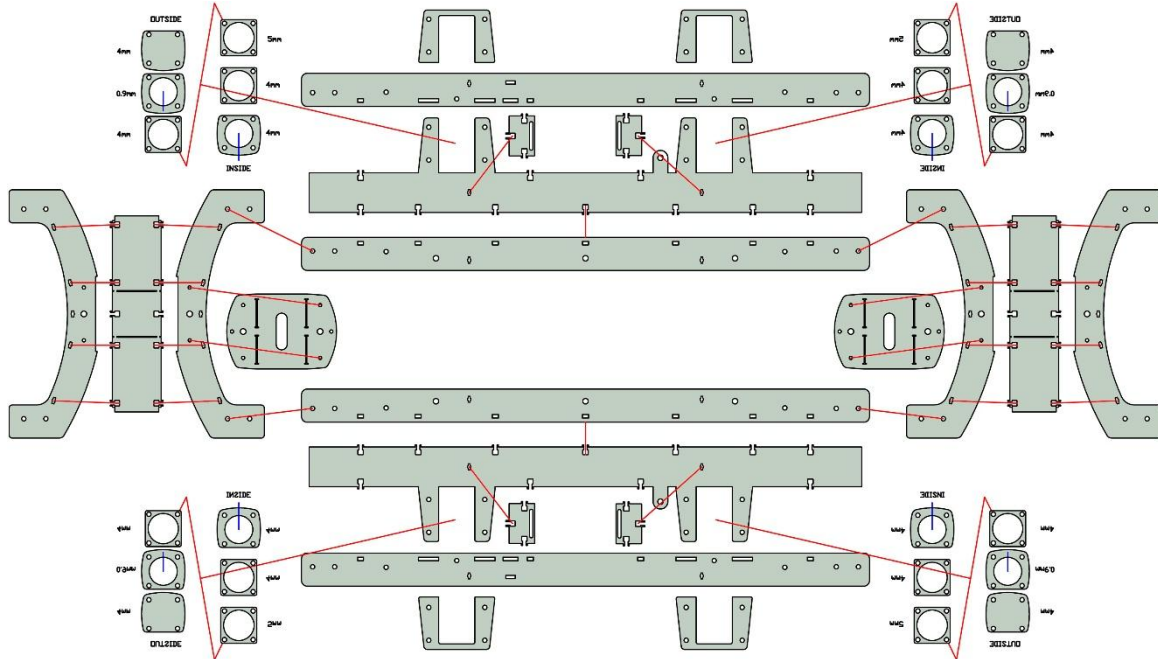


Bolted wagon frame build instructions

Colin Edmondson 2026

Equipment. The frame is bolted together. From personal experience I recommend a battery drill with a clutch to avoid overtightening and a selection of allen key and socket bits, it speeds the job up a lot. Use a file or grinder to remove all the tiny tabs left by the laser cutting process and clean the black scale off the edges to aid painting later. The following photos show the build of a 7 1/4" tipper frame, yours is put together in exactly the same way.

First the frame



First lay out all the frame parts provided with the kit.



Assemble two side frames with M6 x 16 button head screws, form B (thin) washers and nyloc nuts. Note the two gussets positioned one third of the way in from each end, which hold the sections accurately to form the 'channel' frame.



