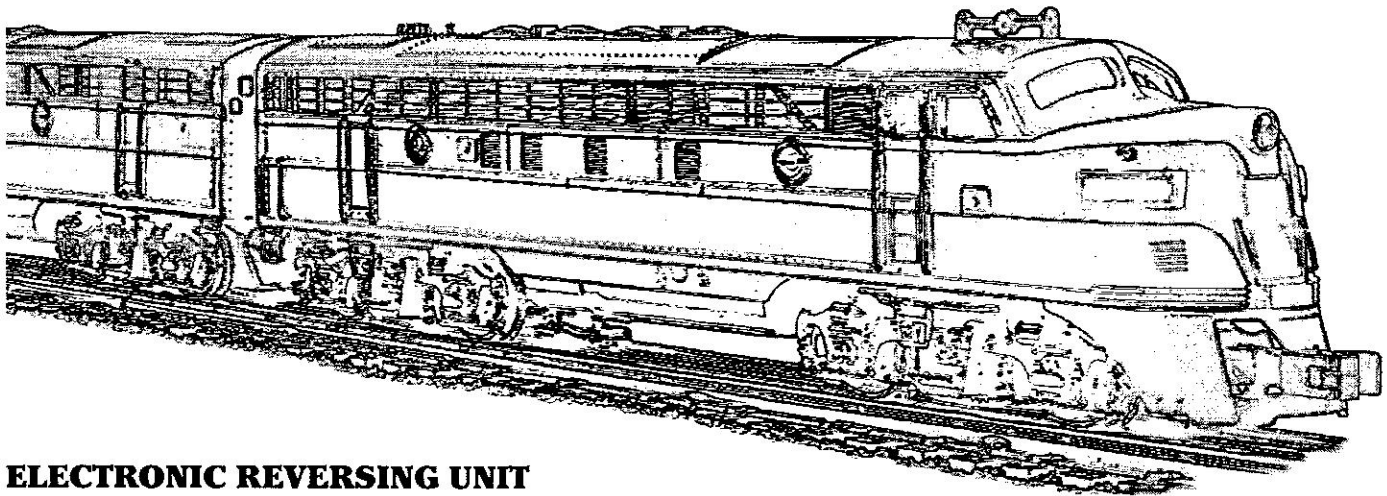


AGES 8 TO ADULT



Customer Service 1-800-866-9986

F-UNIT DIESEL LOCOMOTIVE INSTRUCTIONS



ELECTRONIC REVERSING UNIT

Your new K-LINE® locomotive features a solid-state, electronic reversing unit that utilizes an integrated circuit design. As a result, it is much more reliable than older mechanical reversing units. It operates as follows: Each time the power to the locomotive is interrupted, the mode changes position. This can be done by moving the transformer control to the off position, or pushing the direction button on the transformer (if the transformer is equipped with a direction button). The sequence of operation is forward-neutral-reverse-neutral-forward.

The engine can also be locked into any mode of operation by moving the Reversing Unit On-Off Switch to the off position. This switch is located on the underside of the locomotive chassis. When the switch is "off," the locomotive "locks" into the next mode of operation in the sequence. For instance, if the engine is moving forward, then is stopped and the switch is moved to off, the engine will be locked in neutral. Note: if the switch is moved to off while the engine is under power, it will lock into its present mode.

In addition, the K-LINE® Reversing Unit has a **forward-reset feature**. Should the locomotive remain without power for a brief time, it will automatically start in the forward direction upon being re-energized, regardless of the setting of the Reversing Unit On-Off Switch.

QUADRA-GRIP™ TRACTION SYSTEM

Your locomotive is equipped with a Quadra-Grip™ Traction System. Two of the drive wheels on each motor are fitted with rubber tires, resulting in superior pulling power. For this reason, high speed starts and sudden stops should be avoided to prevent cars from derailing. Smooth throttle control will also result in more realistic operation. K-LINE® locomotives with Quadra-Grip™ achieve maximum traction to pull heavy loads at greater speeds.

