

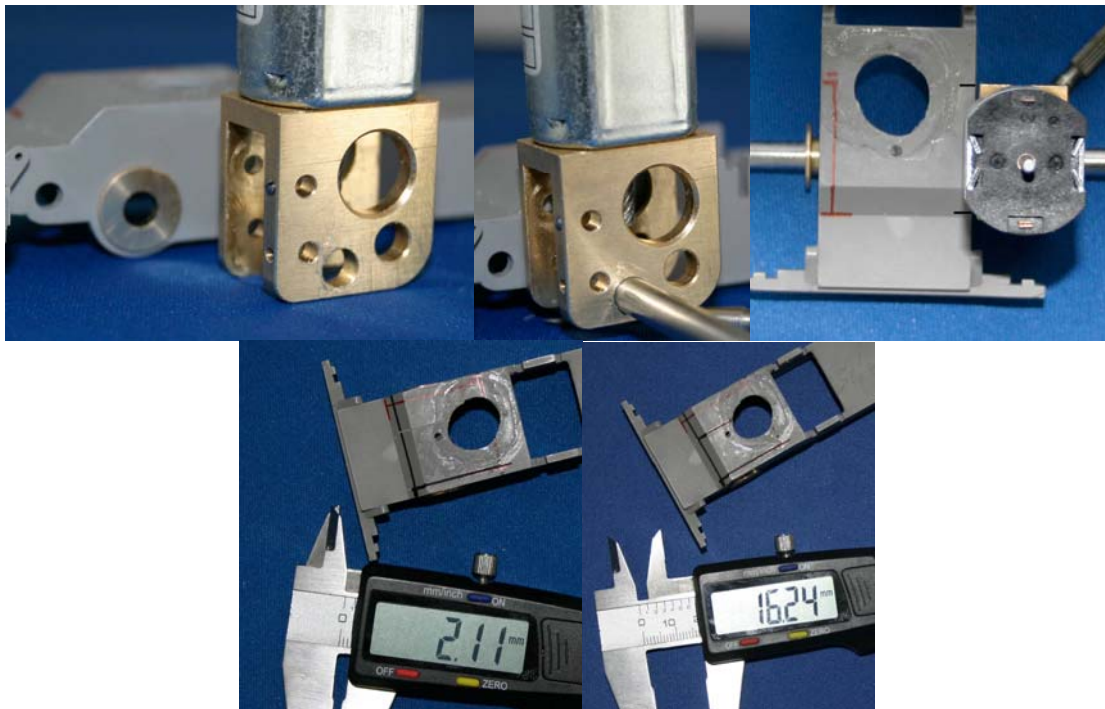
Adapting the JLTRT diesel bogies to fit a Ron Chaplin Gearbox

Whilst the pictures illustrate the fitting of a gearbox to a class 24/25 bogie these instructions are a general guidance and will work with all bogies except those for the peaks. Some modification to the instructions will be required for the class 50 which has detail inset to the inner frame.

Take the motor gearbox unit and loosen the grub screw retaining the pinion for the intermediate gear, remove the gear and pinion and place in a safe place.



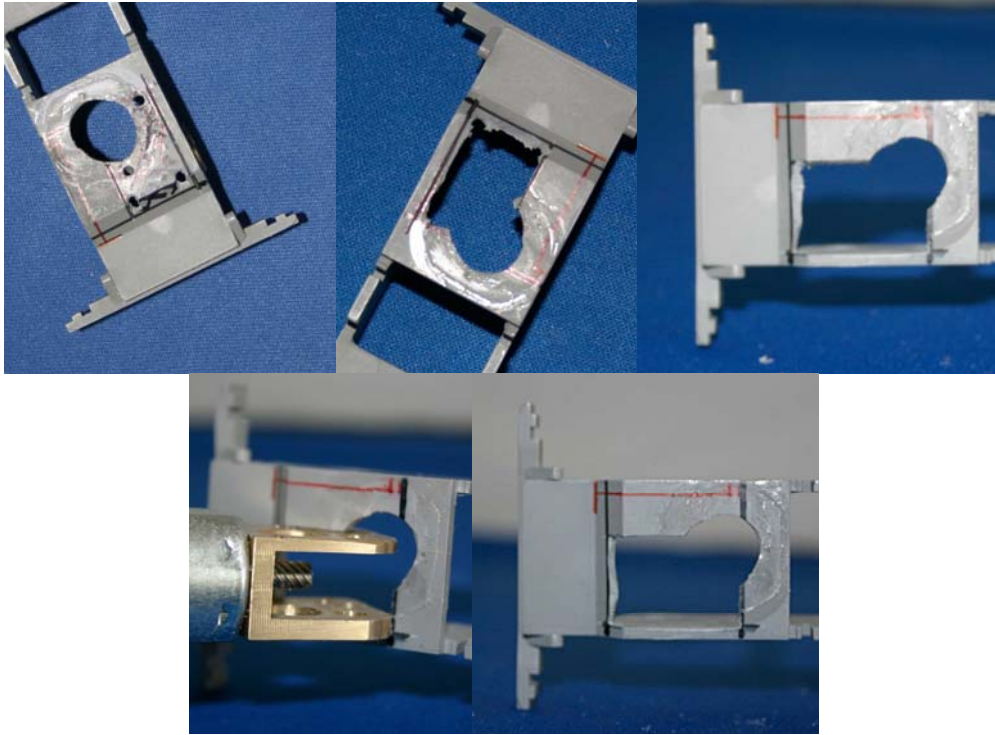
Fit the bearings in place on the inner bogie frame, note these may need modification so that they do not extend into the inside of the frames. Align the gearbox unit as shown in fig 3 and using a 3/16" rod, or Slater's axle hold the gearbox upright against the side of the bogie. Mark the bogie where the front and rear of the box fall, at this stage it is preferable to mark undersize as we will be making adjustments to ensure a snug fit along the way. Use a square to extend these marks across the bogie frame. At the same time mark a line parallel to the right edge at a distance of approx 2mm and an additional line about 16 mm but no more than 16.5 mm from the right hand side. The area within the box just formed now needs to be removed.



