

St Albans & District Model Engineering Society

Standard bar couplings and dimensions

We may all think health and safety can be over-done but when it comes to locomotive, driving and passenger truck couplings it is important. It is all too easy to get a bit casual about couplings with all manner of screws, nails and odd bits of chain being used to improvise a connection. This inevitably results in uncoupling incidents. The worst of these are locomotive run-aways which are likely to end with damage to locos and/or trucks or injury to people. Therefore, all locomotives, driving and passenger trucks at the Puffing Field are required to have proper couplings.

Each coupling shall consist of a steel coupling bar which is pinned at both ends to steel coupling blocks which are securely fastened to the locomotive and truck buffer beams. The photo on the right shows what is required and recommended dimensions are given below. The pins shall be made of steel and retained by an 'R' clip or similar device. The 'R' clip is important as it ensures the pin cannot work its way out while running – which has happened to plain pins at our track in the past. Retaining the pin by means of a 'Nyloc' type lock-nut is also acceptable but not a plain nut.

You should find that each passenger truck at the track is already fitted at each end with coupling blocks and pins with 'R' clips, and a steel coupling bar at the front end. Please use these to couple passenger trucks together and to your driving truck or loco. As a matter of courtesy, make sure you put the pins back after you have finished your run.

Your engine and/or driving truck should be fitted with a secure coupling block on the rear buffer beam which accepts the coupling bar of the passenger truck. You can see what is

required in the photos above and below. The pin hole should be $\frac{1}{4}$ inch/6.35mm clearance diameter and the slot in the coupling block should be wide enough to accept a $\frac{1}{8}$ inch thick steel coupling bar with a little slack movement up and down. The slot should extend at least $\frac{1}{2}$ inch/12.5mm beyond the centre of the pin hole. You should provide your own steel coupling pin, $\frac{1}{4}$ inch or 6mm diameter, and it should be cross-drilled and fitted with an 'R' clip or similar device to stop it coming out when running. Our standard coupling height for 5 inch gauge is 93mm above the rails (narrow gauge type locos may need a swan neck coupling bar to link up to this).



A typical bar coupling. The bar is held in the coupling blocks by pins which are retained by an 'R' clip (right) and a Nyloc nut (left).

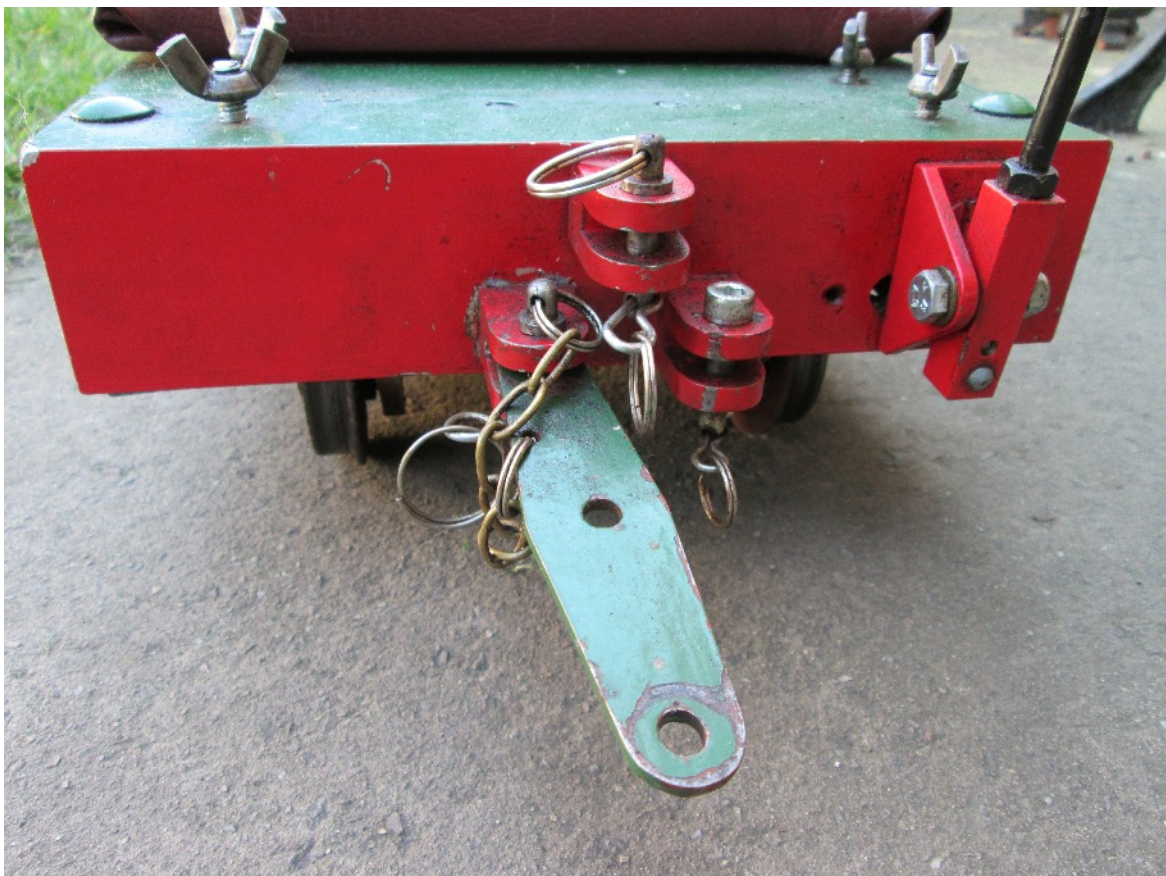


A typical coupling block. This one is on the rear of a passenger truck but it could equally be on the back of your loco.

If you want to run a 3½ inch gauge loco you need a driving truck with an offset front coupling to match your loco and a standard 5 inch gauge rear coupling. The normal 3½ inch gauge coupling height is 66mm above the rails (i.e. 27mm below the 5 inch gauge coupling height) and the offset from the 5 inch gauge centre line is 19mm. The photo below shows a suitable dual gauge coupling arrangement on the front of a driving truck.

If the back of your loco has a scale coupling hook then you will need to make a suitable coupling adaptor block which is retained by a pin and clip through the hook slot. You must ensure that such a block cannot lift and work its way off the hook under varying coupling loads. Never use chain to couple onto a coupling hook.

Remember that the track marshal of the day has the right to stop you running if he feels your coupling arrangements are not safe.



A dual gauge coupling arrangement on the front of a 5 inch gauge driving truck. The upper centre coupling block is for 5 inch gauge use. The lower two blocks are for coupling to a 3½ inch gauge loco on a dual gauge (5 and 3½ inch) track, allowing for right and left offset of the 3½ inch rail. The coupling bar, set to couple to a 3½ inch gauge loco, is 3mm steel and all three 6mm coupling pins are retained by 'R' clips. The brass chain is not used for coupling - it merely attaches one of the pins to the coupling bar so it cannot get lost!