

## TESTING

All MRC decoders have been factory programmed with address #3, 28/128 speed steps and maximum top voltage. **Never run the installed decoder on your layout without first successfully running on test track.** Otherwise, you may damage the decoder if it is not wired correctly or if you have not properly isolated the motor, chassis and lights.

To test, place the loco on the test track. Select the "Run" mode of your DCC system and select or acquire address #3. Move up the throttle and the loco should move forward. Push the light button [F0] and the front headlight should come on. Change the direction of the loco and the loco should change direction and the rear headlight (if equipped) should come on. The loco cannot reach full speed, due to the resistor. If all above occurs, you passed the test. Congratulations!

**Do not run the loco for an extended period of time on the test track or the resistor will overheat.**

If your installed decoder does not pass the test, find the problem, correct it and test it again.

## TROUBLE SHOOTING

The MRC 0001664 N gauge decoder should perform well with all DCC systems. See your DCC system manual to learn how to program and operate the decoder. For more information about register/CVs and their functions, please refer to the NMRA DCC Standard & Recommended practices, RP-9.2.2 this is available directly from the NMRA or their website at [www.nmra.org](http://www.nmra.org).

Whenever the decoder doesn't work please use program track to re-program the loco address to factory setting. This should bring the decoder to life.

## FCC COMPLIANCE

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that cause undesired operation.

## RETURN PROCEDURE

If it should become necessary to return your decoder, remove the decoder from the loco chassis and return the decoder only. Please include a letter, [printed clearly], with your name, address, daytime phone number, and a detailed description of the problem you are experiencing. Include a \$15.00 check to cover shipping and handling.

***Warranty does not include abuse, neglect, or using this product for anything other than it's intended purpose. Warranty coverage will be handled on a case by case basis, and other charges may apply for repair/replacement of the product.***

Send the decoder to:

Model Rectifier Corporation  
Attn: Parts & Service  
80 Newfield Avenue  
Edison, NJ 08837-3817 U.S.A

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80 NEWFIELD AVENUE  
EDISON, NJ 08837-3817

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## N Gauge DCC Decoder

Item #0001664 for Kato P42, E8, E9

Thank you for purchasing our highly advanced DCC locomotive decoder. Combined with any DCC System, our new decoder makes your model railroad come to life.

- 1.0 amp capacity
- Programmable for either 2-digit (1-127) or 4-digit (1-9999) addresses
- Programmable start voltage
- Programmable acceleration rate
- Programmable deceleration rate
- Programmable top voltage
- Programmable 14, 28, 128 speed steps
- Supports advanced consisting (CV19)
- Supports programming on the main (OPS mode)
- Compatible with NMRA DCC standards
- Complies with Part 15 of FCC regulations
- Directly replaces original PC Board
- Directional headlight (F0)

## INSTALLATION

Refer to the instructions that came with your Kato P42, E8,E9 locomotive for removal of the body shell. Remove the original circuit board by very carefully removing the plastic clip and sliding the PCB out. Don't lose the clip. There are two wheel pickup contact strips. These strips must be wrapped with tape approx. 1/4 wide (as shown in figure # 2) to prevent them from touching the motor leads. Trim off some material from the plastic cradle under the motor lead area to compensate for the tape thickness. After applying the tape and trimming the plastic, reinstall the strips. before installing the new decoder, bend the spring contacts under the rear of the decoder approx 45 degrees to provide correct contact. Now, install the decoder in place of the original PCB and reinstall the plastic clip you removed earlier. Apply a strip of tape over the clip & down the chassis sides to help hold the decoder in place. Re-install the body shell. Now your loco is ready to go to work on your railroad.

Figure 1: Remove the rear LED for E8 and E9

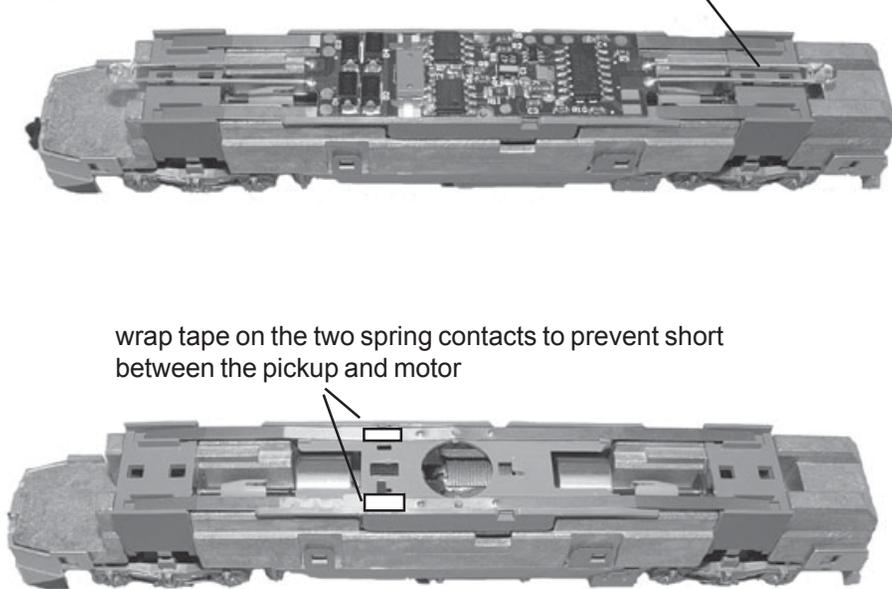


Figure 2: Kato Chassis after removing original circuit board

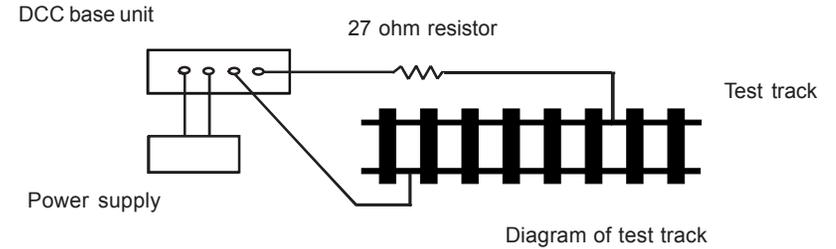
### CAUTION:

*The decoder must be isolated as shown. Apply electrical tape or plastic equiv.) tape in the areas shown to prevent the electrical contacts from touching the chassis and damaging the decoder.*

## MAKING A TEST TRACK

**When you complete the decoder installation, we strongly recommend building a test track with a 27 ohm resistor to limit current. Only test your installed decoder on the test track. The test track may prevent damage from an incorrectly installed decoder.**

Note: The program track is NOT a test track. The program track does not use a current limiting resistor. So it can't protect an incorrectly installed decoder.



## PROGRAMMING

This decoder supports all programming methods including: register, paged CV, direct CV, and programming on the main (ops mode programming).

CV	Register	Description	Range	Default
CV1	R1	Short address	1-127	3
CV2	R2	Start voltage	0-32	0
CV3	R3	Acceleration	0-32	0
CV4	R4	Deceleration	0-32	0
CV5	---	Top voltage	0-32	32
---	R6	Page number	---	---
CV29	R5	Basic configuration	---	2
CV7	R7	Manufacturer version number	---	32
CV8	R8	Manufacturer ID	---	143
CV17	---	Long address upper byte	192-231	192
CV18	---	Long address lower byte	0-255	3
CV19	---	Advanced consist address	0-127	0
CV105	---	User identification number	0-255	0
CV106	---	User identification number	0-255	0
CV125		Factory re-set	1	0