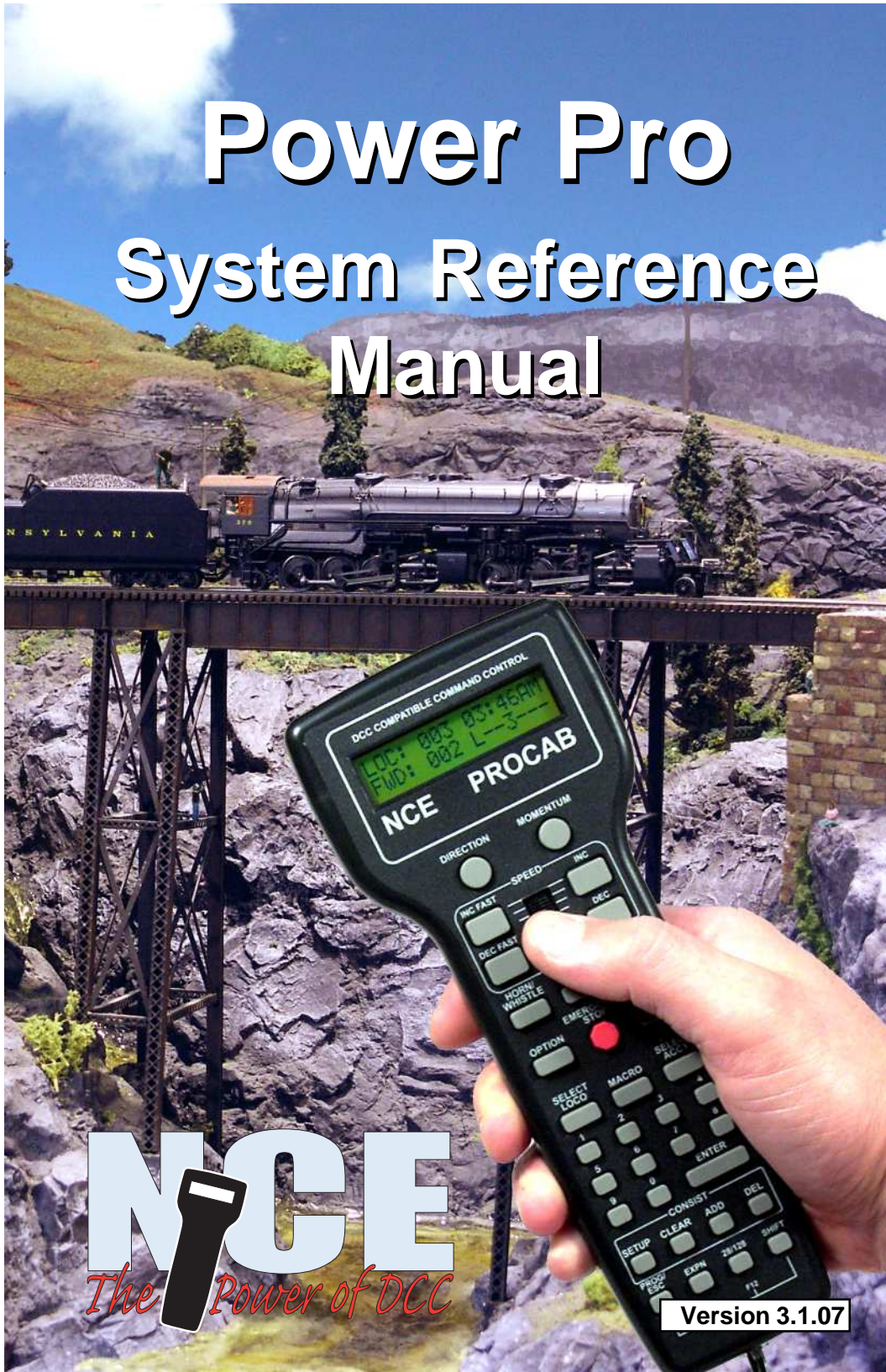
