DCC for Dapol 45xx Locomotive

We are grateful to Mr Roger Miller and Railway Modeller Magazine for allowing us to re-publish articles which have previously appeared in the magazine, which show how to install DCC systems into our locomotives. We hope you enjoy reading them.

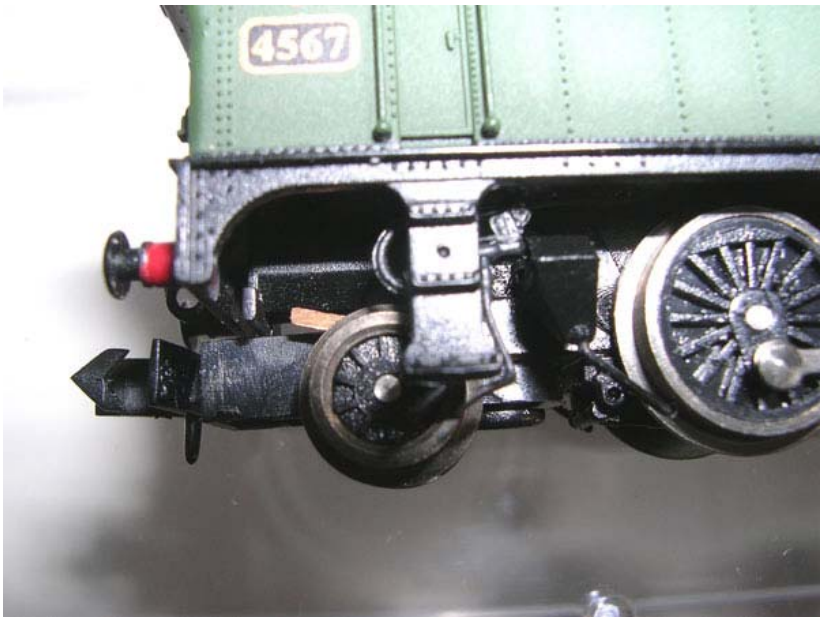
Can we please comment that Dapol Ltd does not warranty the information contained in the article and any such modifications undertaken is entirely at the end users risk.

Please ensure your model is in good condition before commencing to fit DCC as this will invalidate any warranty.

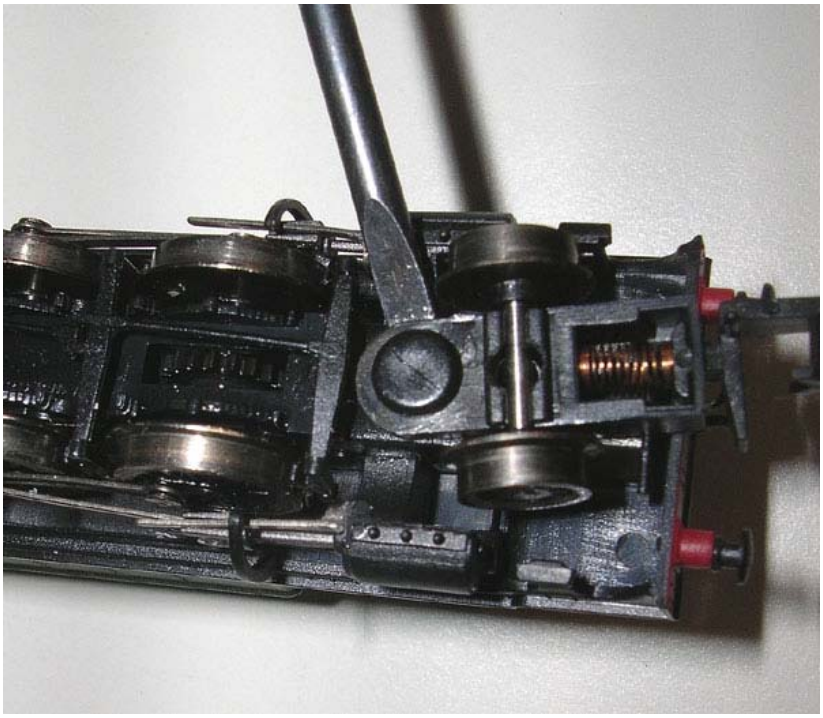
When Dapol produced the 45xx it provided the modelling community with a superb model, full of character, filling a much-needed slot in the range of British outline locos. Fortunately, there is just enough room to put a DCC chip into it .but only just.

