

## **Kohs & Company DCC Installation Guidelines**

The DCC installation illustrated on the attached drawing assumes the use of NCE DCC decoders, the use of other brand decoders should not substantially change the installation, only the decoder configuration would be potentially altered. The final configuration of the decoders for operation should be as a 'consist' with the loco decoder as the lead loco and the tender as the number two loco, both operating in the forward mode.

The tender decoder needs to be configured to use the 'alternate' speed table with the default settings left in place on that table, you want (0) output from the motor drive of this decoder. On the illustration you will see that there is a resistor installed across the motor drive leads on this decoder, this is to allow the decoder to show up on the cab unit for programming purposes.

It is advised that if an NCE 408 decoder is used in the loco that the header connectors be removed and that the wiring be soldered directly to the circuit board to allow for easier placement of the board within the loco firebox area.

The wiring arrangement illustrated uses the original regulated 5V power source of the sound boards to power the lighting of the model so that the original bulbs can be used. To provide for control of the lighting by the decoders, a common ground must be established between the sound circuit boards and each decoder, this is illustrated on the diagram. The leads indicated on the diagram that should be reconnected or assigned as 'functions' are the ground side of the connection for each item concerned, this connection relies on the common ground for proper functioning. The decoder default guide for lighting function assignment should be followed for proper typical operation.

The wiring illustration is a universal drawing for all of our late version models and may include components not included in the model that you are servicing, but this is of no consequence and does not change the decoder installation. You need only to be concerned with wiring illustrated in color, black lines are existing wiring that need not be changed.

Finally, it is advised that you test your installation prior to the model reassembly. The leads to the motor(s) and the sound circuit board from the decoder in the loco will be polarity sensitive. Test to make sure the motor rotation will provide the proper direction of movement and that the reverse-gear mechanism is in the proper position based on forward and reverse motion.

# Kohs & Company Steam Locomotive Sound System Wiring with Dual DCC Decoders

