

End tipping and runner wagons

These wagons are based on, but not identical to, those used at the "Pike Brothers Tramway", also known as the "Furzebrook Railway". Exact replicas are difficult as photographic evidence centred mainly on the locos. Measurements taken by visitors give conflicting details and there were several different versions, probably made locally and not to a constant design.

The whole reason behind the wagons is that the clay dug up by the company had to be taken to a weathering bed. It was tipped, spread out and left for a few months before being collected and processed. Apparently, exposing clay to all weathers washes the silica out of it. I presume that this is a good thing, I know nothing about clay and wouldn't recognise silica if it hit me on the head.

The tippers had to have an overhang at the tipping end so they didn't cover themselves in clay. Because of this they can only couple together the same way around and, although a loco could couple to the non tipping end, it needed to be spaced out by several feet at the tipping end, hence the use of a runner wagon.

The runners stayed permanently coupled to the rear of the locos and were a handy place for the driver's bike, lunchbox, tools and anyone needing a lift. They probably started life as a regular wagon but were extended at one end to reach under the overhang of the tipper.

The Kit

Both kits are similar in construction so separate instructions are only given where required. If a part is to be folded double, the etched line is on the outside of the fold, if the fold is 90°, the etched line is on the inside. File off the tags around the edges of the parts but do not file off the etch cusp unless that particular edge shows after construction. Over filing of the edges is not necessary and can be detrimental to the fit.

I was thinking of putting an etched wood grain effect on the main chassis parts, but this always looks false so I left them plain. Painted wood grain is so much more convincing.

Chassis

Fold all the chassis sections, 5 for the runner, 6 for the tipper, into square U shapes. This is best done by scoring the etched fold line with the back of a knife tip two or three times, folding each to around 60° then gently squeezing with pliers to get the final shape. Try them all for fit according to the sketches then solder together. Solder one end to one side, then add the other end and centre beam at the same time. Add the second side and the top beam for the tipper only and four layers of the extra end beam on the runner only. Make sure that the result is square all round. Fold and solder the ends of the parts that have them as you go. A little filing may help to get the ends to fit better. The tipper also has reinforcing strips around the ends. Push out the rivets, bend to shape and solder in place.

Fold the bearing holders double and bend up the tags, leaving them at an angle as shown. These tags hold the bearing plate in place before soldering. Drop the bearing plates into place, ensuring that the folded tabs face outwards, check the sketches and solder in place. Fit the bearings with the flanges facing inwards but do not solder. Try the wheels for fit, if they are too loose, fit a washer on each bearing behind the flange and try again. Solder the bearings in place when happy. The outer end of the bearings can be filed back by at least 1mm so that they don't foul the cosmetic axle boxes.

Axleboxes - tipper

Fit the axlebox guides centrally over the bearings about 1mm below the top edge of the chassis. Fold the axlebox backing double, slot into the bottom of the guides and solder in place. Push out the rivets on the axlebox body, fold double in a zigzag, position according to the sketch and solder in place.

Axleboxes - runner

Push out the rivets in the axlebox guides and solder in place centrally over the bearings with the top of the guides 0.5mm below the top edge of the chassis. Fold the axlebox backing to the shape in the sketch, fit into the guide and solder in place. Fold the axlebox body double and solder on top, lining up the top edge with the backing. Fold the springs double and slide into place behind the axlebox and solder where they touch the underside of the chassis.

Brake gear – tipper

Drill the rivet dimples in the horizontal part of the V hangers 0.5mm, push out the other two rivets in each and fit to the holes in the chassis with 0.5mm wire.

Brake gear - runner

Mark a line 26mm from the short end of the chassis which should be central between the axles. Push out the rivets on the V hangers and fit with their centre on this line and the top edges flush with the chassis top.

Brake gear – both

Fold the centre section of the brake assembly double, add the second layer and solder together. You can add short lengths of 0.5mm wire through all the small holes and the extra brake shoe layer if you wish, but it is not really necessary. Open out the holes in the centre of these assemblies and the V hangers, pass a wire through the hangers and brakes ensuring that they come out on the correct side, position the brakes flush with the outside face of the wheels and solder in place.

