SP NG “LITTLE GIANT” GE 50 TON DIESEL

At Laws on first day of service on SP NG

“Tiger Stripe” paint scheme

“Bloody Nose” paint scheme

THE “LITTLE GIANT” – SOUTHERN PACIFIC NARROW GAUGE #1

HISTORY:

The Southern Pacific acquired the Carson & Colorado Railroad in 1900. This three-foot gauge railroad ran from Carson City, Nevada to Keeler, California in the Mojave Desert. In 1954, SP brought engine X-1, a GE 50 ton diesel (GE build number 32226) with a 450 HP Caterpillar diesel engine and “narrow-gauged” standard-gauge trucks, to the desert to replace the three remaining already aged 4-6-0 steam locomotives. Originally delivered and operated in the SF “tiger stripe” paint scheme, the loco was later re-painted in the “bloody nose” red and gray colors. The X-1 continued to operate on the narrow gauge until the end of operations in 1960. Sold by SP in April of 1961, eventually going to a mining company in Sonora, Mexico, where it is reported it was converted to standard gauge in the late 1970’s.

GENERAL – READ FIRST:

- This kit consists of the 3D printed plastic parts ONLY. These parts are NOT as strong or flexible as the “engineering” plastics many of you will be used to in railway models. HANDLE THE PARTS CAREFULLY TO AVOID BREAKAGE. Wash the parts in isopropyl alcohol aided by a moderately stiff bristle brush. Very thin parts of the kit can be strengthened by applying very small droplets of CA adhesive with the tip of a pin or needle to the back of the thin area after the parts dry. If you break a part, glue the pieces back together with CA adhesive. Spray paint the parts on the sprues to aid in seeing the surface detail and facilitate cleaning out holes and slots.
- Use a thin razor saw (such as Micro Mark 85853) to remove small parts from a sprue or tree. Hold the sprue next to the location of the cut with needle nose pliers.
- The parts are designed for assembly using screws or glue, as described in the step-by-step instructions. Soldering is necessary for the electrical connections.
- The Rokuhan Z-scale drive components include a 9V-rated motor. As with other Z-scale equipment, do not exceed 10VDC in normal operations.
- The kit is designed with separate parts for the cab rear wall and the nose of the hood to facilitate painting in the as-delivered SP “tiger stripe” paint scheme. If the builder is planning to use a single color paint scheme, it is recommended these parts be glued in place at the same time the other body components are assembled.
- This kit is not intended for use by novice modelers, or individuals under the age of 18 without the supervision of an adult. Additionally, the modeler assumes all liability regarding the proper use of this product or any product suggested. The user must become familiar with the kit instructions, and instructions on any product used to complete this kit. Please read and follow all safety procedures for all products used to finish this kit including on all paint, chemical blackener, and adhesive containers.
- Before you start construction, make the following selections:
  - Lights (See instructions section on installing lighting.)
  - DC or DCC (See decoder manufacturer’s instructions for installing the DCC decoder.)

THESE INSTRUCTIONS HAVE BEEN EDITED FROM INSTRUCTIONS INCLUDED WITH THE FULL KIT FOR USE WITH THE 3D RESIN PRINTS SHOWN IN “PARTS DESCRIPTION” ON PAGE 2. THE MODEL BUILDER WILL NEED TO OBTAIN COUPLERS, SCREWS, ROKUHAN CHASSIS, LED LAMPS, RESISTORS, ELECTRICAL WIRING, BRASS WIRE, PAINTS, DECALS AND OTHER MATERIALS TO COMPLETE CONSTRUCTION.

