

# Tool Wagon Assembly Instructions

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## Adhesives

Wood to wood joints are best done with a PVA wood glue but a good quality, slow acting (beware of “instant grab”) cyanoacrylate “super glue” can be used if preferred.

Acrylic to printed nylon are best done with a specialist solvent like EMA plasticweld, however an epoxy resin or super glue can also be used.

Epoxy resin or super glue can be used for the Acrylic to metal and acrylic to wood joints.

## Painting Acrylic Parts

The acrylic parts have a grey protective film which will need peeling off before assembly. You may be happy to leave these parts with their glossy black finish but if you wish to paint them it is suggested you do this before assembly, especially before fitting the axle box and wheels to the underframe. You can either spray or brush paint these parts but some sort of primer is recommended. You may also find it is a good idea to lightly sand the high gloss finish of the acrylic parts with emery board or “wet and dry” paper to provide a better “key” for the primer.

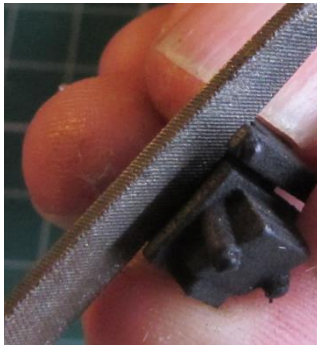
It is important not to get paint onto the horn guide surfaces of the underframe as the axle block fit is quite tight. If you are spraying we suggest you mask the guides with masking tape before painting

## Under-frame Preparation

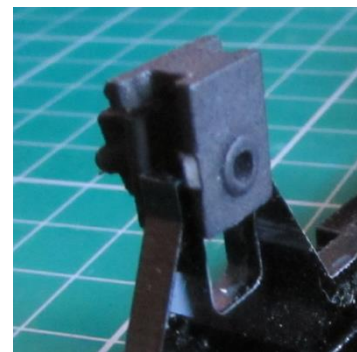
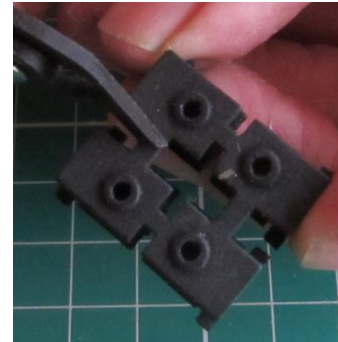
This kit utilises a pre-assembled underframe made from laser cut acrylic parts and 3D printed axle boxes and springs.

## Axle Box Preparation

Cut off the 4 sprues connecting the axle boxes together and trim their remains off the edges of the horn block.



The internal surfaces of the horn block may still have traces of “printing” powder on them that will need cleaning off. With a small flat needle file, lightly file the 3 internal faces (that slide into the horn guide) to remove any of this residue.

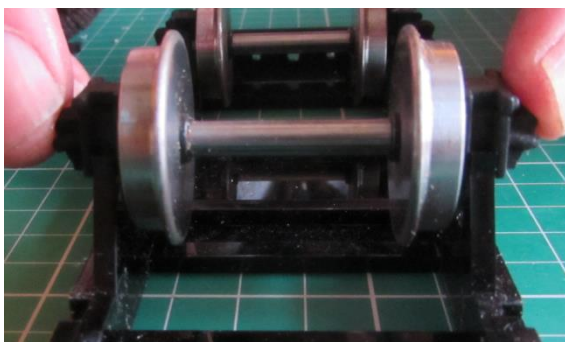


Test fit each axle box into its horn guide. It should easily slide down (without being sloppy) about 4 millimetres until it reaches the “locating pips” on the horn guide surface. If it is too stiff, lightly file the axle boxes surfaces a little more.

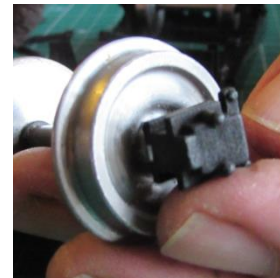
## Wheel Fitting

First test fit the wheel journals into the axle boxes. They should be a “running fit”.

