Houstoun Gate Locomotive Works
4-Wheel Drive Chassis Assembly Instructions

It is suggested that you read these instructions through before commencing construction.

A minimum of tools are needed to assemble the kit. Sandpaper and sanding block, some strong rubber bands or weights to hold parts in place while the glue dries. You will also need a small cross head screwdriver to attach the motor and soldering equipment to assemble the wiring.

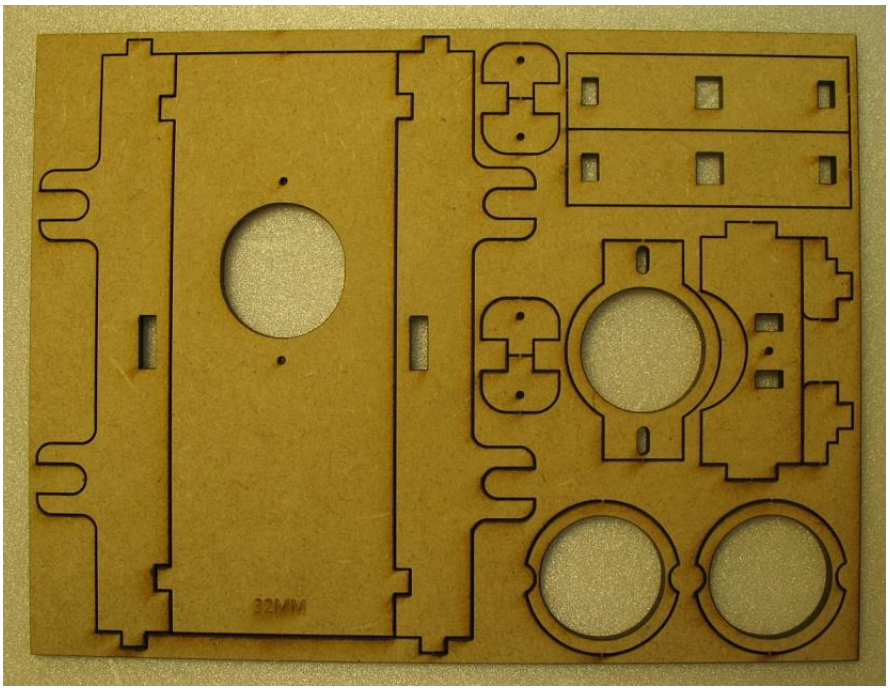
The included motor is designed to run on 2 AA batteries (Not included). These can be either rechargeable or disposable.

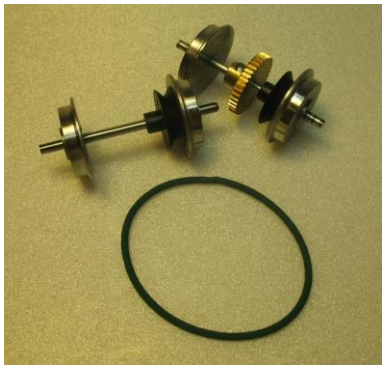
This kit requires glue and paint to complete. It can be built entirely with PVA (exterior type) or aliphatic resin, except for the grille mesh which is best attached with epoxy resin. A favourite glue is Titebond 3 aliphatic. Excess glue can be wiped away with a damp rag.