There are some tricky processes involved including soldering directly onto the DCC chip s printed circuit board. However, with the use of the correct soldering equipment and good technique there should be no problem. I use a 15w miniature iron with a 1mm bit. Anything larger will not get in to the small places accurately enough and will probably carry too much solder. Have a damp cleaning sponge at hand to wipe the tip. Cleanliness is paramount when soldering has to be done accurately and quickly.

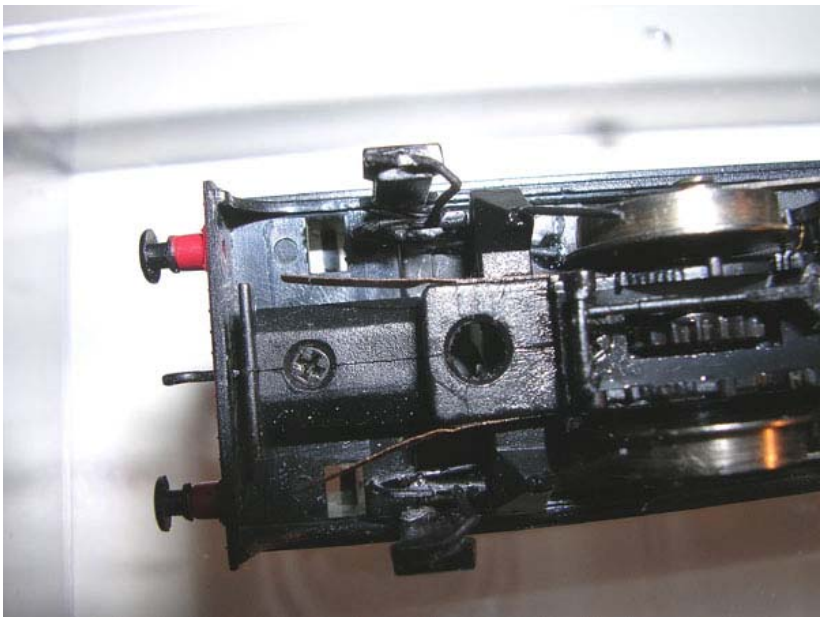
1. Initially the body needs to be separated from the chassis. There is some pipework attached to the rear footstep and this needs to be cut away from the step with a sharp knife. By sliding the knife between the Step and the pipework, a clean separation can be made allowing it to be re-fixed at the end of the whole process. Repeat this on both sides.

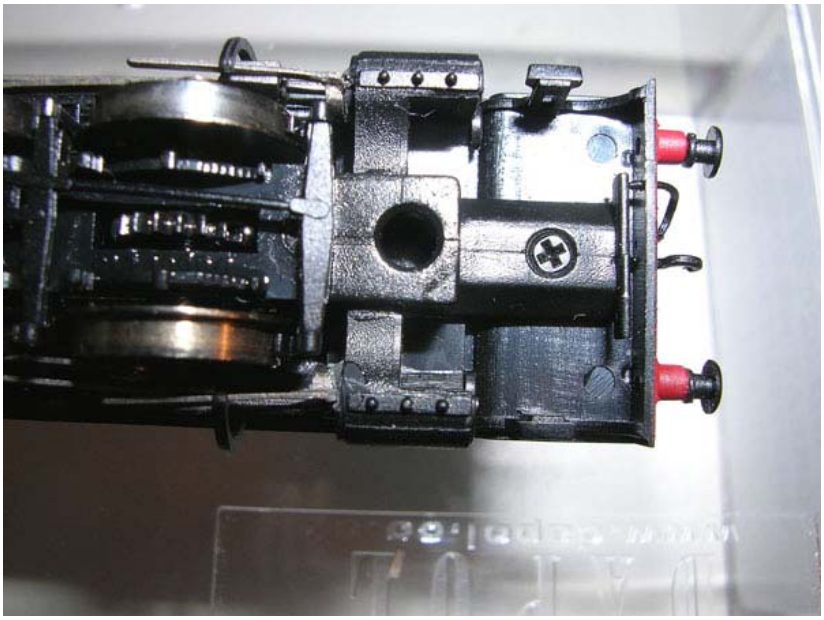


2. Remove the front and rear pony trucks by inserting a small, thin-bladed screwdriver under the truck and easing out the plastic axis-pin. Take care not to bend the phosphor-bronze pickups used by the rear truck.