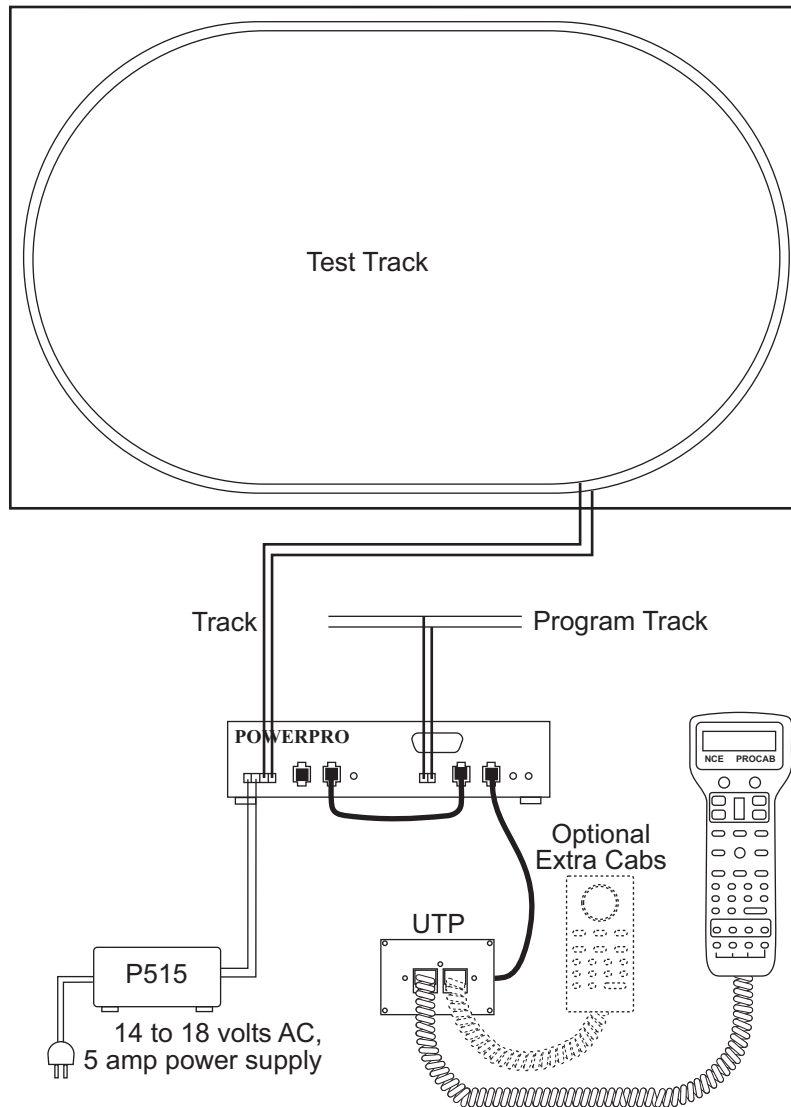