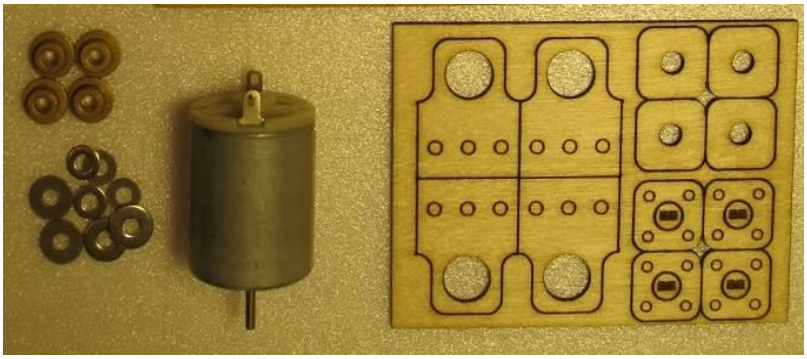
As MDF is by its nature not moisture proof and the model should be painted or varnished before use. First apply a sealer/primer - MDF sealer, thinned PVA or grey automotive primer will all do the job. The cut edges may need more than one application of primer to seal them. Cans of automotive spray paint work well and give a good finish. If brush painting then use acrylic or enamel paint.

Kit Contents

4WD Chassis
1 x MDF cut
1 x ply hub sheet
2 x Brass wire
1 x belt
1 x wheel set with gear
1 x wheel set w/o gear
1 x Motor with worm
1 x spare worm
4 x brass bearing
8 x M3 washers
2 x M2 washers
2 x self tap screws
1 x 2 cell AA battery box
1 x DPDT switch







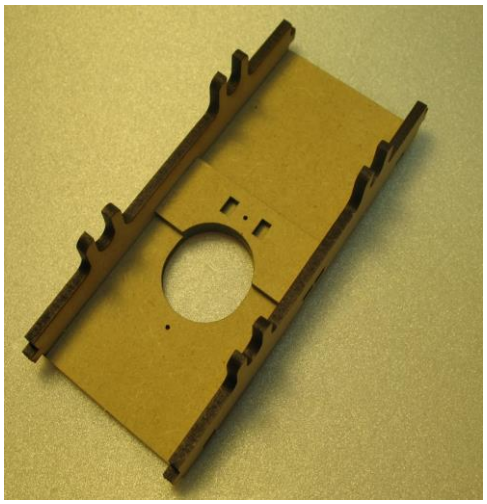
Two worm gears are included, one is a spare. In use the worm will wear but it is quick and cheap to replace. Not shown in the pictures are motor mounting screws, battery clip and switch but these are included with the kit..

Assembly

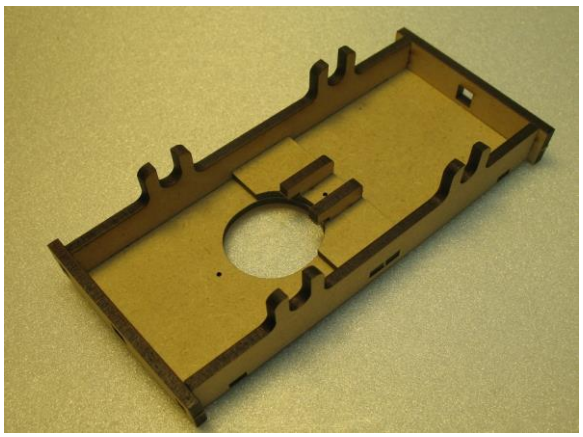
Carefully separate the parts from their sheets. Wriggling them lightly is normally enough to break the retaining tab. Sand the retaining tabs away on all parts before beginning assembly.

Start by attaching the spreader to the chassis side frames

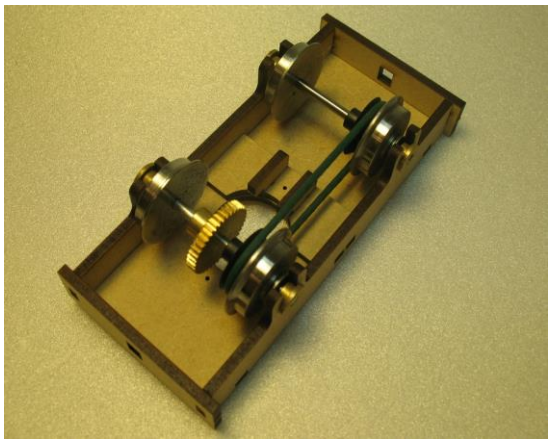
Glue the base onto the sides/spreader.