Tools & Materials:

- ☐ Small drills: #80, #76
- ☐ Small files - Micro Mark #83180
- ☐ Sanding “sticks”
- ☐ Model building knife – Xacto or equal, with #11 blades
- ☐ Fingernail clippers or Xuron flush rail cutter
- ☐ Small screwdriver
- ☐ Tweezers and smooth-jawed needle-nose pliers
- ☐ Small smooth-jawed vice
- ☐ Small clips (“Micro Toothless Alligator Test Clip” – Amazon)
- ☐ Soldering iron & solder
- ☐ Couplers: MTL #002 02 021 (905) body mount couplers
- ☐ Magnification such as Optivisor or Edroy Opticaid
- ☐ Liquid electrical insulation
- ☐ Razor saw – Micro Mark #85853
- ☐ Birchwood Casey Brass Black
- ☐ Glues – CA, two-part epoxy, and silicone adhesive
- ☐ Paint brushes and air-brush
- ☐ Vallejo Acrylic Satin Clear
- ☐ Paints: Vallejo Black Acrylic Polyurethane Primer; Vallejo Air Aluminum
- ☐ Pacer Canopy Glue or Microscale Micro Glaze or Testor’s Model Master 8876C Clear Parts Cement and Window Maker
- ☐ 00-90 flat-head screws

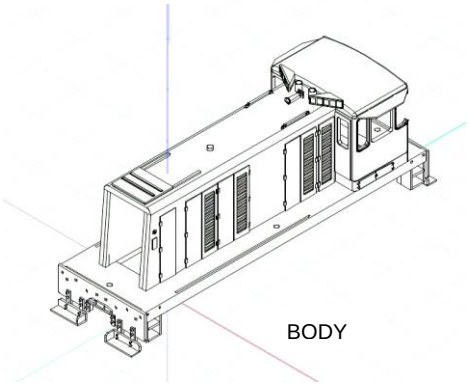
Optional:

- ☐ Engineer & Fireman figures - LaBelle
- ☐ DCC Decoder – ESU Lok Pilot Nano Standard – SB4DCC.com
- ☐ Decals: Microscale 60-71 – N Scale Southern Pacific Diesel Switchers (1948-1958 Tiger Stripe Scheme
- ☐ Microscale decal softening and setting solutions

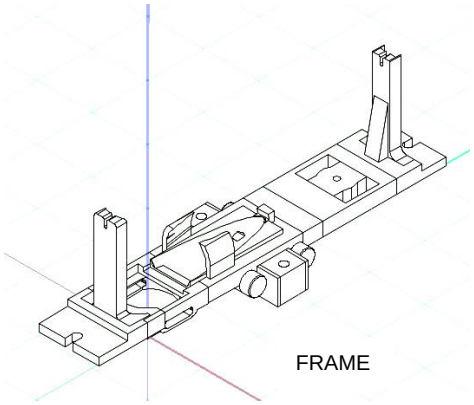
SP NG “LITTLE GIANT” GE 50 TON DIESEL

Parts Identification

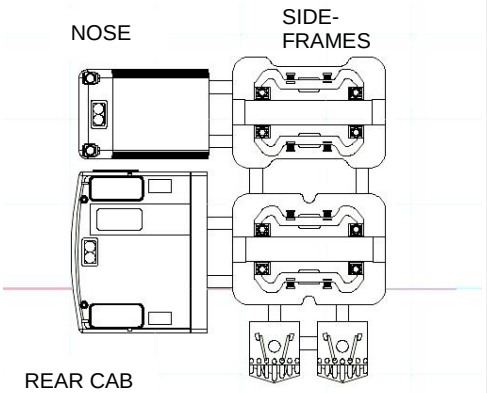
3D Printed Parts:



