"MUDHEN"

DENVER & RIO GRANDE WESTERN
K-27 "MUDHEN"

Thank you for selecting ACCUCRAFT TRAINS for your large scale modeling. Your new K-27 is an accurate model of one of the more famous narrow gauge locomotives to run in the American West, and with a bit of care this museum quality model should give you many years of enjoyment.

Technical Specifications

Scale/Gauge:	1/20.3, 45 mm Gauge
Total Weight:	10.9 kg, 24 lb.
Length:	889 mm, 35 in.
Width:	152 mm, 6 in.
Height:	197 mm, 7 3/4 in.
Power:	0v-19v DC
Recommended radius: *	46 1/4" (117.5 cm [LGB 1600])
Recommended clearance: *	3" from rail

* This model will just pass through a 30 1/8" (76.5cm [LGB 1500]) radius curve, but the larger (46 1/4") radius is recommended for more reliable operation. Also be sure to leave at least 3" clearance (measured from the inner rail) on the 46 1/4" radius curve to allow for overhang.

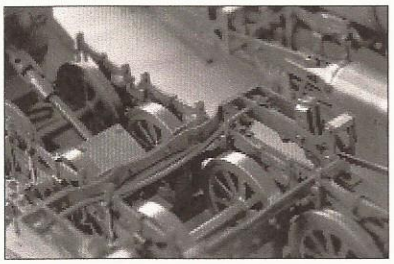
Prototype information

K-27 number 463 was delivered to the D&RG Railroad in 1902 and was one of fifteen K-27's purchased to take over from the overworked C-70 (C-19) class and finally conquer Marshall Pass. When originally delivered, all locomotives were of the complicated Vauclain Compound type, but soon all were built to simple engines with slide valves. Later eleven of these locomotives were rebuilt once again, this time to piston valve types. Seven had their valves built outboard, and four had their valves built inboard of the cylinders, which accounts for the "tops out" or "tops in" shape of cylinders on most of the K-27 types. The remaining four locomotives were scrapped with their slide valves still in place.

The K-27 enjoys a particular place in history, for it was the first of the larger locomotive types to run on any American narrow gauge railroad. Affectionately called "Mudhens" by the railroaders, for twenty years they were the heaviest power on the D&RG narrow gauge until the advent of the K-28 in 1923.

Accucraft's number 463 is representative of the seven outboard or "tops out" type of locomotives, (452, 453, 455, 459, 462, 463, and 464) and happily this very locomotive is still in use on the Cumbres and Toltec Scenic Railway in Chama, New Mexico. Our model should also please Rio Grande Southern fans. With a change in lettering, it is correct for number 455, as it ran on the RGS from 1939 to 1943.

MODEL FEATURES AND HANDLING



This accurately detailed model is constructed of brass and stainless steel. A large Pittman gearhead motor powers all eight drivers through a metal gear box and the side rods. The museum quality finish and lettering represents this locomotive as it would have looked in the early 1940's.

Your Accucraft K-27 is ready for installation of a DCC decoder. There is a factory-installed jumper at the lower rear of the firebox that is pre-wired to the motor and lights. You may easily connect a DCC decoder at this point.

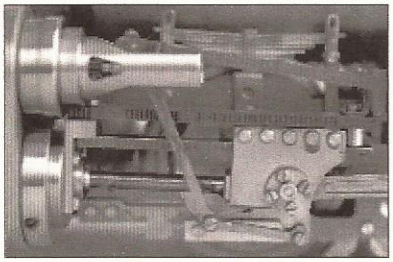
An exclusive feature of this large model is the "expandable" wireless drawbar. When the locomotive is on straight track the drawbar will keep the tender closely coupled, however it will automatically allow this close coupling to expand when the locomotive is on a curve.

Your K-27 comes with Accucraft's new scale couplers. These operate much the same as the prototype, and they are scaled from D&RGW photos and drawings. They can be activated, as is the prototype, from both the top and the bottom of the coupler.

Disassembly of this large and complex model is not recommended. However, if absolutely necessary, the 2mm hex bolts and nuts can be turned with a nut driver sized for US 00-90.

Unlike the prototype, the center two sets of drivers are blind to enable this large model to negotiate a radius of 46 1/4". However, Accucraft has made available flanged replacement driver sets for the enthusiast who wishes to have a locomotive with prototypically correct flanged center drivers. Please bear in mind, that with all drivers flanged, it will take a very radius to turn this model. Please contact your Accucraft dealer for these driver sets.

