguides.

Axleboxes go into the hornguides the 'normal' way around. Pair up the axleboxes to a guide and clean them all up to slide nicely.

Fold up bolster base (8), tab and slot spring plank (9) in place on top then fold up bolster top(10) and insert through slots in sides. Fold up spring pillars (11) into a C and fit into slots on spring plank. Spring pillars are flat on the outside.



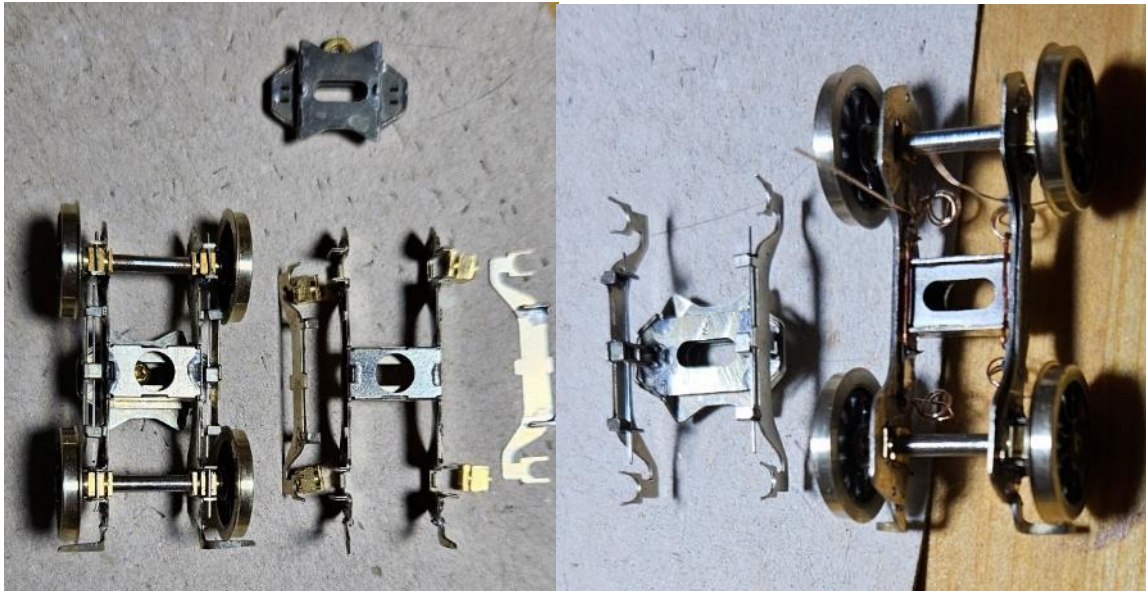
Bend and fit spring plank detail (12) to outer edges of spring plank. Make tab and slot good.



Fold up sprung beams and solder together.

Spring wire needs to be ~21mm long. And passes through the sprung beam and spring pillar. It might be a fiddle to fit but it should be retained by the inner hornguides once in.

Probably the best way to assemble is to fit the sprung beams to the bolster and then drop that over the frames. The sprung beam sits in the slots.



Cut 2.5/2mm sleeve tube 5.5mm long, and use over M2 bolt into M2 nut. The nut can be fixed to the frame, the slot in the bogie should give enough movement. I add side control as below.

From here it is far more down to personal preference, however as with the 1P chassis I added pickups, which transfer power to the main chassis via wire in tubes which also act as side control. This also results in a sub assembly that can easily be removed for painting & maintenance.

Note that any copper clad additions on the frames need to sit below the level of the central spacer, both to allow the spacer to spring as it should and help prevent shorting. Also note that any wires between the axles need to be underhung, not sitting above the frame as in the above right hand photo, for the same reason of affecting the springing.

The link wire as fitted below is pretty much out of sight, but a more elegant solution would be to drill 4 holes in the central spacer and pass it through – making sure these are close to the edge so as not to interfere with the fixing screw/tube. As noted at the beginning, these holes would be easier to drill prior to folding up the frames.





Pete Tarver & Justin Newitt September 2023