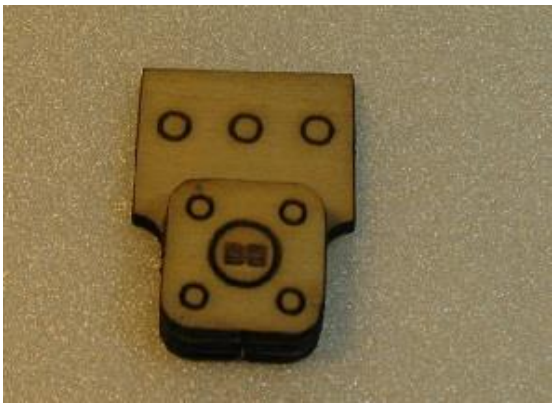
Add the buffer beams and the motor supports. The slots and tabs ensure parts are properly aligned. Hold parts together with rubber bands while the glue sets.



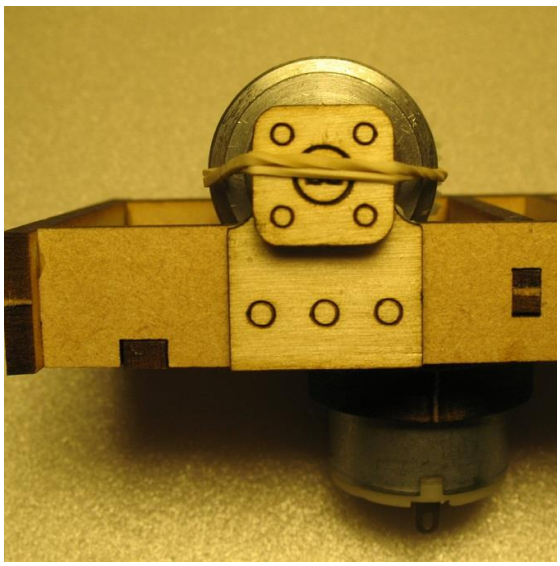
Place two washers onto each axle end followed by a top-hat bearing and mount the axle assembly in place between the frames. The top-hat bearings fit with the widest part on the outside of the frames.
Don't forget to fit the polyurethane drive belt at this point.



Assemble the axle boxes by layering the three parts for each axle box as shown.

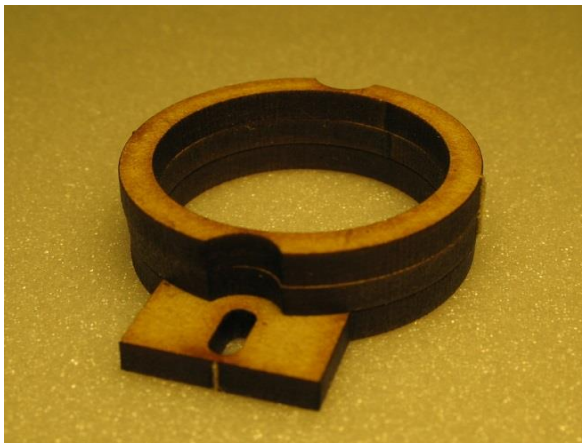


Glue the axle boxes to the chassis. Make sure you don't allow glue to seep into the bearings. Align with the top of the chassis and hold in place with rubber bands.

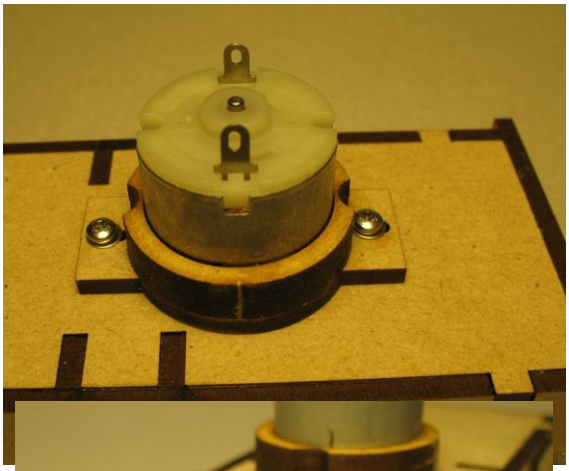


Glue the three motor holder hoops together as shown in the picture. You can use the motor to assist aligning them but remove the motor before the glue sets.