LUBRICATION

Periodically apply gear lubricant to the motor truck drive gears. The hubs should be lubricated occasionally with light machine oil. Remove any excess oil or grease, especially if it has come in contact with the traction surfaces of the wheels.

ENGINE CONFIGURATIONS

These K-LINE® Diesel Engines are sold in a variety of configurations. The most common are: two Powered "A" Units with one Powered "B" Unit, two Powered "A" Units or one Powered "A" Unit with one Powered "B" Unit.

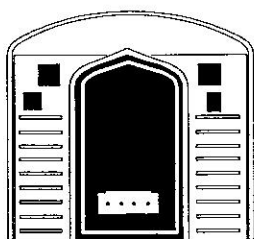
All configurations are completely functional as packaged, however, additional matching engines may be available to create other arrangements. Please follow the instructions below to ensure proper operation of the engines.

The connections between the engines allow the E-unit of the Leading "A" engine to control its two motors and the motors of any engine following (most likely the "B" Unit and the Trailing "A"). The engines were designed with six motors for superior pulling power. It is recommended that the linked units operate on 42 inch curves. See page four to modify these units to run on 31 inch curves.

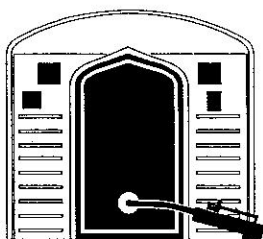
NOTE: If you are running two or more powered units, we recommend using at least a K-951 or a similarly powered transformer.

CONNECTIONS

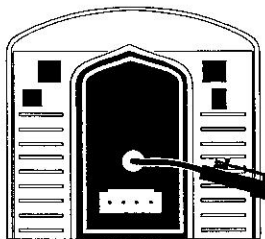
Use the following diagram of connectors to determine which engine is which. This information will allow you to link the engines properly.



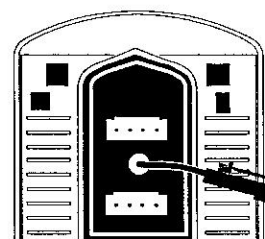
Receptacle only
Leading "A"/Rear of "B"



Plug only
Trailing "A"/Front of "B"

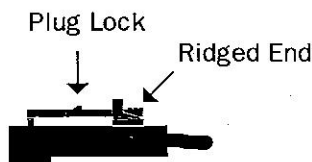


Receptacle & Plug
Bi-Modal "A"



2 Receptacles & Plug
Tri-Modal "A"

THE PLUG

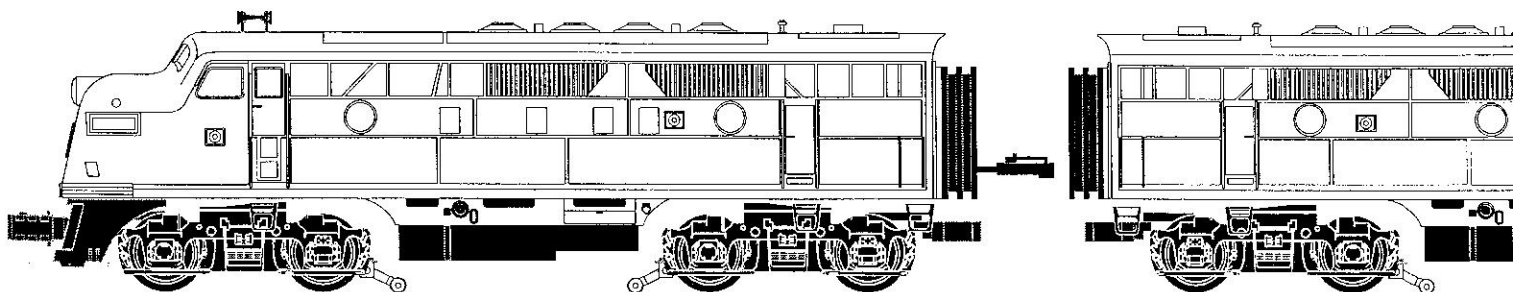


PLUG ATTACHMENT

Insert plug into receptacle until it clicks and locks into place.