The quickest way to remove the unwanted area is by the use of cutting tools in a mini drill. This however will create lots of airborne dust and the use of a dust mask is essential as the effects of this dust on health are not known.

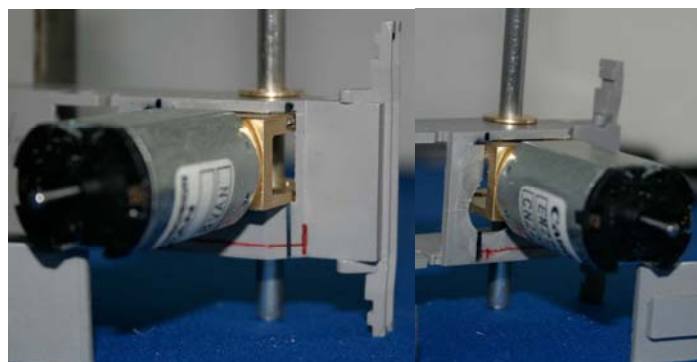
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Start by drilling a hole at each of the corners then using either a slitting disk or burr rough out the remaining section of the area being removed. Using a file or modelling knife make the edge of the hole closest to the bogie side flush with the inside of the frame, see fig 10. Work next on the opposite side of the hole cleaning up the edge and widening the hole until the gearbox just slides in without force. Now work on the ends of the hole making them square. Make small adjustments to each end until the gearbox slides into place and the axle holes on the bogie and gearbox are aligned.



To check the fit and make the adjustments it is better to remove material in small amounts and check with the gearbox frequently.

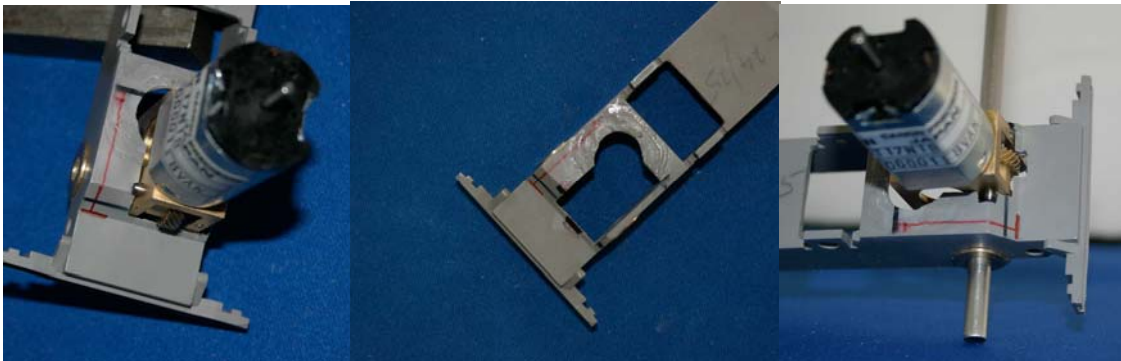
With an axle in place the motor should be a snug fit with the frame providing support and limiting movement of the gearbox, but not exerting any pressure on it. Any pressure can lead to the gears becoming misaligned and jamming. If the opening has been made too large and the gearbox is loose within the opening a short piece of Plastruct angle (or similar) can be glued to the bogie frame.



Once a fit has been achieved that you are happy with remove the gearbox and replace the intermediate gear, when re-fitting the pinion ensure that it does not overhang from the thicker side of the gearbox. Now slide the gearbox back into place the intermediate gear and its pinion will probably

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prevent it from doing so, if so mark where these foul the bogie remove the gearbox and clear the offending material. Ensure that sufficient clearance is provided for any moving parts.