Place the underframe (with the horn guides pointing up) flat on a table.



Place an axle box on each end of the axle and gently push the axle box about 4 mm into the horn guides (see the above point about making sure they are an easy fit). Ensure that the “keeper strips” are upper most e.g. away from the wagon floor. The wheels should spin easily. If there is any stiffness, check that the journal holes

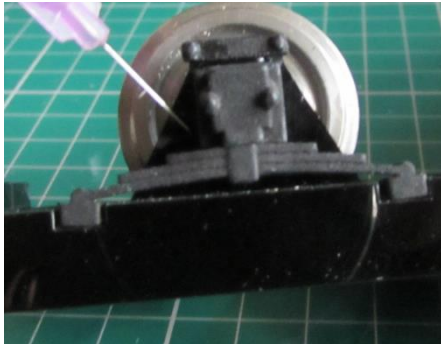


are free from any printing powder or debris.

Now push down gently on **both** axle boxes together (so you keep the axle parallel to the wagon floor as you push down); push the boxes down so they are both fully seated in their horn guides. You should feel a slight click as the “locating pips” lock into place. If necessary a couple of drops of super glue applied to the gap between horn guide and axle block will keep the block in place but be careful **not** to get any glue near the wheel journal. Repeat for the other wheel set.

## Springs

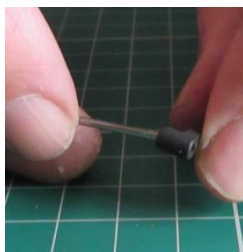
Cut the four leaf springs from their sprues and ensure there is no printing powder residue on their back faces, (a couple of strokes with an emery board or file will fix this).



Now place a leaf spring in position between the top of the axle box and the bottom of the sole bar. Fix in place with a couple of drops of glue. Do not get any glue near the wheel journals. Repeat for the other 3 springs.

## Brake Lever

Cut the sprue connecting the brake handle and ratchet and trim off the remains. Be careful to leave

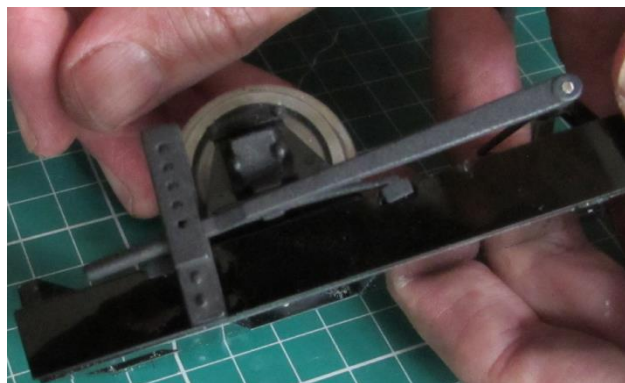


the little round locating pin on the back of the ratchet. This will locate in a tiny hole in the chassis.



Push the pivot end of the arm onto the short steel rod and the handle end through the middle of the ratchet frame.

Thread the steel rod through the holes of the 2 "V" hangers and glue the top of the ratchet into a locating hole in the sole bar. Secure the brake arm in place with a couple of drops of glue where the rod passes through the "V" hangers.



## Corner Plate Preparation

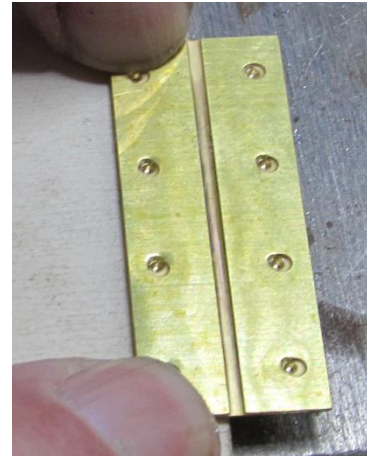
This kit includes etched brass corner plates which have had their rivets heads “raised” for you but you still need to bend them.

Cut the four plates from their fret with tin snips or failing that some stout scissors and file the rough edges smooth.