Power Pro System Reference Manual



NCE
The Power of DCC

Version 3.1.07



Basic Set Up of 5 Amp Power Pro System

BE CAREFUL

An NCE P515 power supply (15VAC - 5AMP) is the preferred transformer for your system. If you are using a different transformer be sure to measure the actual no load voltage before connecting it to your system. Many 16 Volt transformers put out 19 to 20 Volts with no load. If you have a transformer that puts out more than 18 Volts do not use it. The maximum input voltage to your Power Pro or PB105 is **18 Volts AC**. Voltages higher than 18 Volts AC will ultimately destroy your booster resulting in an expensive repair charge.

Quick Start

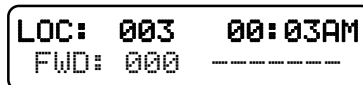
Contents of the 5 Amp Power Pro System:

- Power Pro System Box with 4 pin and 2 pin plugs
- Pro Cab
- Seven foot coiled cable
- Twelve inch flat cable
- UTP cab bus panel
- Power Pro system reference manual

We recommend that you follow the instructions below to connect your system to a small test track first. After your system is checked out completely and known to be working then consider the final installation locations for components and connections to the track.

TRYING OUT YOUR POWER PRO:

- #1 Disconnect the existing power supplies from your layout.
- #2 Connect the long (7 foot) coiled cable from the cab into the Power Pro CAB BUS socket.
- #3 Plug one end of the short (1 foot) cable into the Power Pro CONTROL BUS socket that is next to the CAB BUS socket. The other end of this wire plugs into either one of the remaining CONTROL BUS sockets. This connects the "Command Station" portion of the Power Pro to the "Power Booster" portion.
- #4 If in place, pull the 4 pin plug from its socket on the face of the Power Pro. Connect your power source to the screw terminals marked POWER. Your power source must have a voltage output within the range of 12-18 volts AC or 18-28 volts DC. Do not exceed these voltages as damage to the Power Pro is certain to result. If there is not enough voltage (under about 12VDC) the left hand STATUS light on the Power Pro will flash quickly. There will be a similar indication if the DCC signal from the command station is lost. The Power Pro is factory adjusted to put out the NMRA recommended 14.25 volts for N, HO and S scales..
- #5 Set up a test track. Obtain a length or two of flex track, or better yet, use that old circle of Atlas Snap Track you've had kicking around for years. Do NOT connect the Power Pro up to your layout at this time. We want you to test the operation of your new DCC system without the complication of troubleshooting any layout wiring, closed gaps, broken switch points, etc. Once you are confident that your new Power Pro DCC system is up and running as advertised then hook it up to the layout (after finishing the Quick Start Guide). Make sure that your layout wiring can stand a continuous 5 Amps of current. We recommend a minimum of #16 feeder bus, preferably #14 and at least #22 AWG power drops from the rails to the feeder bus. If you have a locomotive with a DCC decoder already installed connect two wires from your test track to the TRACK screw terminals of the Power Pro. Plug this connector into the Left socket.
- #6 Carefully inspect all wiring to make sure proper connections have been made. Do not permit unused decoder wires to touch each other. A piece of tape will help here.
- #7 Plug in the power source and/or turn on the power.
- #8 The display of the cab should look something like:



This is what we call the 'NORMAL DISPLAY'. The fast clock in the upper right hand corner will most likely show a different time.

The following cab buttons must be pressed in the proper sequence to acquire control of the locomotive #3 (in the above example locomotive #3 is already selected):

- a. Press **SELECT LOCO** button once.
- b. Press the "3" button once. DO NOT press 0 then 3.
- c. Press **ENTER**.

Note: By convention, all locomotive decoders have their short address set to 3 at the factory.

TIP #1 ➔ If you make a mistake while entering numbers on the cab just keep pressing more numbers until the number entry field clears, then enter the correct numbers.

TIP #2 ➔ Whenever the cab is waiting for you to enter data (a flashing black square is on the screen at the point where the numbers will go) you can press the **PROG/ESC** key to "escape" what you were doing and return to normal operation mode.

TIP #3 ➔ Whenever you have pressed a button (such as **SELECT LOCO**) and you want to keep what ever number that is already on the screen just press ENTER.

#9 To operate the locomotive, the following controls are used:

- a. The thumbwheel will increase/decrease speed. The speed control buttons that flank the thumbwheel on either side may also be used as desired to control the loco speed.
- b. Pressing the **DIRECTION** button will cause the loco direction to reverse.

CONGRATULATIONS! You are now operating one locomotive with DCC control. In most cases, less than twenty minutes has elapsed since you started reading this Quick Start Guide.

After completing your Quick Start, go to Page 8 - "Completing the Quick Start."

COMPLETING THE QUICK START

Operating one locomotive is fun — for awhile. But operating two or three locomotives is a lot more fun for a much longer time. Advancing beyond this simple DCC testing requires decoder installation into more locomotives and perhaps a few straight pieces added to your circle of track. After you have at least two locomotives with decoders we can continue with two locomotives simultaneously operating under DCC control. To accomplish this, both decoders need to be installed in their respective locomotives and at least one decoder will need to be programmed with a different address.