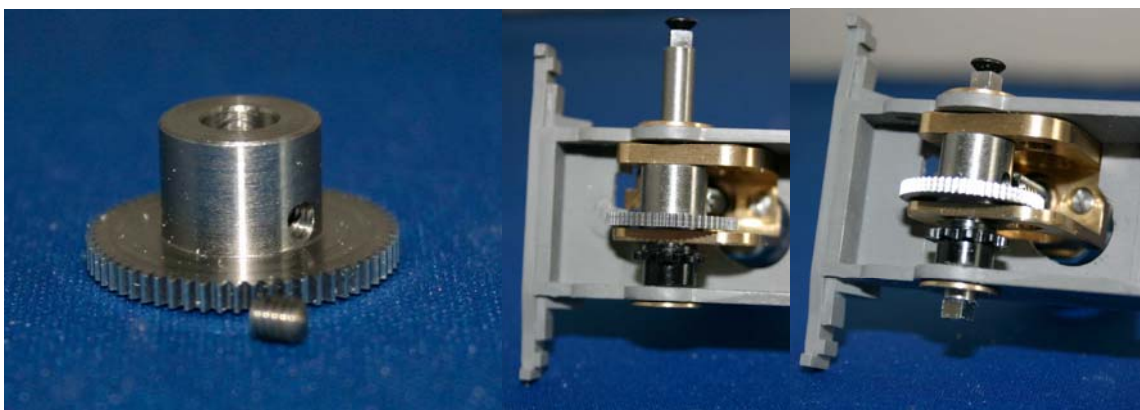
Refit the gearbox and hold in place with the 3/16" rod/axle. Turn the unit over and measure the space alongside the gearbox where the delrin sprocket will fit, make an allowance on the measurement to cater for adjusting the position of the sprocket. Using a razor saw trim the end of the boss on the delrin sprocket so that the sprocket will fit in the available space.



At this stage any fittings required on the inner frames should be added and the inner frame painted. Pick up arrangements should be considered and if necessary fitted ensuring that they won't foul either the gearbox, the gears or the delrin chain.

Final Assembly

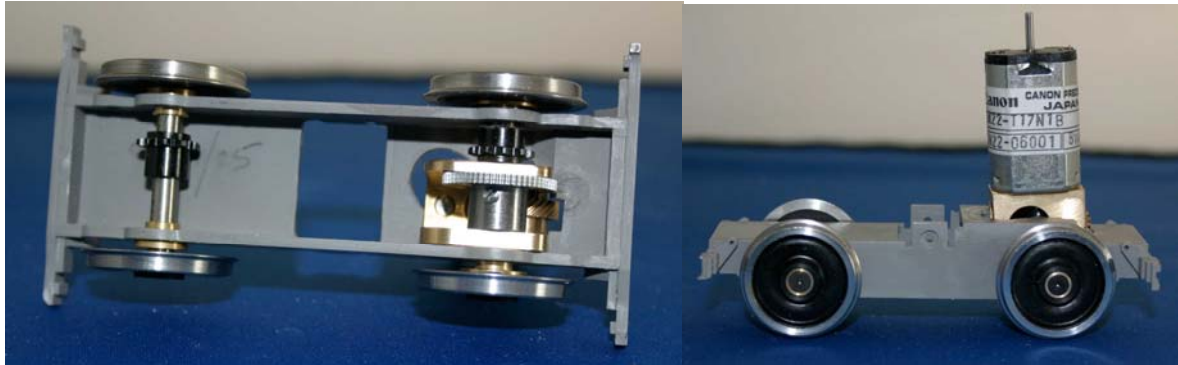
Take the final drive gear and remove the grub screw (this will prevent it jamming in the intermediate gear), keeping it in a safe place. Insert the gearbox into the bogie slowly feed the axle through the bearing and outer frame of the gearbox, place the final drive gear in place and again feed the axle, finally place the delrin sprocket into place and move the axle to its final position. Refit and tighten the grub screw in the final drive.



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Now fit the axle at the opposite end of the bogie remembering to add the other delrin sprocket. With the wheels in place adjust the position of the sprockets so that they are in line and the delrin chain is free to move between them. When fitting the chain ensure that it is taught but not over tight.

Note that for the class 50 bogie it may be necessary to thin the rear of the protrusions into the bogie frame to allow the delrin chain to pass freely.



Assembling bogies to the Chassis

When the bogies are ready to assemble on the chassis test for fit within the opening provided, it may be necessary to enlarge the opening. The opening should allow for approx 2 mm clearance at the rear of the motor at all points in the swing. As the motor is sat further back than the cast in mounting point the front of the motor should be clear.

Removing material from the chassis will, to some extent, weaken it so it is essential that only the minimum of material is removed to provide the necessary clearance.