PLUG RELEASE

Depress ridged end of lever with fingernail and pull gently. **Do not pull without releasing lock.**



The Common (or linked) E-Unit is designed to control three powered unit

LINKING MULTIPLE ENGINE UNITS

Linking the engines together allows the Leading "A" E-unit to control the two motors of each unit.

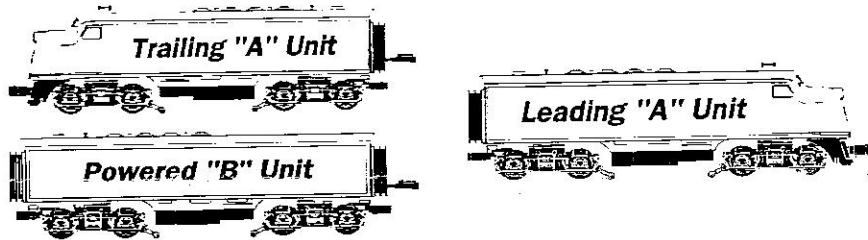
TRAILING "A" UNIT - POWERED "B" UNIT - LEADING "A" UNIT (A-B-A)

Insert the plug of the "B" Unit into Leading "A" and insert the plug of the Trailing "A" Unit into the "B" Unit to connect all engines.



TRAILING "A" UNIT OR POWERED "B" UNIT - LEADING "A" UNIT

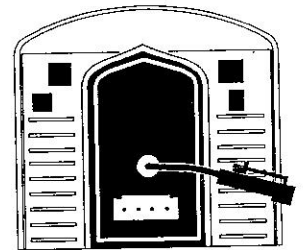
Insert the plug of the Trailing "A" Unit or Powered "B" Unit into the Leading "A" to connect the two engines.



BI-MODAL ENGINE OPERATION

A single "A" Unit (sold separately) may be a Bi-Modal "A" Unit. This means that the engine can run by itself or can be connected to an A-B pair as the Trailing "A." In this second instance, the engine functions as a Trailing Unit whose two motors are controlled by the E-Unit in the Leading "A" Unit.

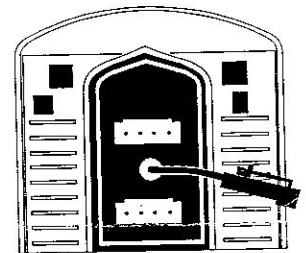
To operate the Bi-Modal Unit by itself, insert the plug into its own receptacle. This engages the E-Unit. To operate this engine as the Trailing Unit in an A-B-A, follow the instructions above.



TRI-MODAL ENGINE OPERATION

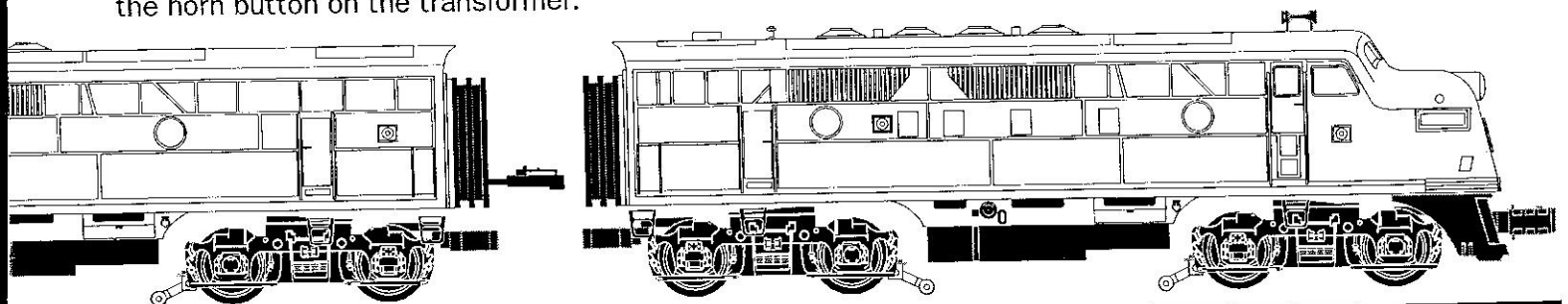
A single "A" Unit (sold separately) may be a Tri-Modal "A" Unit. This means that in addition to the functions listed above for the Bi-Modal Unit, a Tri-Modal "A" Unit can act as a Leading "A" Unit whose E-Unit can control a "B" Unit and any other "A" Unit (Trailing, Bi-Modal or Tri-Modal) that is plugged into it.