PROGRAMMING A LOCOMOTIVE ADDRESS

#1 The first item of business in this section is to connect a programming track. We simply use an old piece of snap track connected to the PROGRAMMING TRACK terminals of the system box.

#2 Place a locomotive with an installed decoder on the programming track.

#3 Press the **PROG** button four times to get to the programming track menu.

Your cab should read:

```
SELMODE  xx:xxPM
USE PROGRAM TRK
```

xx:xx represents the fast clock which may display any time at this point.

#4 Press **ENTER** to use the programming track and you will see:

```
PROG TRK  xx:xxPM
1=STD  2=CV  3=REG
```

NOTE: The STATUS light of the booster will flash rapidly indicating that the power booster portion of the system has turned off track power. This is due to a loss of DCC signal from the command station half of the Power Pro and is normal when using the programming track.

#5 Press "1" to use Standard programming. You will see:

```
MAIN OFF  xx:xxPM
MANUFACTURER: ___
```

After a moment the blank space after MANUFACTURER: will be filled in with "011" which is the NMRA code for NCE Corporation. All manufacturers have different codes.

If you get a CAN NOT READ CV message the decoder is not responding. Check the locomotive, decoder and programming track wiring. An older decoder that uses "paged" mode (discussed later) can take up to 15 seconds to read the values.

#6 Press **ENTER** read the version of the decoder version (this will vary depending upon which model decoders were shipped with your system).

#7 Press **ENTER** again to see:

Press **1** to set up the address.

```
ACTIVE ADR:SHORT
SETUP ADR  1=YES
```

By convention all DCC locomotive decoders are set to short address #3 at the factory. If your decoder has not had its address changed you will see a short address as the active address.

```
ACTIVE ADR:SHORT
SHORT ADR:   003
```

TIP A decoder can have 2 different addresses, the Short Address (values from 1-127) or the Long Address (sometimes called 4 digit with a range of 0000-9999). A decoder can use one or the other but not both at the same time. Some entry level decoders can only use the Short Address.

#8 Press **ENTER** to keep the current short address set to 3.

#9 Press **ENTER** again to skip activating the short address.

#10 Next you will see the Long Address (which is probably set to 0000 or sometimes to 9999). With older decoders, it may take a up to 30 seconds to read the long address.

This is the address we will change.

#11 You will likely want to enter the number on the side of the locomotive cab as the Long Address. Type in the number of the locomotive and press **ENTER**.

#12 Press **1** to activate the Long Address.

You have just changed the Long Address.

At this point, press **PROG/ESC** twice to exit the program track mode.

You have just completed the hardest part of DCC... programming the locomotive on the programming track.

By now the left status light of the booster will be glowing steadily indicating that track power has been restored. ***Put your freshly programmed locomotive back on the test track, it won't run on the programming track.***

To select the locomotive:

- a. Press **SELECT LOCO** button
- b. Press the digits corresponding to the Long Address you just programmed..
- c. Press **ENTER**

At this point you should have control of the locomotive. Now is the time to program up a second locomotive and run them both.