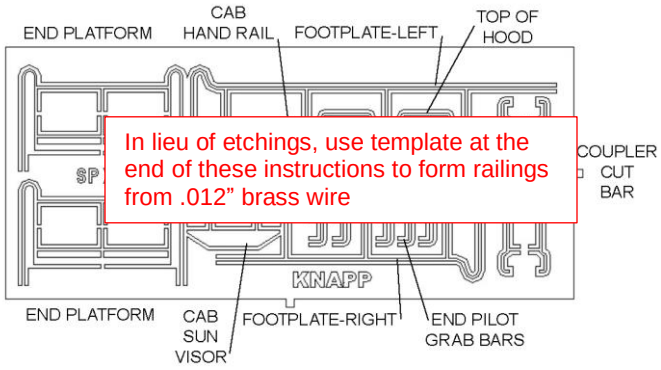
BODY



FRAME

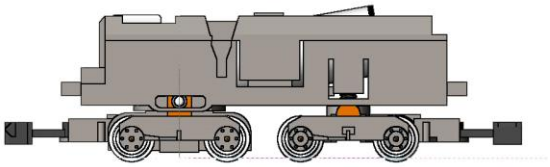


Etchings (NOT INCLUDED):



In lieu of etchings, use template at the end of these instructions to form railings from .012” brass wire

Power Unit (NOT INCLUDED):



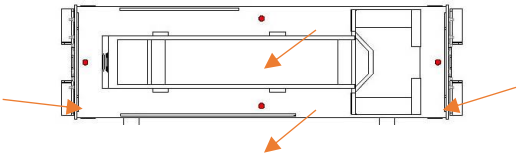
Rokuhan SA002-1 Powered Motor Chassis B Type

Parts Preparation

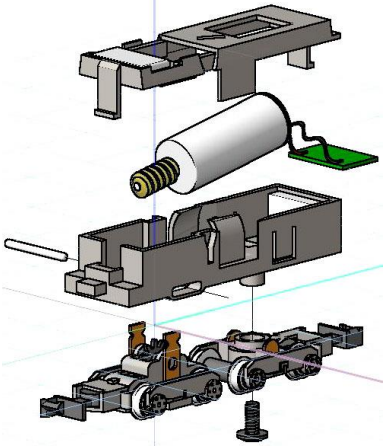
3D Printed Parts:

- Clean parts while on sprues with isopropyl alcohol and a stiff brush, working carefully to not break parts; an ultrasonic jewelry cleaner is recommended.
- Let parts dry, then airbrush one coat on all sides while still on sprues with Vallejo Black Acrylic Polyurethane Primer (70.602); let parts dry 24 hours.
- Cut parts from sprues carefully using razor saw as needed for assembly.

Preparation:
File off the tabs which connected parts to the sprue. Examine and drill out any obstructed holes the appropriate size bit. Tap four holes shown below with 00-90 tap. File any remains of sprue attachments flush with casting and then touch-up with Vallejo Black Acrylic Polyurethane Primer..



Rokuhan Shorty:

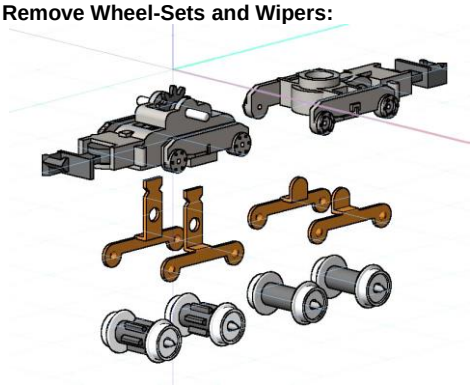


- Depress tongues on both ends of top and remove top.
- Snap out motor and PC board; cut or unsolder wiring from PC board.
- Remove shaft holding front truck in place and remove truck; slide shaft back unto holes in truck to retain gear and set truck aside.
- Remove screw retaining rear truck and set truck and screw aside.

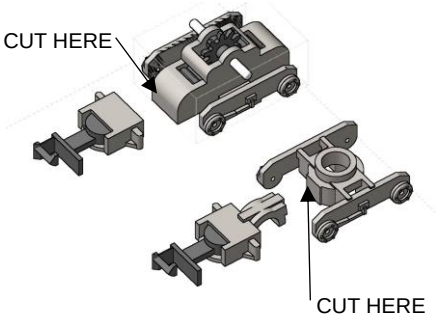
Etchings: Cut the etched parts from the etching fret and file the tabs which held the parts in the fret smooth. Blacken the etched parts in Birchwood Casey Brass Black or equivalent; 90 seconds immersion works for the Birchwood Casey product – test if using other chemical blackeners. (Follow cautions noted on package when using chemical blackeners.)