Make up the brake catch mechanism as shown in the sketches and solder to the chassis in line with the end chassis beam. Add the lever which will need cranking a little to clear the axleboxes. Make sure it passes through the catch mechanism.

Couplings

Couplings will prove to be entertaining on these wagons as there is nowhere to hide the bulky draught boxes of Kadees, although the chassis beams are about the right height if you want to try some surgery to get Kadees in, and access for manual coupling is limited. There are two original style coupling hooks included in each kit, just push out the rivets, bend to shape, solder centrally on top of the chassis beams and use 4mm scale chain as a coupling, one link at the non tipping end to a runner and four between tippers. Fold the hook around the chain at the tipping end to attach it permanently and drape the chain over the axle, it would be very tiresome to have to keep uncoupling under the tipper body. Users of other types of coupling will have to work out their own solution.

I am going to use chain links between the tippers and chopper couplings on the end tippers and runner wagon. This will leave the nasty chain link couplings untouched as long as they stay coupled, but enable shunting with the runner staying permanently at the rear of the loco.

Runner body

This is made entirely from wood so sand all rough edges before assembly. The floor is ply which is pre-cut to size, it may need light sanding to square it up. The lime sections supplied are best cut slightly over length and glued in place with PVA which sets enough to handle in about 10 minutes.

Cut and fit the floor supports, then the sides and allow to set. Cut the ends to fit, glue and leave to set. Cut off the excess wood with a knife and clean up with sand paper. If you intend to use wood stain, remove all traces of excess glue as you go or the stain will not take. Attach to the chassis with superglue.

Tipper body

Fold the body sections double and solder. Assemble by interlocking the corners and fit the floor between the sides. Add the strapping as you wish. If building more than one it is fun to make them all a little different. The body length can also be cut down a little and some wagons had angled corners at the tipping end. If you wish you can also add a capping strip to the top edge or even greedy boards, all these things are feasible.