To operate the Tri-Modal Unit by itself, insert the plug into its own upper receptacle. This engages the E-Unit. To operate this engine as a Leading "A" Unit, insert the plug into its upper receptacle and plug the trailing engine into the lower receptacle.



DIESEL HORN IN "B" UNIT

The "B" Unit is equipped with an electronic diesel horn. The horn operates on track power and is controlled by the horn button on the transformer.

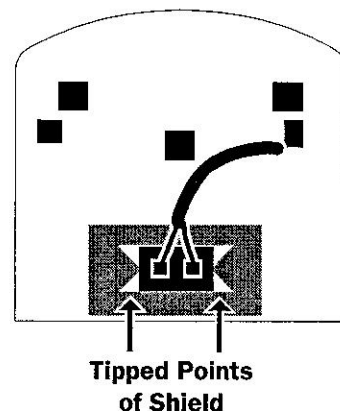


Do NOT operate more than three linked powered units (six motors total).

OPERATING THESE UNITS ON O-31 CURVES

In order to run these units on O-31 curves, the receptacle must be able to float freely between the units. To modify your units to operate on O-31 track, the **metal shield** holding the receptacle in place **must be removed**.

The shield is held in place by two tipped points. Use a small flat head screwdriver to bend one tip away from the receptacle. This will free the shield. Use tin snips to cut off the shield. This will release the receptacle and allow the two joined plugs to float freely between the units. *This modification does not void your warranty.*



LOW VOLTAGE OPERATION

The three linked locomotives (A-B-A) operate on 6-8 volts without a load. Operating at voltage this low causes the reversing unit to chatter in this configuration only. Pulling a load requires using higher voltage and the chatter disappears. Similarly, the horn does not reach its maximum volume unless the three locomotives are pulling a full load, i.e. a set of HEAVYWEIGHT® passenger cars.

LIMITED ONE YEAR WARRANTY

This item is warranted for one year from the date of purchase against defects in material and workmanship. We will repair or replace at our option, defective units without charge for parts or labor, if they are received within one year from the date of purchase. This warranty does not cover items that have been abused or damaged by careless handling. Transportation costs, if any, incurred by you are not covered by this warranty. Removing the metal shield to allow the linked engines to run on O-31 curves does not void this warranty.

E-UNITS:

The Common (or linked) E-Unit is designed to control three powered units. Operating more than three units voids this warranty.

1. Should service be required, return the defective item POST PAID to **K-LINE® Customer Service**

By the U.S. Post Office send to:

K-LINE® Customer Service
P.O. Box 2831
Chapel Hill, NC 27515

By UPS or FEDEX send to:

K-LINE® Customer Service
Route 3, Dodsons Crossroads
Hillsborough, NC 27278

For warranty repairs, be sure to include a copy of your sales receipt or other form of proof of purchase to verify that the item qualifies for complete service at no charge.

2. **CAUTION:** Make sure the item is well packed to prevent damage to the item. We recommend that the package be insured.

3. Please make sure that all instructions were followed carefully before returning any merchandise for service.

For questions call **1-800-866-9986**.