Rokuhan Trucks Modifications

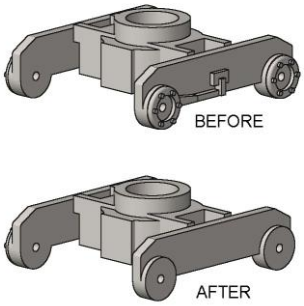
Remove Wheel-Sets and Wipers:



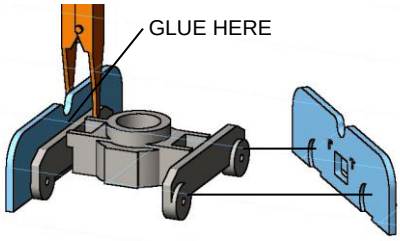
Remove Couplers:



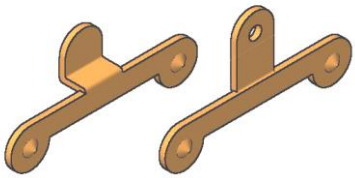
File or Sand Detail Off Side-Frame:



Attach New Side-frames:
Hold new side-frames in place using the small smooth-jawed clips and apply a drop of CA glue to the joint from the back.

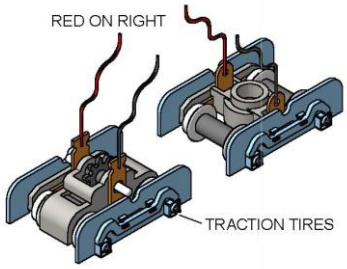


Modify Rear Truck Wipers:



Flatten wipers and drill with #70 or #76 drill

Re-assemble Trucks:

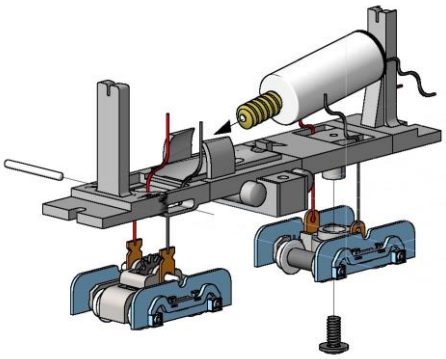


Solder wire leads to wipers, install in trucks, then install wheel sets, making sure to install set with traction tires as axle no. 2

Chassis Assembly

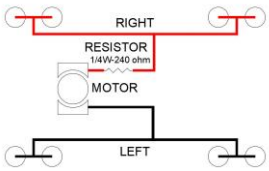
Carefully cut the frame from the sprues and file off the tabs which connected it to the sprue. Proceed with assembly as shown below:

Basic Assembly:



- Snake wire leads from trucks up through frame and attach trucks using pin for front truck and screw for rear truck.
- Slide motor into frame – do not SNAP into frame; if you break the wings which hold the motor, glue back in place.
- Attach test leads to motor and verify the gears mesh correctly; add paper shims if necessary
- Apply a drop of CA or silicone adhesive to motor where it fits between the wings.

Electrical - Basic:
For simple DC operation without lighting, simply connect the red wires from the right side together and the black wires from the left side together. Bundle wiring in cab area. If you want to “speed match” the loco and reduce the tendency to “jack rabbit start” you can add the 240 Ohm resistors as shown below.



Test run (with weight) to check wiring is correct.