Once the glue on the motor holder is dry place the motor in the holder and insert it into the chassis so that the motor rests on the motor supports.The motor should now be glued to the holder. Wood glue will have sufficient grab on the motor to keep it in place. However a couple of drops of cyano glue will also do the trick. Alternatively you could use hot-melt glue if you have a glue gun. Take care not to glue the motor assembly to the chassis.

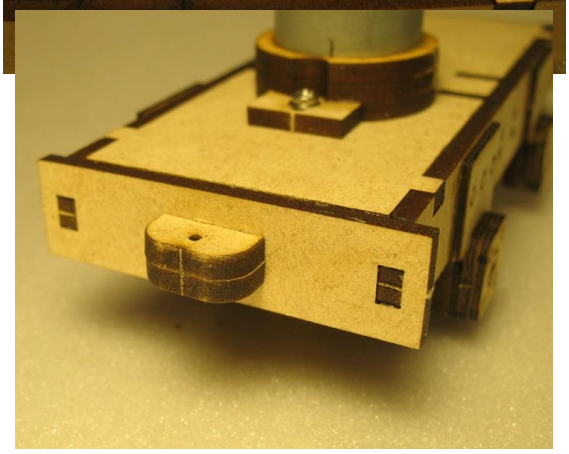


Once all glue is dry it is time to secure and align the motor. Place a washer onto each self-tap screw and carefully screw the motor/holder onto the base. Don't tighten the screws fully yet. Slide the holder around until you have the perfect mesh between the worm and the spur gear. The worm must not be tight against the gear but should have a tiny gap. Now tighten the screws but be careful not to overdo it as this may damage the base.



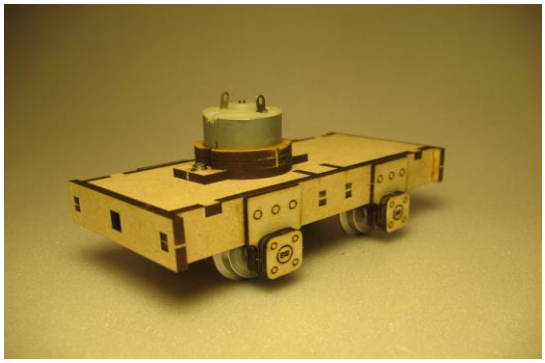
If you are fitting this chassis to one of our body kits you should omit the buffers

If you plan to use the chassis with a body perched on top affix the buffers then shape the brass rod into coupling hooks and fit in the locating holes

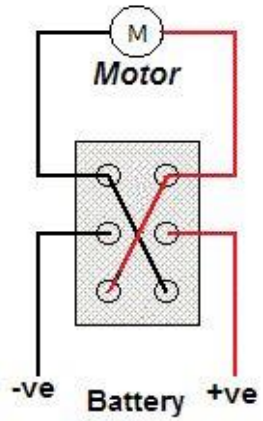


Note: The gears should not be lubricated, oil or grease tends to be pushed off the worm anyway so only serves to attract dust and dirt and nylon is self-lubricating.
The chassis top-hat bearings do already contain oil but a **tiny** drop may be applied after extended running.

The chassis is now fully assembled, just add the batteries and switch to complete



Houstoun Gate Locomotive Works have upgraded the kit since its inception to include a switch that allows forward, centre off and reverse operation. This picture below shows how the wiring should be carried out.



How to wire the motor and switch