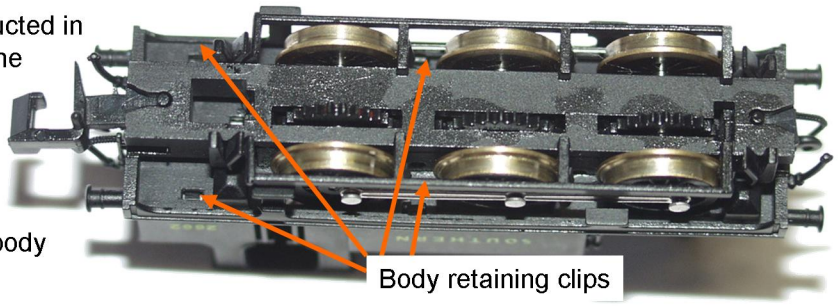
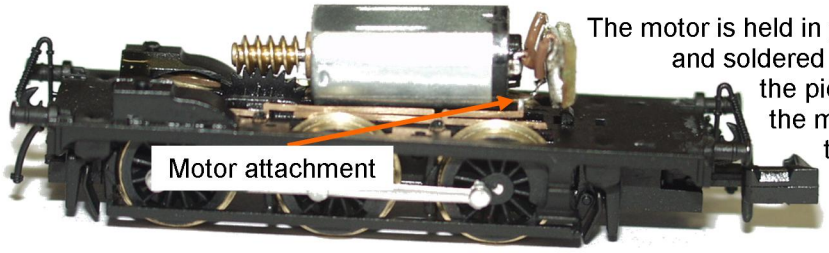
Dapol Terrier

After market DCC Conversion

Dapols 2009 edition of the 0-6-0T (LB&SCR) **A1 Class** 'Terrier' was not designed to be 'DCC' ready, it is however convertible with a moderate amount of effort. It should be noted that conversion to DCC will invalidate the manufacturers mechanical and electrical guarantees, and it is essential that the model is tested, and run-in according to the manufacturers guidelines before conversion is commenced. *For successful conversion a good level of soldering skill, and accurate measurement of wire lengths is required, as space is extremely limited inside the model.*

Disassembly: The model is constructed in two main sections, which separate at the top of the chassis, the separation line can be seen at the base of the tanks and bunker. The top half of the body is held in place by four clips (which are part of the upper body) carefully ease these clips, whilst pulling on the body and chassis will result in separation.





The motor is held in place by mouldings in the upper body, and soldered to a pair of brass strips, which are also the pickups, once the upper body is removed, the motor is therefore not securely mounted to the chassis.. *Caution: these strips are held in place by plastic rivets, and is damaged would be difficult to replace satisfactorily.*

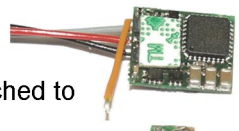
Decoder installation: In order to provide its impressive hauling ability, and responsiveness within a small physical size, a 9v motor is used. A small circuit board is attached in which two resistors are wired in series with the motor, in order to reduce the voltage. It is important that this board is retained when operating with DCC, as otherwise the motor will be damaged. This board will be re-wired in series with the motor, on the drive side of the decoder (it is important that the decoder received the full DCC voltage supply) Space is extremely limited, and neat soldering, and exactly measured wire lengths are vital!

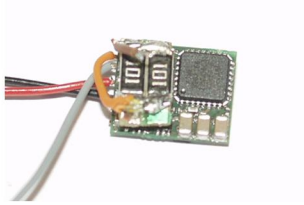
The decoder will be mounted alongside the resistor board, standing vertically inside the cab, this guide demonstrates the fitting of a Lenz Silver mini decoder (10310). A Lenz Gold mini (10410) would also fit. The slimmer CT Elektronik DCX75 may be easier to fit as it is slimmer, however, TCS M1's and Digitrax DZ125 decoders appear fractionally too long to fit easily in the space available, without modification to the bunker weight, and the fitting of these decoders has not been attempted at this point.

The motor and resistor board should be careful de-soldered from the pickup strips (care should be taken not to bend these) and the existing wires removed.