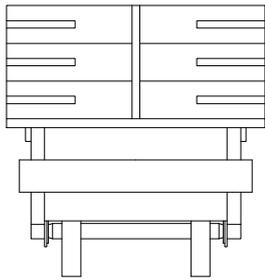
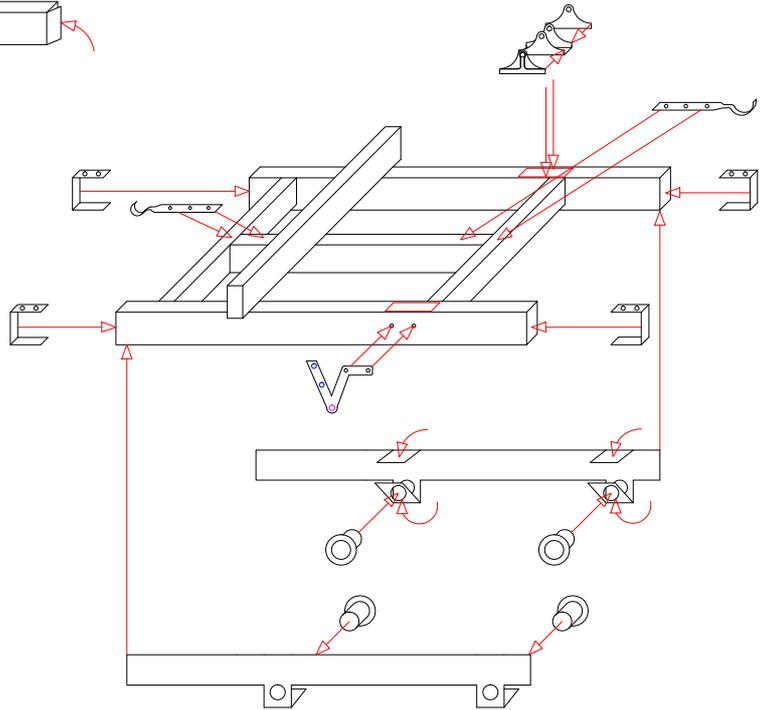
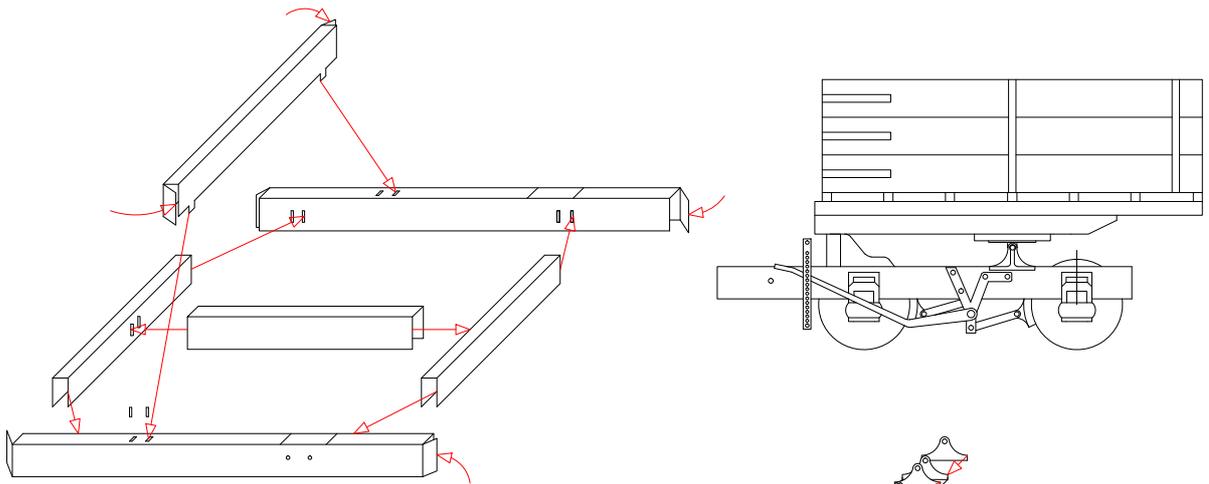
Make up the floor supports and tipping timbers from the sections supplied using PVA to assemble. The tipping timbers should be at the same spacing as the chassis and the ends need to be angled to clear the chassis when tipped. Fold the pivots to shape and add the outer layers. Solder into the recesses on the top of the chassis sides. Two split pins are supplied which need re-sizing before use. Put the pins on a piece of 0.5mm wire and grip with pliers to squeeze the eye smaller. They don't have to fit exactly. Measure the body to find the centre and mark it, it should be 25mm from either end unless you cut the body down at all. Cut the split pins to about 5mm long and drill an undersize hole in the wood on this line at the spacing of the pivots and fit the pins without glue.

Put the body on the chassis with a piece of 0.5mm wire through the pivots and check how the body is sitting. The height can be adjusted by moving the pins in or out of their holes. Lock in place with a spot of superglue when happy. Tippers rarely sat at the same level as the wood rotted with age and things settled so try doing them all at slightly different heights for a bit of variety.