< Fold the end so that it fits in the slots



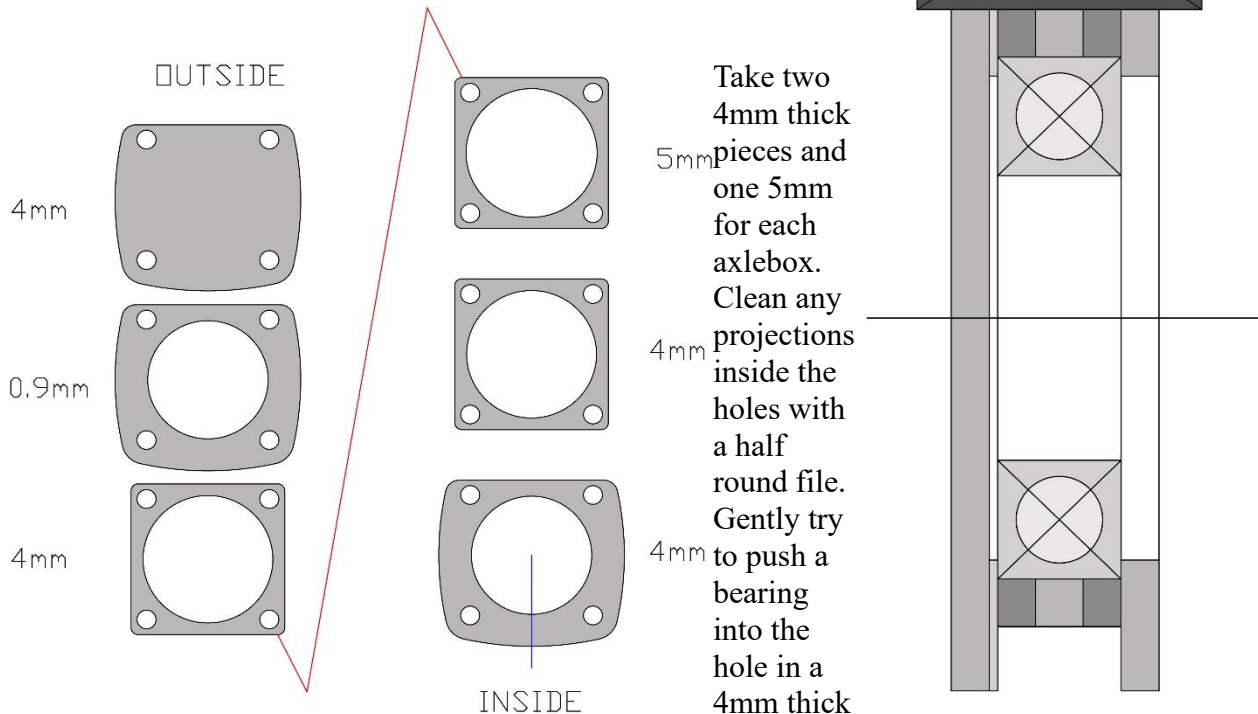
> Bolt together with M6 x 16 button head screws, form A (thin) washers and nyloc nuts.



< Fold the coupling plates and fit with more of the button head screws. Grip the coupling plate in the vice and bend the first side over with a block of wood and a big hammer, then grip the 'L' shape in the vice with a big block of wood for packing and whallop over the other side until it just fits nicely. Screw it in place (you may want to prime the metal first).

Axleboxes

The following photos are of a 7 1/4" axlebox, which only has two bearing housing pieces, yours has three as shown in the diagram..



piece using the vice as seen in the first photo below, doing your best to keep it square, turning it frequently and doing it a bit at a time. If you find it enters the hole easily with only gentle pressure then press it home, if not tap it out (tap only against the outer race) and ease the hole with a half round file and try again. If the fit is too tight it will compress the outer race of the bearing which can lead to failure. Add the 5mm thick piece, which has a slightly larger clearance hole. Then press a second 4mm piece on to the bearing, closing up the gap and finally setting the bearing housing on top of the vice jaw and tapping it with a hammer to get all the slices perfectly aligned. Now try the assembly for size in the slot in the horn guides. Touch with the file or grinder if required, then assemble as shown, with a thin shim and the plain cover one side and the cover with a hole on the other, using M6 x 30 hex screws and nyloc nuts, not plain as shown here. Make sure that you align the parts so that the tops of all four pieces are level, this is the surface the rubber spring sits on. Repeat for the other three assemblies.