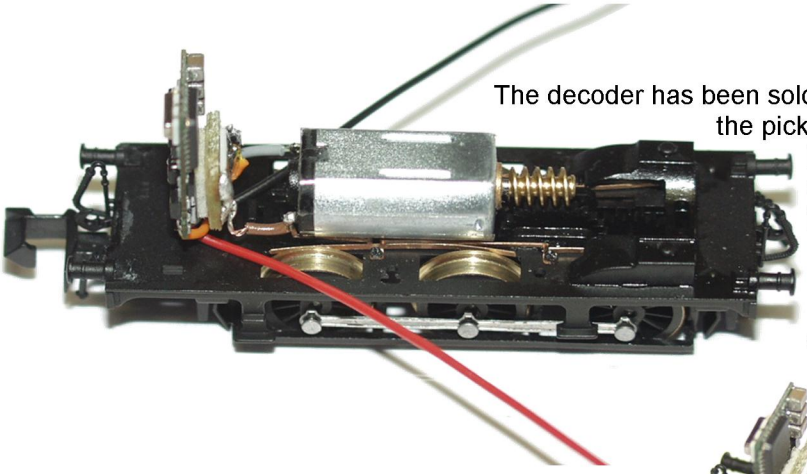
The vertical extensions of the pickups, should be shortened slightly, to prevent them from contacting the motor after installation.

The decoder is prepared with a small section of double sided tape which will hold the resistor board in place. The Orange wire has been prepared to length and will be attached to the resistor board.

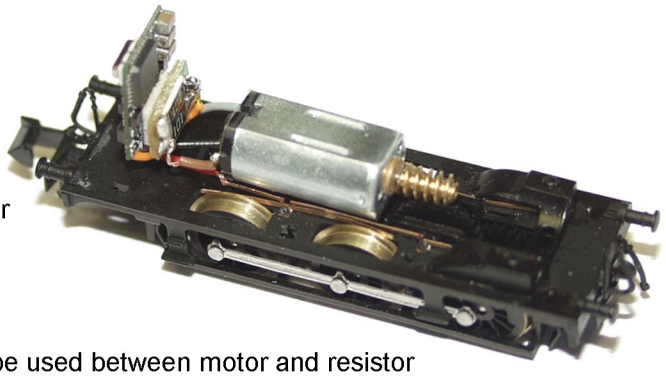




The resistor board mounted to the decoder, and the orange wire soldered in place. The gray wire, and brown wire will be soldered to the motor, the Black and Red to the *inside* of the pickup strips. It will be noted that the Blue, White and Yellow wires have been removed from the decoder to save space, and for the sake of clarity if lighting is being added, these will be required to remain in place.



The decoder has been soldered to the motor (Brown and Gray), and the pickup wires (Red & Black) are then cut to length, and will be soldered on the inside of the pickup strips. (This is to avoid fouling the wheels and the body. It is a good idea at this point to check the fit of the body on the chassis, as this is essential for correct meshing of the worm gear with the main drive.



The completed installation, (the decoder and resistor assembly will be moved closer to the rear of the motor before fitting.)

A little Kapton® tape should be used between motor and resistor board, and also applied to the metal weight from the bunker, to avoid possible short circuits from occurring after assembly. The motor will already have a factory applied insulation (transparent) on the main body.

The model after final assembly, showing the final position of the decoder.

When re-fitting the body, ensure that the plastic clips are not damaged, and that the rear of the bunker fits snugly inside the base of the buffers.

The motor gears should be checked for correct meshing, and the pickup strips remain positioned on the inside of the wheel rims.

It maybe found easier to place the motor in its cradle inside the upper half of the boiler, before lowering the chassis and wheel assembly into place.

As always before running, check for short circuits with a multi-meter, and initially operate on the test track to minimise the risk of damage to the decoder in case of installation error.

This guide has been prepared to illustrate the principles of installing a decoder into this locomotive only.
It is assumed that the installer is proficient with the tools required, and has a full understanding of decoder installation. The installer should ensure that there are no manufacturing or type variations and make the required adjustments to the process.