Kit contents

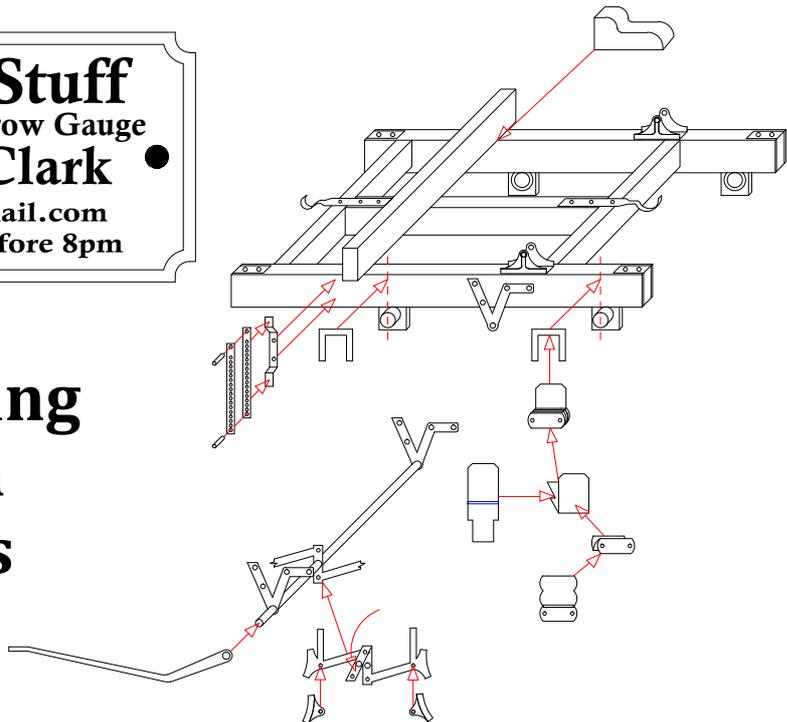
I x wagon etch (runner) or
1 x wagon etch (tipper) + 1 x body etch (tipper)
2 x wheel sets
4 x pin point bearings
Assorted wire
Lime wood in various sections
Plywood floor (runner)

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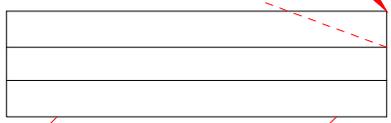
Locos n Stuff
 Industrial and Narrow Gauge
 • **by Mark Clark** •
 borsig1958@gmail.com
 01634 575081 before 8pm

**End tipping
 wagon
 chassis**



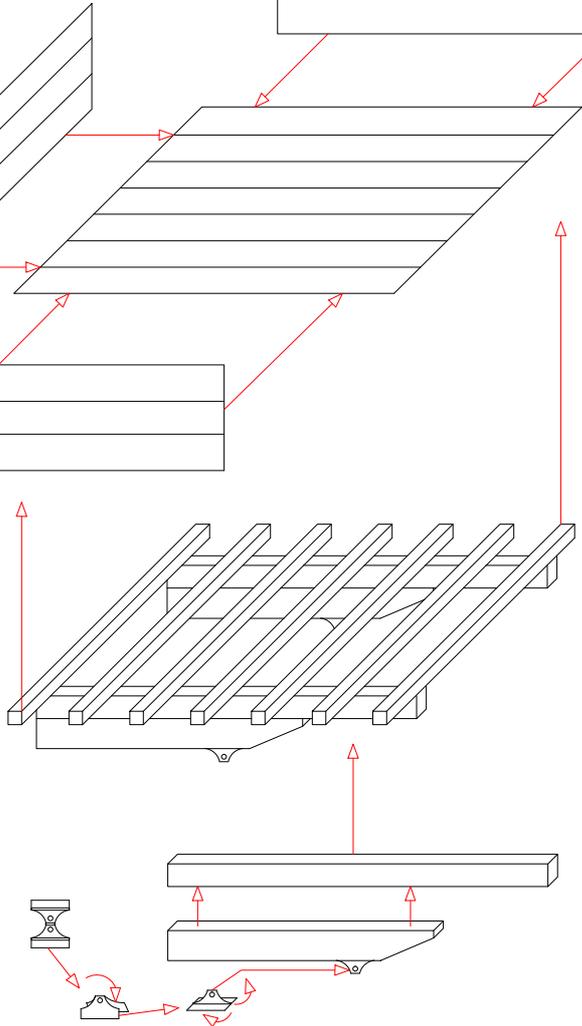
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Angled corners
 are optional