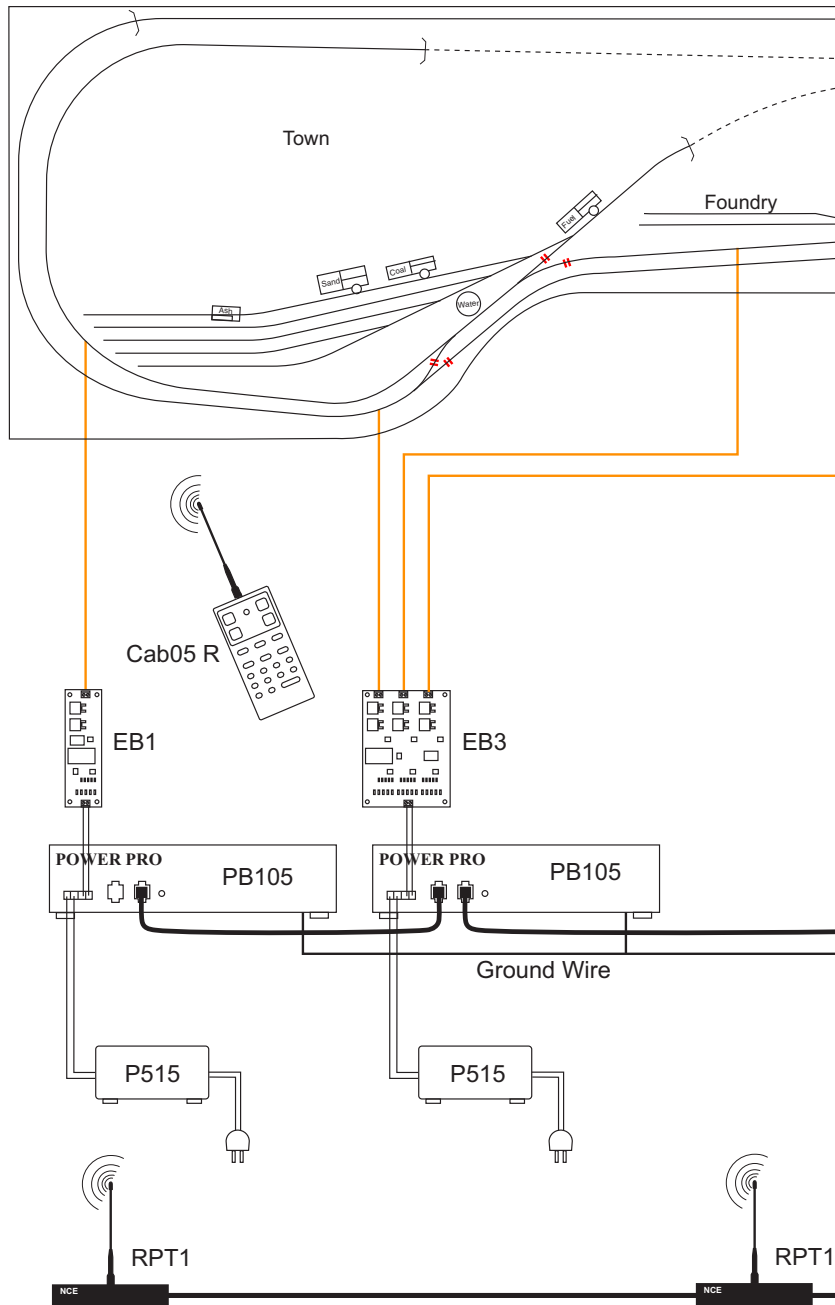
RUNNING TWO LOCOMOTIVES WITH ONE CAB

#1 Select the first locomotive you wish to run (**SELECT LOCO** followed by address then **ENTER**).

