

# Instructions for DN144K Decoder Installation



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Digitrax Command Control

## **DN144K**

### **1 Amp DCC Plug N' Play Mobile Decoder for KATO N-scale C44-9W Locomotive**

1.0 Amp (1.5 Amp Peak) Mobile DCC Decoder

Easy, no solder installation

Supports Both Short (127) & Long (10,000) Address Modes

User Programmable Address, Acceleration, Deceleration,  
Start-voltage, Mid-point voltage, Max voltage and more

Programmable from DCC compatible equipment without opening the loco

Smooth conversion to analog operation with functions operational

4 User Configurable, Independent Function Leads Rated at 200ma  
Use These as Regular Function Outputs or as FX™ Outputs  
To Generate Special Lighting Effects

Choose from Mars, Gyalite, Single or Double Strobe, Ditch Lights and more

Smooth locomotive speed control with user selectable  
14, 28, or 128 forward & reverse speed step capabilities

User loadable speed tables for customized speed control  
with 128 speed step resolution

Supports Basic, Advanced & UniVersal Consisting

User configurable loco direction of travel, you decide  
which way is forward without rewiring the motor

Compatible with the DCC Standard

Complies with FCC Part 15, class B RFI requirements

**Made in USA**



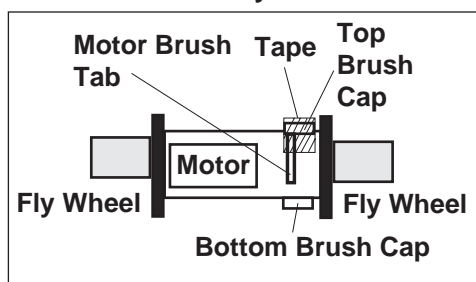


## Decoder Installation Instructions. For DN144K In Kato N-scale C44-9W

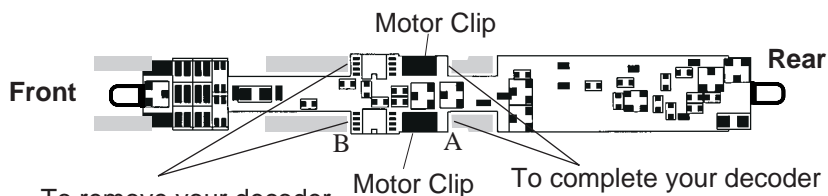
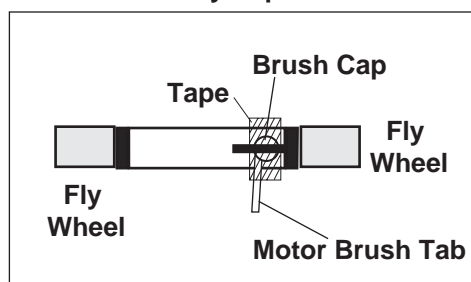
See Digitrax Decoder Users Manual for complete decoder test procedures, installation instructions & technical information. This manual is available at no charge from your dealer. If your dealer is out of these manuals, contact Digitrax (770) 441-7992, Fax (770) 441-0759, or e-mail [sales@digitrax.com](mailto:sales@digitrax.com) and we will gladly send you a copy.

1. Remove locomotive shell.
2. Remove the lamp board by gently sliding it back and lifting up.
3. Carefully take the frame apart by removing the screws and fuel tank cover.
4. To insure motor isolation in case the brush caps become misaligned and short circuit with the frame we recommend placing yellow kapton tape over both the top & bottom of the motor cage.
5. Your decoder was shipped secured to a piece of foam packing material by a piece of yellow kapton tape. Remove this tape and cut two pieces approximately 3/4".
6. Apply the tape as shown in the diagram below. Be sure the tape does not interfere with the operation of the motor. Be sure to leave about 1/2" of the motor brush tabs free of tape so that it can make contact with the decoder motor clips.

Motor Assembly Left Side View



Motor Assembly Top & Bottom View

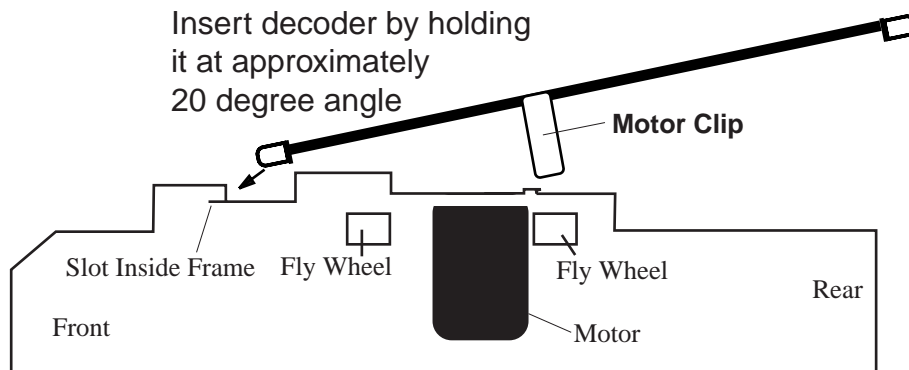


To remove your decoder, insert thin screwdriver blade here and twist against the frame to push the decoder to the rear.