Please take care in lifting this large and heavy model. It is recommended that the locomotive be picked up by the pilot and the opening in the rear of the cab only.



Tools needed for maintenance

- 1.5 mm allen wrench
- 2 mm & 3 mm hex wrench
- Flat head screw driver

Lubrication

With a bit of care, your Accucraft K-27 should give you many years of pleasure and reliable service. Lubrication is of prime importance on a model of this type with so many moving parts.

Always use quality lubricants. This should not be a problem, for there are many modern lubricants available in hobby and sport shops. Light oil such as Labelle #108 or Hoppe's Gun Oil will do a good job on lubricating most of the moving parts. For pistons and slides, a heavier lubricant such as Labelle #102 would suffice. For gears use a gear grease such as Permatex Super Lube or another hobby gear lubricant.

To access the many moving parts of this model it is best to carefully place it on its side on a soft towel or foam sheet. A drop of light oil on every moving part is necessary, and there are many on this locomotive. Be sure to lubricate all the crank pins, crosshead slides, piston rods, etc.. that you can see. Be sure to lubricate the tender axles journals as well. Do not over lubricate, for excess oil only picks up unwanted dirt.

Use an oil that is a bit heavier to lubricate the axle bushings and pivot points of the lead and trailing trucks.

The main gear box is lubricated in the factory, and will not need any attention when you first run your model. However, in time, you should make sure that the gears are well lubricated with a technical gear grease. The gear box cover is held on with screws, and removing it will allow you to access all the gears and bushings that need lubrication. Take note of how the cover came off and replace if exactly the way it was when you started.

THIS LUBRICATION SHOULD BE REPEATED EVERY 25 HOURS OF OPERATION!

OPERATION

After following the recommended lubrication procedures your K-27 is ready to provide many years of reliable operation. We recommend that you use a D.C power supply with a capacity of 2.5 amps or larger.

Electrical pickup

Your K-27 is powered by track voltage; on the locomotive it is picked up by the right side drivers, on the tender it is picked up by the left side wheels. This means that the two pieces are of different polarities, and they will short out if they come in contact. The drawbar is insulated and allows the two pieces to run together. A constant lighting unit is installed in the locomotive, and it provides 6V for the front headlight. The lighting unit my be accessed through the smoke box door.

Smoke unit (not included)

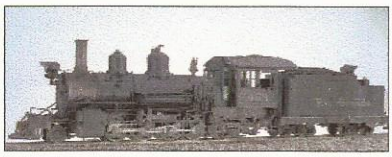
A smoke unit may be installed in the barrel of the smokestack. Connect the wires to the wires that connect the lighting unit inside the front of the smoke box. The lighting unit is connected to the main wiring via push on connector. An on-off switch should be installed to enable the unit to be turned off when not in use or when there is no fluid in the unit. The smoke unit will burn out if left on without fluid. Access to the wiring is inside the smoke box door.

Sound installation (if not factory installed)

Installing a sound system in the K-27 tender is quite easy. Two pieces of the tender are designed to be easily removed; the front coal board will slide up to allow access, and the entire coal load can be removed as a unit, essentially opening the entire top of the tender.

A generous speaker hole can be found on the tender floor and track pick-ups for your system's power are installed on the trucks. The tender water hatch is operable with two holes. Your system's power and/or volume switches can be mounted inside the water hatch.

If your system uses a synchronizing pulse for the chuff, we suggest placing two magnets 180' apart on one of the tender axles. This will give you a synchronized chuff that is very



close to the prototype's four chuffs per locomotive driver revolution.

Phoenix Sound Systems and Sierra Sound provide sound units for this K-27. Please contact them for any additional installation directions.

DCC installation

Installation of a DCC decoder or other custom feature is easy to accomplish on your K-27. Under the rear of the locomotive and just in front of the tender drawbar is a terminal block. This block will allow you to easily interrupt the motor and light power leads, and also serve as an on-board source for track power.

General maintenance

Clean the exterior surfaces of your locomotive with a clean, soft and lint free cloth. To remove stubborn soil or greasy spots from the painted surfaces use alcohol on a soft, lint free cloth.