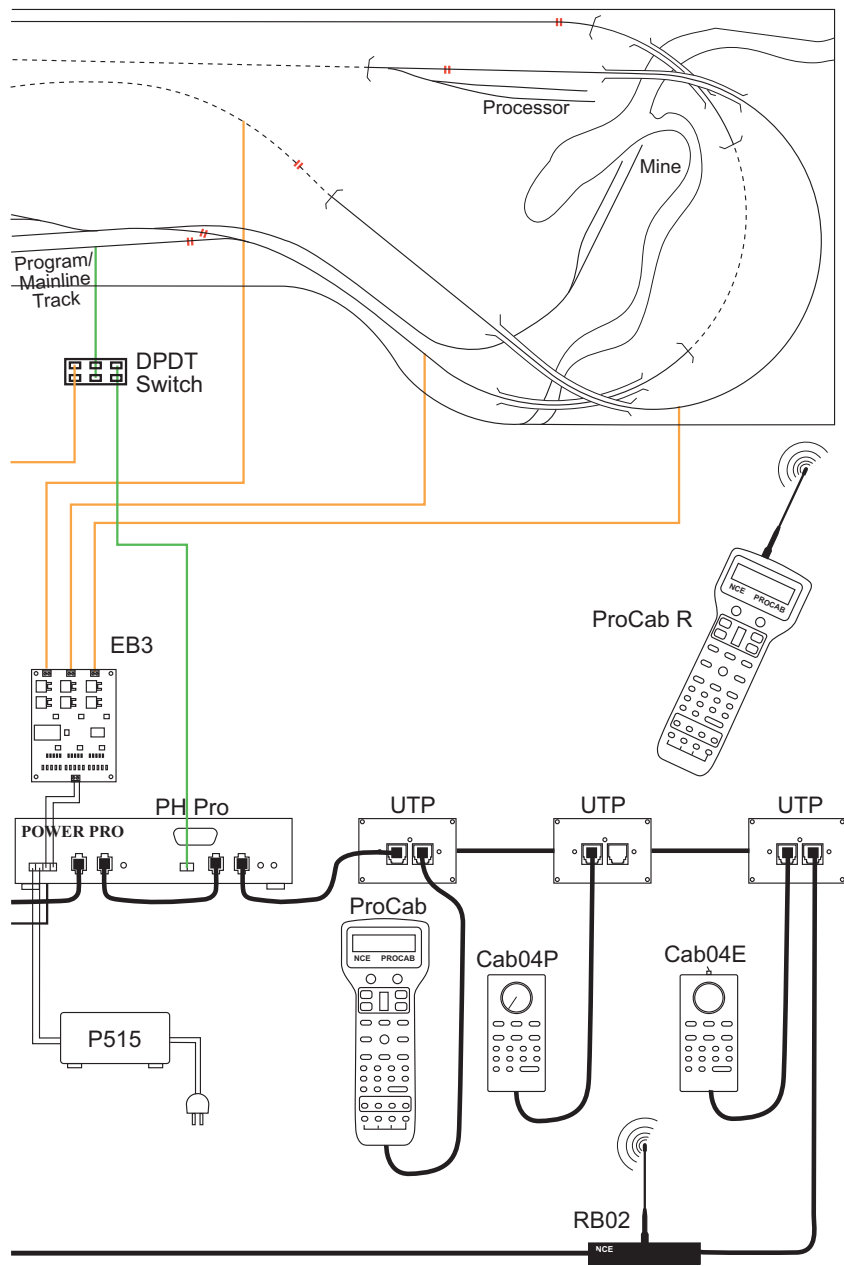
#2 Press **RECALL** to store this locomotive in one of the internal recall "slots" of the cab. The display of the cab will now show a locomotive of 000.

#3 Select the second locomotive and start running it.

#4 By pressing **RECALL** you can toggle back and forth between the two different locomotives. At any time you can select a new locomotive "over the top" of any locomotive already on the display. The existing locomotive will be forgotten by the cab with the new one taking it's place. The one in **RECALL** will remain available for recall.



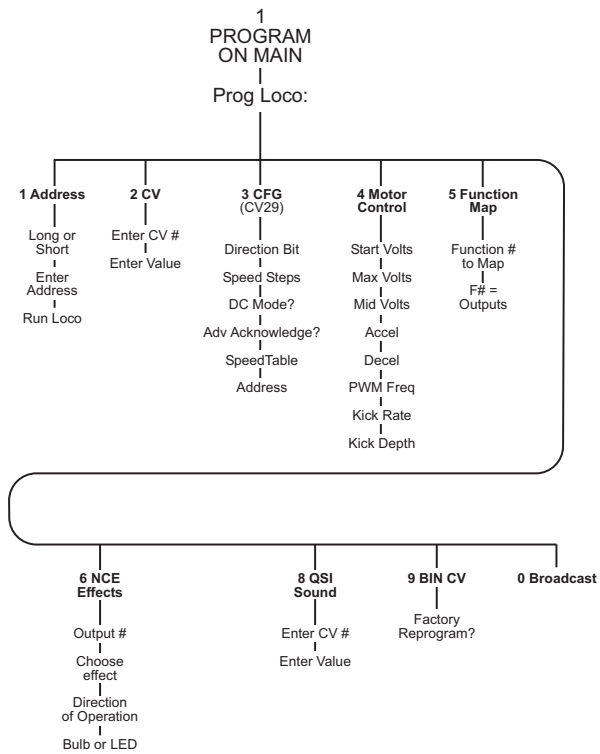
TIP: Rick Lake of St. Louis passes along this simple but quite innovative suggestion that his wife, Venita came up with. When wiring a railroad, use an old or not too special box car and paint one side red and the other side blue. You could also place a tag with a + sign on one side and a tag with a - sign on the other. This way, when dropping leads down to your track bus polarity is assured by using the indication on the box car. Why didn't WE think of that? Thanks Venita!!