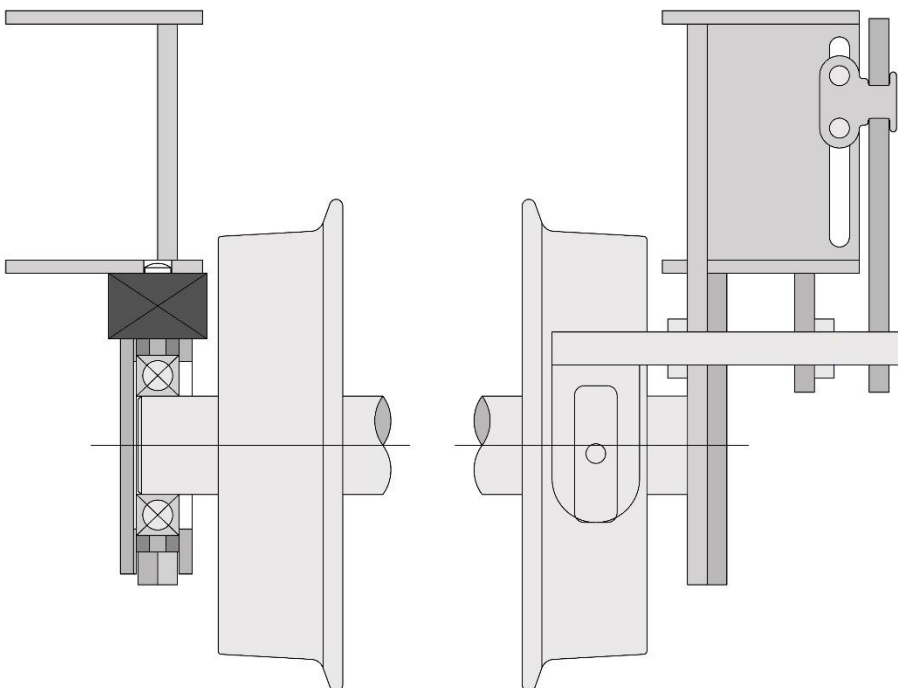




> The thread on the rubber mount needs to be cut down to 4mm long or less before assembly, place 3 thick washers over it as a guide and use a cutting disc on the angle grinder or a hacksaw.

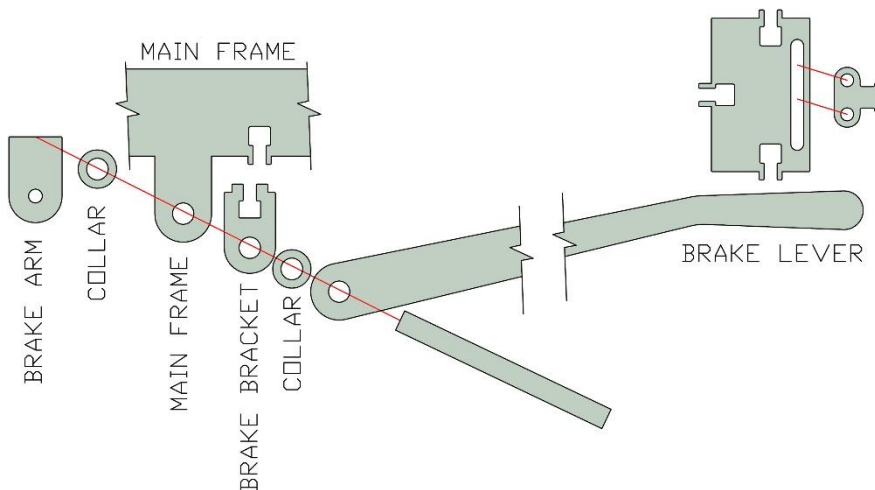


< Dry run of the axlebox and horns assembly in the frame, after painting you will assemble it with the axle and wheels in place. Clearances are tight and using nyloc nuts fitted with washers may foul the front face of the wheel.



Sections through the axlebox on the left and the pivot for the brake handle on the right

The handbrake is only fitted on one side, and is only there to stop the wagon rolling away when you are trying to unload it. Fit two, or turn the wagon if it is better on the other side.