Electrical – Adding Headlights:

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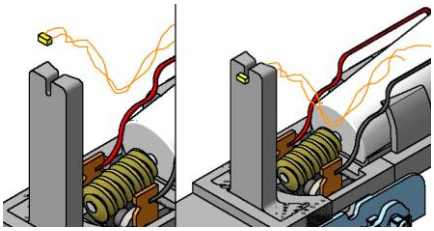
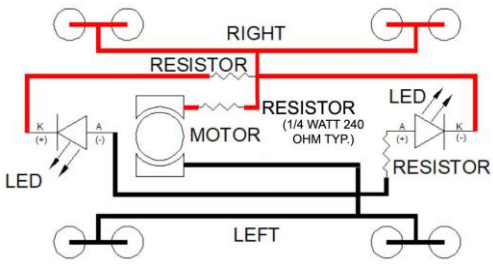
Solder a resistor to the + (long) lead of each LED, and wire to red and black wires as shown in wiring diagram (right). Verify front-vs-rear orientation then glue LEDs into receptacles at each end of loco frame with silicone adhesive and run wires to cab area.

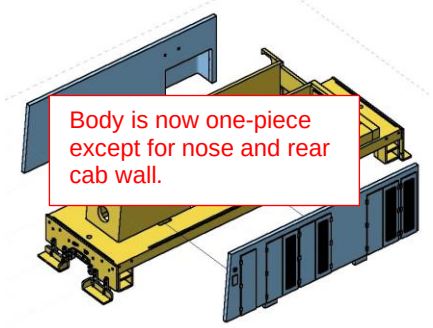




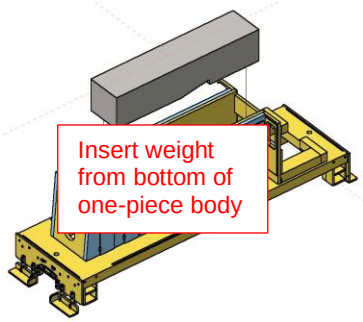
Test run (with weight) to check wiring is correct.

Body Assembly

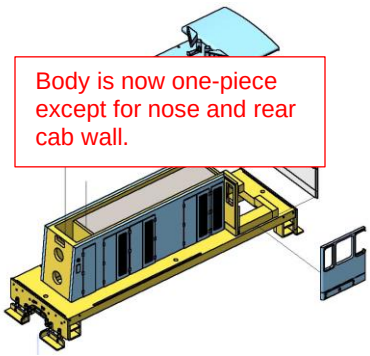
Assembly – Step 1:
Attach the hood sides to the body core holding tightly in place with smooth jawed alligator clips while drops of CA are placed in the circular openings in the core and allowed to seep into joint by capillary action. If hood side tabs extend beyond slot in footplate, file or sand flush.



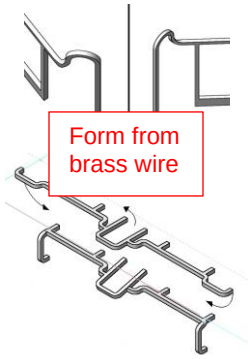
Assembly – Step 2:
Insert a metal weight (not included) into the hood snug to the two “shelves” inside the hood. Test fit to assure weight clears motor.



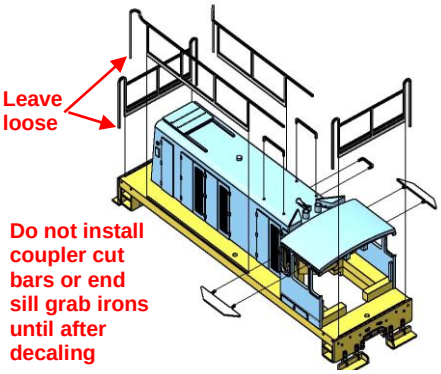
Assembly – Step 4:
Glue cab sides, roof and top of hood in place; use cab rear wall to aid in alignment BUT DO NOT GLUE REAR CAB WALL IN PLACE AT THIS TIME.



Assembly – Step 4:
Bend loop at top of vertical handrail as shown and as seen in prototype photos.