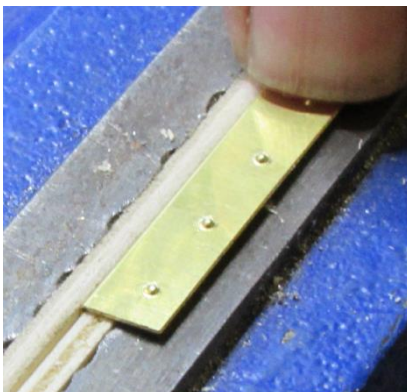
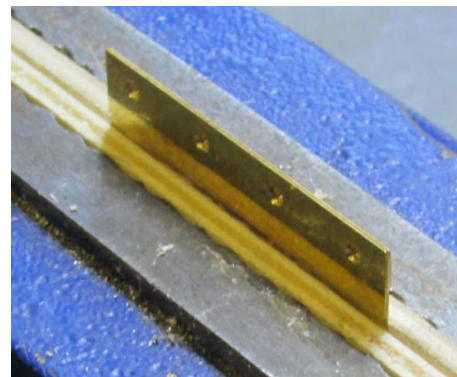


Find two pieces of scrap plywood (e.g. from the body fret) and place a corner plate along one edge with its “fold line” aligned with the plywood’s edge.

Now place the other piece of ply on top of the plate so that it is sandwiched between the two pieces of ply.



Next place the sandwich in a vice so that the fold line is level with the top of the jaws and tighten. (The scrap ply will protect the raised rivet heads).



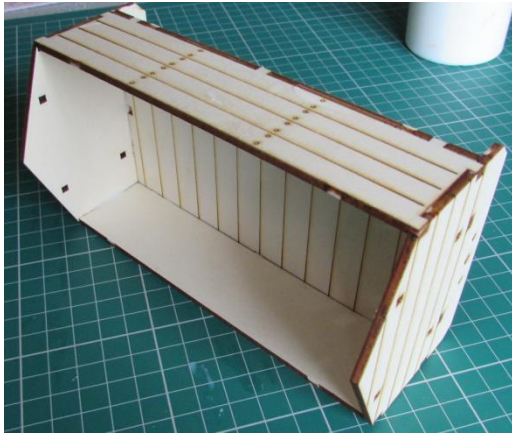
Now bend it over with your fingers. Push the exposed plate towards the fold line so that the raised rivet heads are on the outside of the corner.

Repeat for the other three plates.

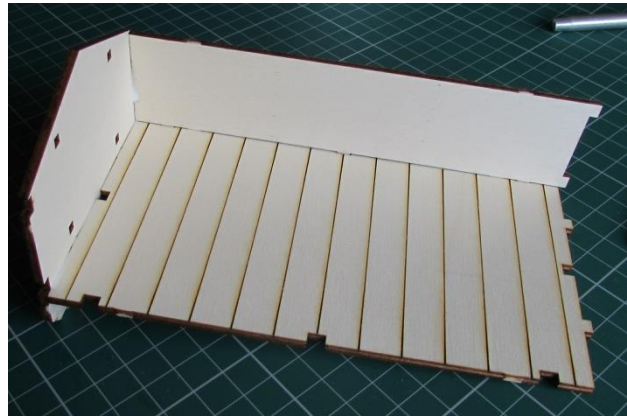
We suggest that you paint or chemically blacken your plates now before fitting to the body

## Body Assembly

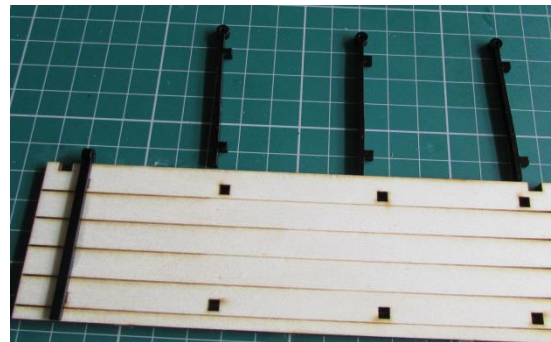
Glue one body end and side onto the floor using the lugs and sockets to hold parts in the correct position. Note the “planking” should face outwards on the sides and up on the floor. Now glue the other end and side in place and set aside to dry.