3. Removing the pony trucks reveals two small screws, one at each end of the chassis. Remove both.





4. Grip the sides of the cab roof and ease the cab off the main body. The cab roof, front and back are all in one piece. The coal can be removed from the bunker too as this is held in by the cab moulding.

5. The chassis can now be removed from the body shell. I found it easier and safer to initiate the separation by pushing down on the chassis through the access area provided after removal of the cab.

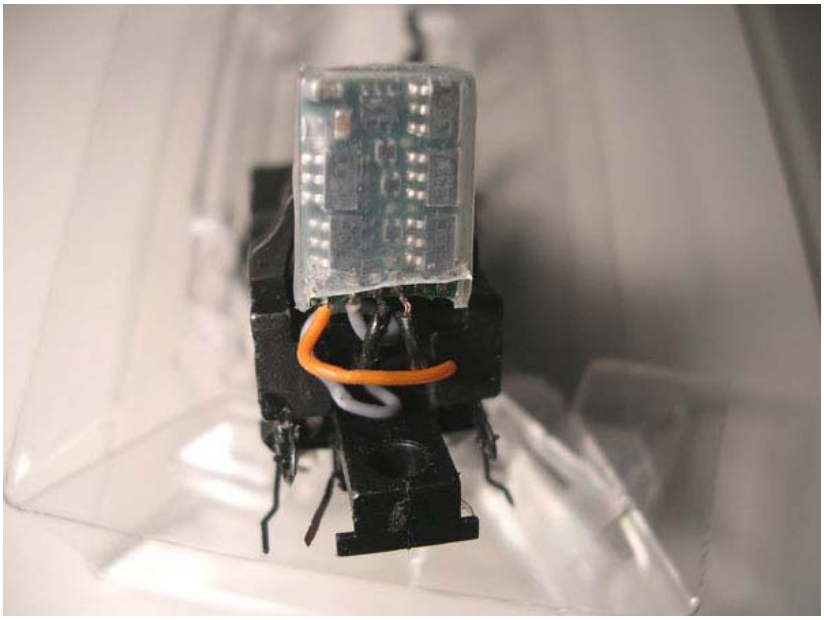
6. Unsolder the capacitors and suppression choke assembly from the motor terminals and the two small black wires coming up from the wheel pickups. The common twisted capacitor wires attached to the motor casing are best clipped off with wire cutters as near to the motor as possible. A small soldering iron would not provide the necessary heat to unsolder it.

7. The recommended DCC chip is the ZTC217 because this comes with an insulated coating that isolates it from any motor and chassis contact when working in such a small space. However, the chip requires some preparation and for this a 2mm strip of the insulation should be cut away to give access to the six coloured wire joints.