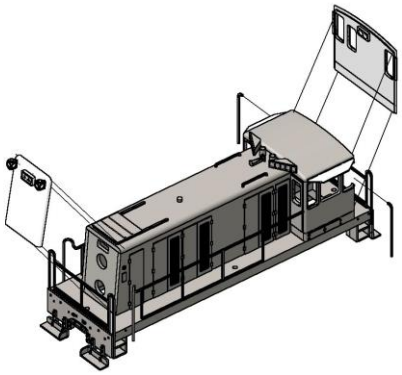


Assembly – Step 5:
Glue railings in place as shown below. DO NOT BEND AND INSERT ENDS; these will be trimmed, bent and inserted after decaling

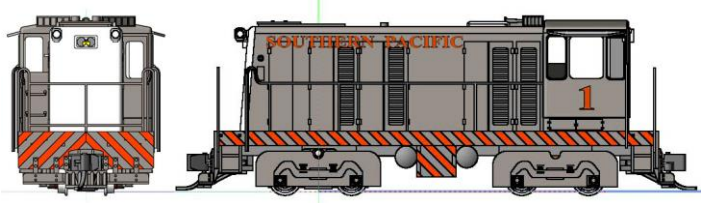


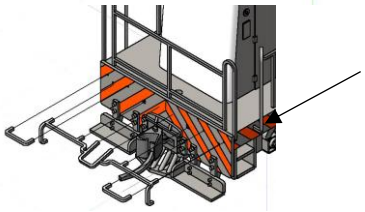
Assembly – Step 6:

Airbrush assembled body with an additional coat of Vallejo Black Acrylic Polyurethane Primer. Airbrush nose and cab rear with Vallejo Air Aluminum. Let parts dry 24 hours. If adding crew, glue figures to inside of cab walls with silicone adhesive. If desired, glue paper control panel onto cab “dashboard”. Glue nose and rear cab wall in place. Glue handrail into hole at edge of rear cab



Assembly – Step 7:
Apply decals to both body and frame as shown below, set with Microset decal softening and setting solutions. After decals have thoroughly dried, spray body with Vallejo Satin Acrylic and let dry for 24 hours. When dry, poke holes through where handrails, grab irons & coupler cut bars attach and bend and glue these ends in place. Add the two handrails at the back edges of the cab. Paint railings white where shown in photos. “Glaze” cab windows and headlights with clear glazing solution.

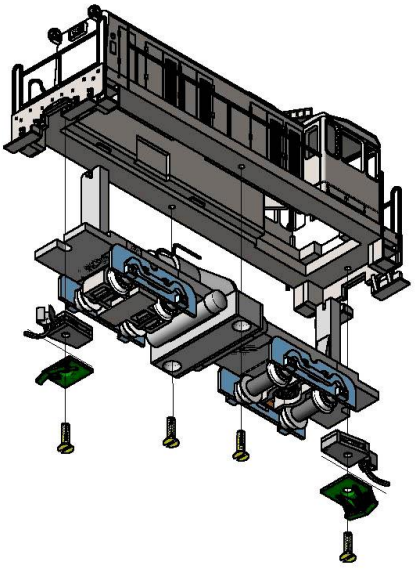


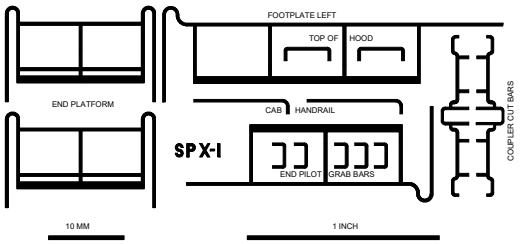


Trim ends of handrails about 1mm below hole in footplate, bend 90°, insert in hole and fix with a small drop of CA adhesive.

Assembly – Step 8:

Carefully insert frame up into body, making sure wiring is not pinched between, and gathering wiring, diodes and resistors into cab area. Fix frame in place with a 00-90 screw up into footplate on each side of locomotive. Insert a 00-90 screw through pilot, coupler box and frame and screw into end platform making sure coupler box is held between locating tabs on top of pilot and bottom of frame.





RAILING TEMPLATE