Repeat for the other lid. Set aside to dry.

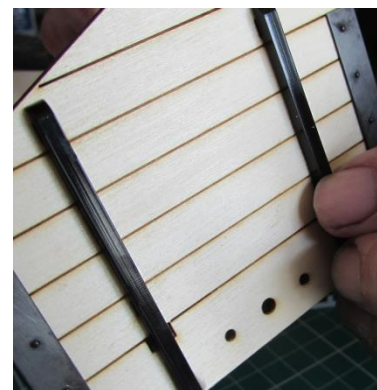


Glue four acrylic “hinge beams” to a lid (planking facing up) with super glue or epoxy. Note the two small cut outs in the edge of the lid go next to the “eyes”.



Once the body glue is dry; glue the corner plates on to the four corners. Be careful to align the top of the plate with the top edge, if it is too high it will prevent the lid from closing properly.

Next glue two end stanchions to each body end.

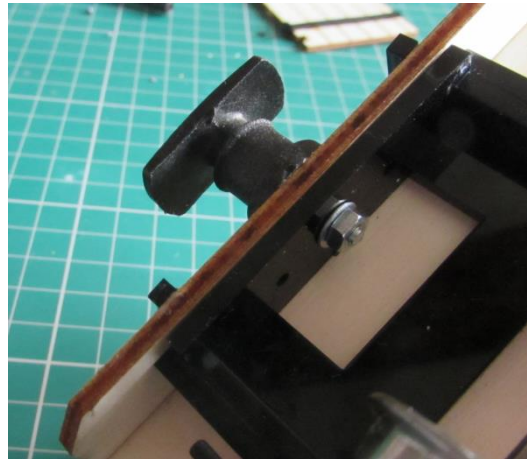
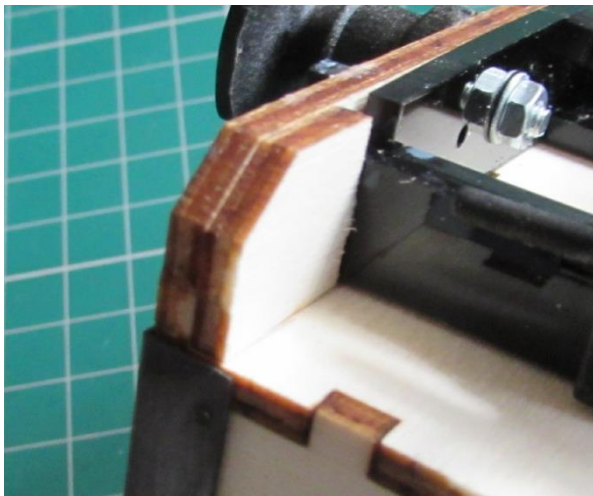


Now glue the internal end hinge plates in place. Each has a “foot” which should locate in a hole in the wagon floor to help you position the part correctly.

## Final assembly

Test fit the under-frame between the inside of the buffer beams. It should be a snug fit without being too sloppy. If it seems to be tight, lightly file the end faces of the underframe so that it fits nicely.

Now place the underframe in place and secure in place by passing the coupler mounting bolts through the buffer beam and underframe end and securing with nut and washer.



Note that an extra pair of holes has been provided so the customer may bolt on an Accucraft chopper coupler (not supplied in this kit) instead of the supplied central buffer coupling.

Two sets of buffer beam corners are provided, the larger for 32mm gauge and the small for 45mm gauge. Glue the appropriate set behind the four corners as shown.

Finally hold the 2 lids in place and thread the 16 cm rod through one end hinge hole, through all the lid hinge holes and out through the other end's hinge hole. Secure in place with a couple of drops of glue on the end holes (but none on the lid holes).

JOB DONE !