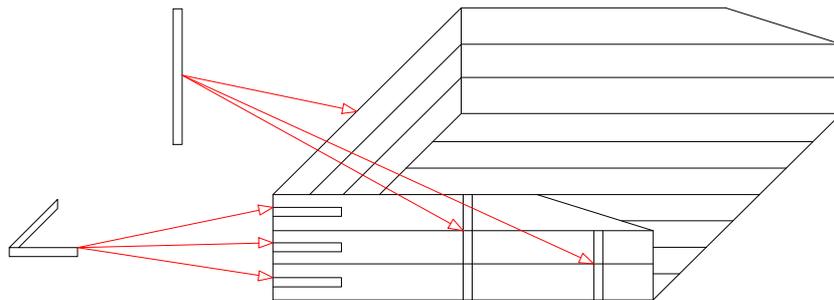


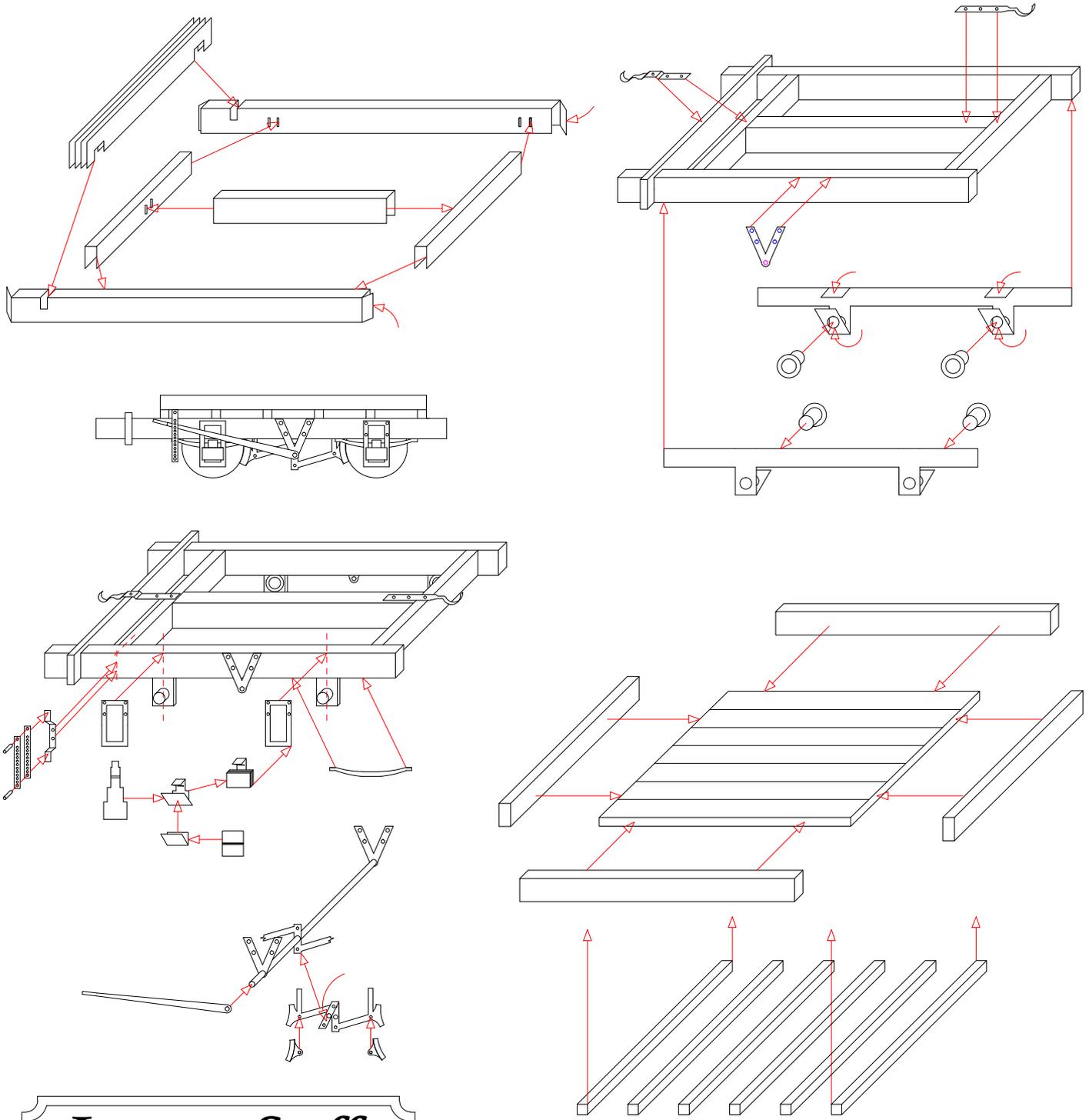
**End tipping
 wagon body**

Glue wood to wood
 with PVA, wood to
 metal with superglue



Add strapping
 as required

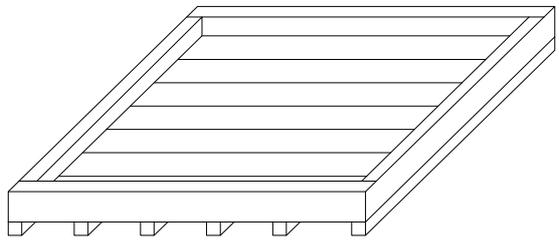


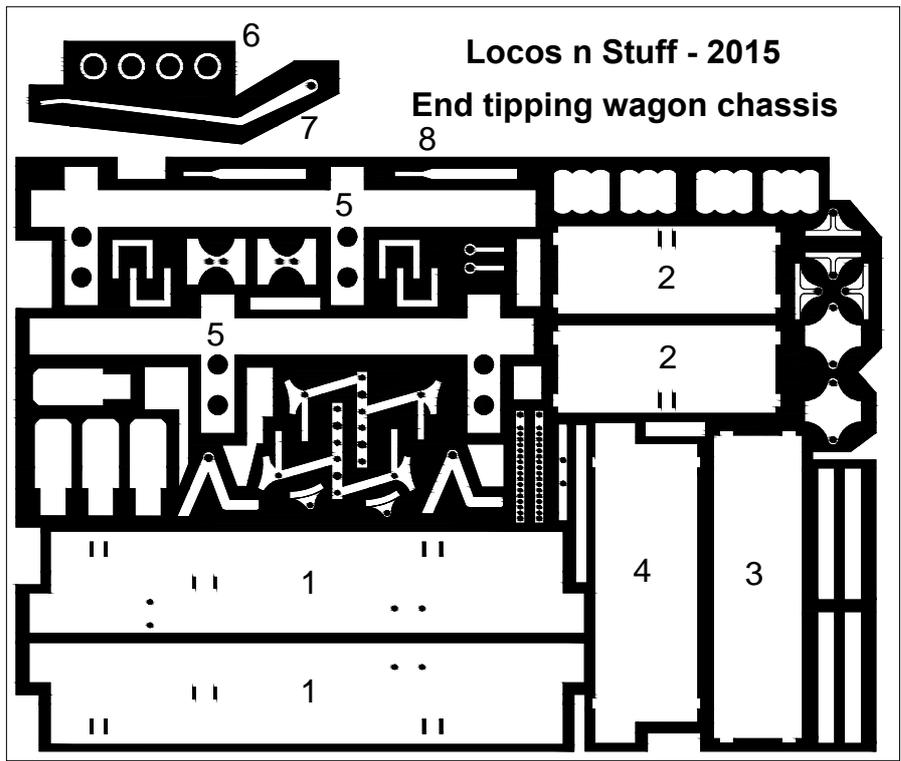


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Glue all joints
 with PVA

**Runner wagon
 for end tippers**





- | | |
|-----------------------|---------------------|
| 1 - Side beams | 5 - Bearing holders |
| 2 - end beams | 6 - Bearing washers |
| 3 - Centre beam | 7 - Brake lever |
| 4 - Top beam (tipper) | 8 - Coupling hooks |