The brake lever assembly

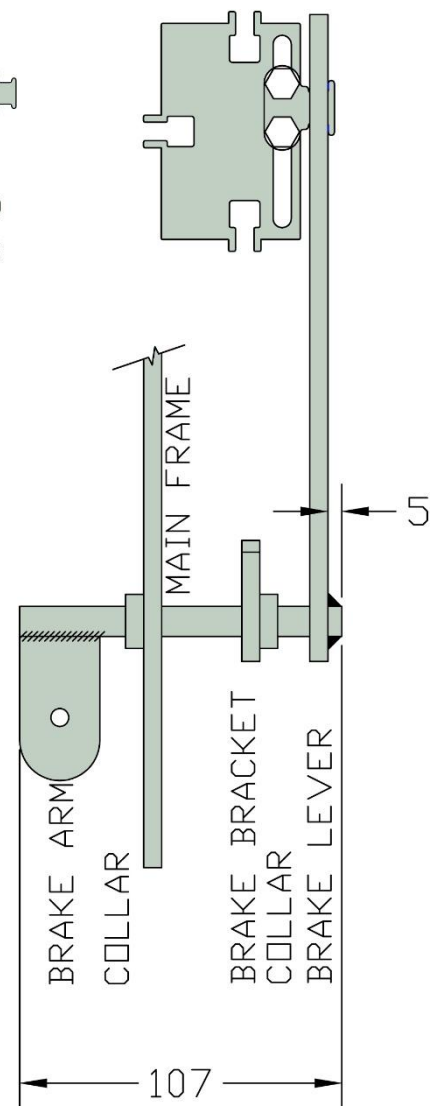
Cut a piece of 10mm steel round a minimum 107mm long
Weld the brake arm to it as shown on the right (both sides)
and fit a bicycle brake block through the hole, facing towards the wheel.

Fit the brake bracket with an M6 x 16 screw.

Push a collar onto the shaft and push the shaft through the holes in the frame and bracket, position the brake block on the centre of the wheel tread and mark the position of the collar, then tack weld it in place.

Slide on the second collar and the brake handle. Screw the 'T' shaped brake stop near the top of the slot in the frame gusset and rest the brake handle on top of it. Tack weld the second collar and fully weld the brake handle, about 5mm of the shaft sticks out to make the welding easier.

To put the brake on lift the handle, spring it outwards and lock it beneath the 'T' shaped lug. The lug can be slid down to increase the pressure, or a washer put between the brake block and the brake arm as it wears down.



Coupling pins

I cut a couple of pieces of 10mm black mild steel rod to 200mm long, and welded a washer 50mm from one end. You could also drill through and insert a roll pin. With the ends rounded off they make cheap but serviceable pins. You could also use M10 x 150 bolts.



The axles.

The axle ends need to be an easy fit into the axle bearings, if necessary spin them in the lathe or grip in the vice and use emery cloth to slightly reduce the size. (First put a cloth over the lathe bed to catch the dust created, as it makes good grinding paste and shouldn't be allowed to settle on the oiled surfaces). When fitting the axles into the axleboxes use a good dollop of grease, the axle ends will contact the insides of the axlebox covers at times and grease is essential.

Painting

As a personal preference I like to see the axle and wheels painted rather than left to go rusty, but leave the end portion that will go into the bearing clear of paint.

I normally clean the metal with panel wipe, acid etch prime, assemble sub assemblies then prime the screws and top coat in two pack. If powder coating check with the firm if they are okay with the nyloc nuts, as the plastic can melt when parts are baked.

Shopping list, search Ebay for most parts.

Bearings 30 x 55 x 13 2RS,

4 off



Springs - vibration isolators 30 dia x 20 thick 4 off
with male M8 thread one side. Search for 'vibration mounts'.

(These come from China, delivery times of a few weeks are not uncommon)
They may be in stock at CMD



Bicycle brake block, old fashioned type.

1 off



M6 x 16 button head screws, 60 off with washers and nyloc nuts

M6 x 25 hex head screws, 16 off with washers and nyloc nuts (axleboxes).

M8 x 20 hex head screws, 16 off with washers and nyloc nuts