Advanced Layout Wiring

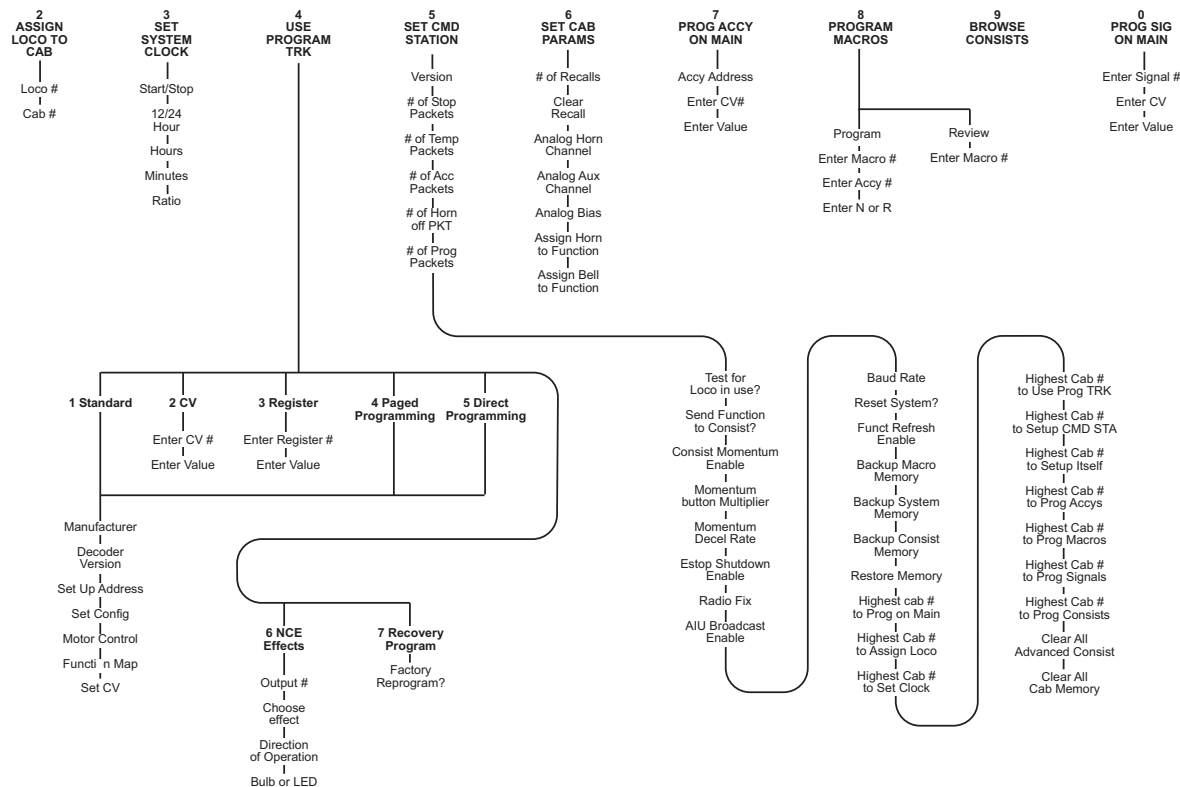
MENU NAVIGATION CHART - PT.1

Press PROG/ESC key to cycle through menu listings, then press ENTER to cycle through listing choices.



MENU NAVIGATION CHART - Part 2

Press PROG/ESC Key to cycle through menu listings, then press ENTER to cycle through listing choices





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