To complete your decoder installation, insert a thin screwdriver blade here between loco frame & decoder then turn the screwdriver against the edge of the decoder to push it forward.

Caution: To avoid breaking your DN144K, do not bend or flex the decoder board during installation. Do not attempt to install the decoder by pushing it into the frame by the rear of the decoder. Do not ship, transport or store your DN144K without the foam shipping block provided. Boards broken due to flexing will not be covered under warranty.

7. Reassemble locomotive frame with tape in place.
8. Insert the front of the decoder into the front of the frame by lowering the decoder at a 20 degree angle. Gently engage the front end of the decoder in the notches in the front of the frame.
9. Once the front part of the decoder is engaged, lower the copper motor clips over the motor brush tabs. You may need to hold the brush tabs in with your fingers as you slide the motor clips over them.
10. Engage the rear section of the decoder under the notches in the frame.
11. To secure the decoder in the frame, insert a thin screwdriver blade between the decoder & the frame at point A indicated below and gently turn the screwdriver to push the decoder forward into the frame. Be sure to leave about 1/32" space at point B so that you have room to use a screwdriver to remove the decoder later if necessary.
12. To remove the decoder, use a thin bladed screwdriver at point B and twist to disengage the decoder by pushing it toward the rear of the frame. Once the decoder is disengaged lift it out as shown below.



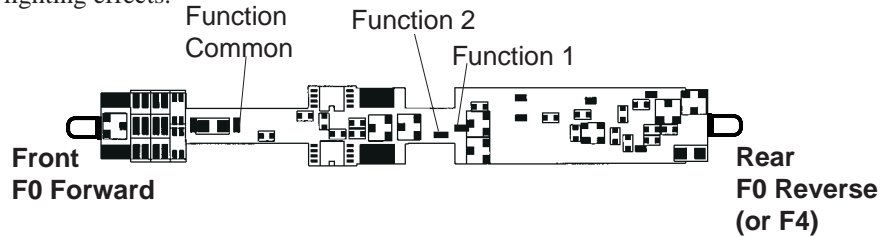
## Functions on the DN144K

DN144K comes equipped with two LED's set up as F0 forward and F0 reverse, this means that when you install the decoder your headlights will be directional.

If you wish to control these lights separately from your throttle, then you can program F0 reverse to run on F4 as an independent non-directional function.

Function 1 & Function 2 are also available on the decoder. If you wish to use these functions you will need to solder wires to the pads indicated and then run the wires to the lights or other functions you wish to control. Please check the decoder manual section on lamp wiring if you are using 1.5V lamps or LED's. Current setting resistors are needed for these applications.

All four functions can be set up with Digitrax Real FX™ functions. See your Digitrax Decoder Manual for complete instructions for setting up these special lighting effects.



Commonly Used Configuration Variables			Commonly Used Configuration Variables		
CV#	Used For	Default	CV#	Used For	Value
CV01	2-digit address	03	CV61	Directional Lights or White=F0 & Yellow=F4.	0
CV02	Start Voltage	0			1
CV03	Acceleration Rate	0	CV49-54	FX™ Effect Set ups	See Manual
CV04	Deceleration Rate	0	CV65-95	Loadable Speed Tables	See Manual
CV05	Maximum Voltage	0			
CV06	Mid Point Voltage	0			
CV29	Configuration Register	06=Advanced Mode, Analog Conversion On			
	Examples:	04=Standard Mode (14 Speed Steps), Analog Conversion On			
		07=Reversed Direction, Advanced Mode, Analog Conversion On			
		16=Enable Loadable Speed Table, Analog Conversion On			

Damaged decoders should be returned directly to Digitrax for repair. The standard repair charge is \$17. Please use the original foam packing block if you do need to ship any DN144K's for repair. NOTE: DN144K decoders with circuit boards that are broken apart are not covered by our warranty. Please follow installation instructions carefully to avoid breaking the PCB.