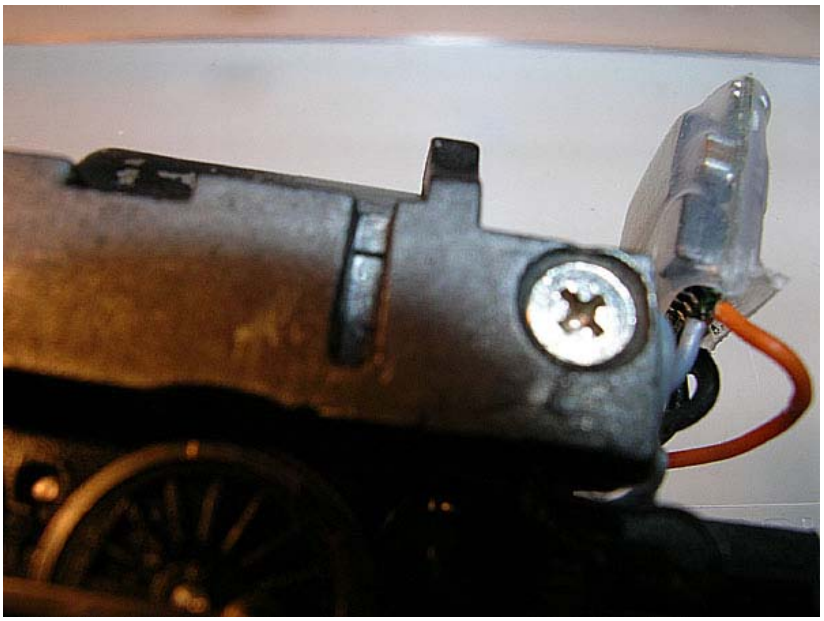
Support the chip in a firm location, like a small vice, with the wire connections uppermost. Remove the Yellow and White wires from the chip by putting a little tension on each wire and dabbing the soldering iron on the connection to the chip s circuit board. British outline does not require lights and this is typically what the yellow and white wires operate. The wires only take up valuable space and just get in the way. Repeat the process and remove the red and black wires remembering that the red wire terminal is next to the grey wire. Shorten the grey and orange wires to 15-20mm. Strip off 1mm of insulation and tin the ends with solder.

8. Place the chassis in a small vice with the motor terminals uppermost. Locate the black wire coming from the right-side wheel pickup and solder it directly to the point that the red wire was removed from that is the one next to the grey wire. Solder the black wire from the left-side wheel pickup to the next point that is the one from which the original black lead was removed from the chip. Solder the Orange wire from the chip to the right-hand motor terminal. Solder the Grey wire to the left motor terminal. All the soldering is now complete.

Test the chip in programming mode to see if the default address can be read.



9. There is only just enough room to fit the chip into the cab at approximately 45 . To assist this, the plastic bar running between the two chassis halves and located right behind the motor should be turned so that the flat surface is at 45 . To do this loosen the two screws on either side of the chassis, turn the bridging piece and retighten the screws.

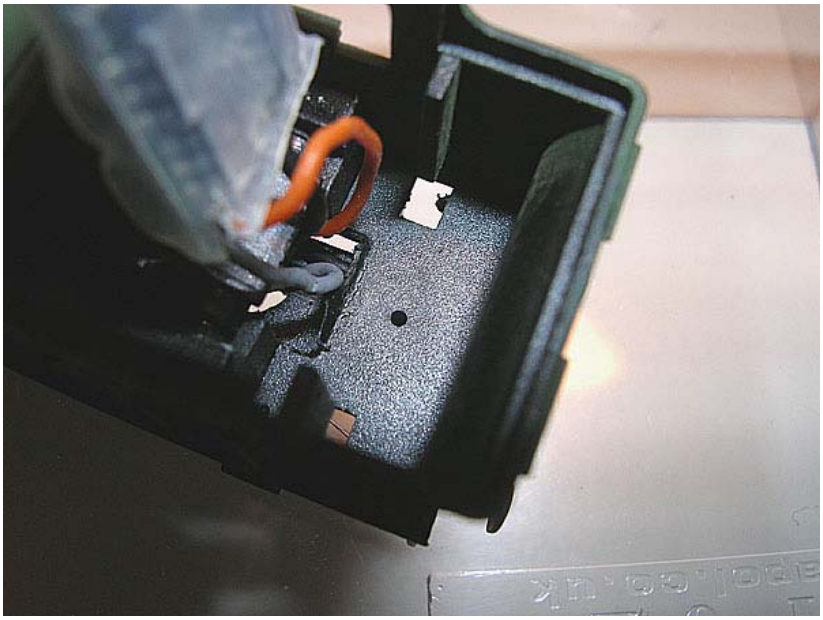


10. Replace the body shell with the chip sticking out of the cab.

Make sure that the delicate wires are not trapped by steering them through the cut-away in the cab/bunker floor.

Refit the two screws from the underside.

Refit each of the pony trucks locating the pickup wires on the rear truck carefully behind the wheels.

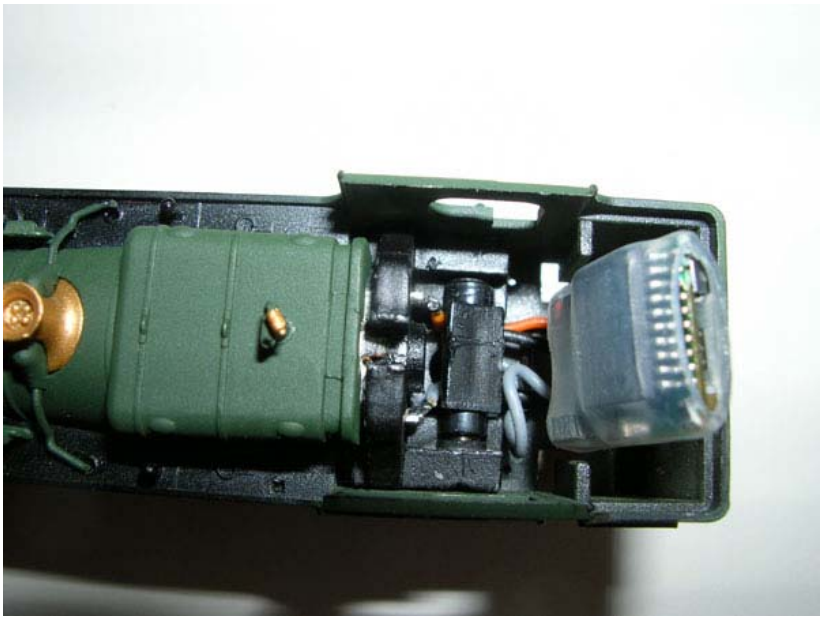


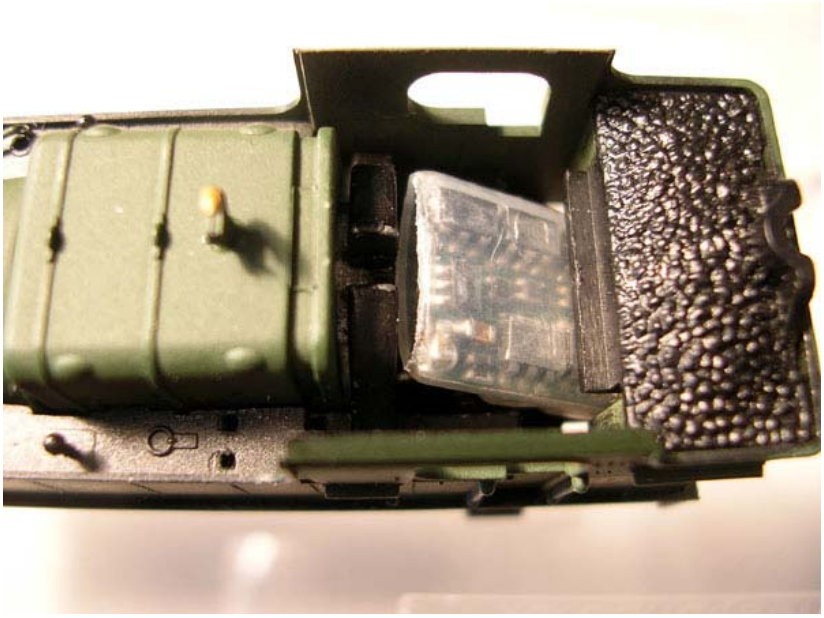
11. Now the fun starts!

Position the chip at an angle and re-fit the coal into the bunker. If the chip is not seated low enough, it will try to push the coal moulding out of position when the cab top is fitted.

Perseverance and patience is required but it can be done. The downside of using an insulated chip is that although the coating is very thin it still takes up valuable room.

It is tempting to cut away the small step at the front of the coal moulding. Try to resist this because the tab allows the cab moulding to lock the coal moulding in place.





When the cab is re-fitted all that remains is to re-locate the pipework to the rear footsteps with a little cyano and the job is complete.

Enjoy your digital 45xx.

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