

#1 1:29
Gauge SCALE



TRAIN SET

INSTRUCTION MANUAL

28100-01

ART-28100 SERIES PASSENGER SET

0-4-0T STEAM LOCOMOTIVE

CURVE TRACKS (12)

SIERRA PASSENGER COACH CAR

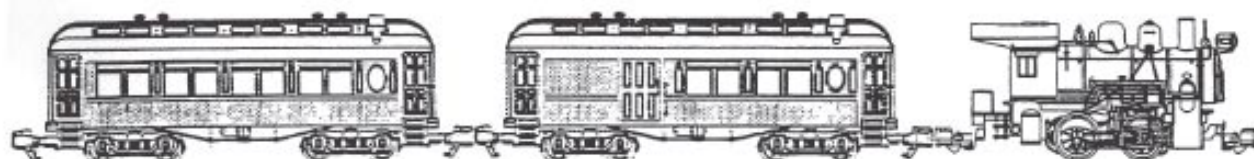
POWER PACK - 1.8 AMP DC

SIERRA PASSENGER COMBINE CAR

TRACK TO PACK

CONNECTOR WIRE

ARISTO - CRAFT TRAINS



082494 NEW

Dear Model Railroader,

This train set is highly detailed #1 Gauge 1/29th scale, and is suitable for both indoor and outdoor operation. It has been designed and manufactured to our usual high specifications. Please read this manual thoroughly before operation.

Should you have any questions regarding operation, proper usage or maintenance required on this or any other Aristo-Craft product, please do not hesitate to contact us at the following address:

ARISTO-CRAFT TRAINS / Polk's Modelcraft Hobbies, Inc.

Aristo-Craft Trains
698 South 21st Street
Irvington, NJ 07111

Phone: 973-351-9800
Fax: 973-351-9700
email: aristo@mindspring.com

Our customer service department phones are open from 10:00 AM to 5:00 PM Eastern time, Monday through Friday.

This set is extremely easy to set up and operate. After unpacking all of the components, follow these simple steps:

1. All ARISTO-CRAFT curved and straight track sections have four (4) screws in the bottom which secure the rail to the ties. In order to convert an ordinary section of track into a "Terminal Track" which conducts electric power to the rails, merely remove both screws at one end, insert the screws through the eyes of the TRACK TO PACK CONNECTOR WIRE and reattach the screws (See Fig. 1).
2. Join all twelve (12) curved track sections together (Fig. 2) to form a circle. If desired, each may be permanently attached to the adjoining section by inserting the small locking screw through the slot in the rail joiner into the hole in the rail and tightened (Fig. 3). These screws are stored underneath, in the hollow of one of the ties and encased in paraffin. If you do not wish to permanently join the track at this time, do not use the locking screws, but secure the sections together by using the provided plastic Tie Wraps. These Tie Wraps are inserted through the slot in the last tie and tightened. Please note that

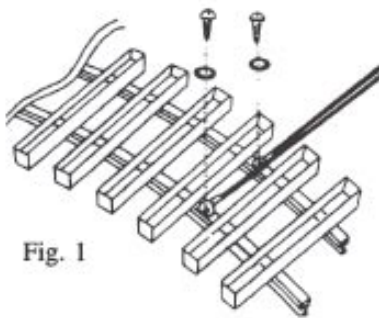


Fig. 1



Fig. 2

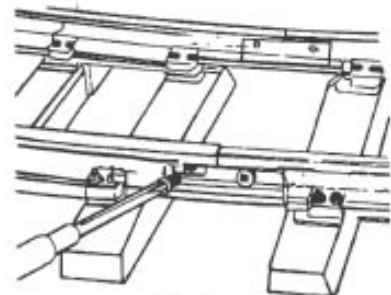


Fig. 3

there is a notch on the bottom of this tie into which the Tie Wrap lies so that the track will lie flat (Fig. 4).

3. Connect the TRACK TO PACK CONNECTOR WIRE leads to the two (2) DC terminals at the back of the power pack by depressing the thumb tab at the bottom of the terminal and slipping the bare portion of the wire into the hole above the thumb tab. Insert one wire in each of the DC terminals. It does not matter which wire is connected to either terminal.
4. Place the locomotive and cars on the track and couple them together. Each of the knuckle couplers may be opened by pressing up on the small tab under the coupler. To lock the couplers, simply push them together.
5. Finally plug the power pack into any standard 120 V wall outlet. A green light will come on indicating that you have power. Rotate the speed control (large knob) to start the train. If the train runs backward, merely move the directional switch on the right of the power pack to the opposite side and the direction of travel of the train will reverse.

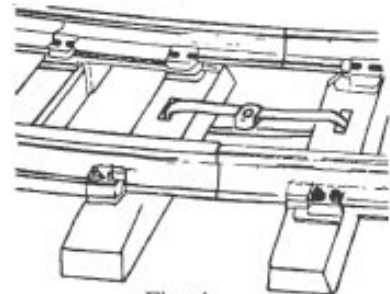


Fig. 4

At this time your train is operational. We have prepared detailed instruction manuals for each of the operating components included in this set. These manuals are included here and we urge you to read them before operating the set.

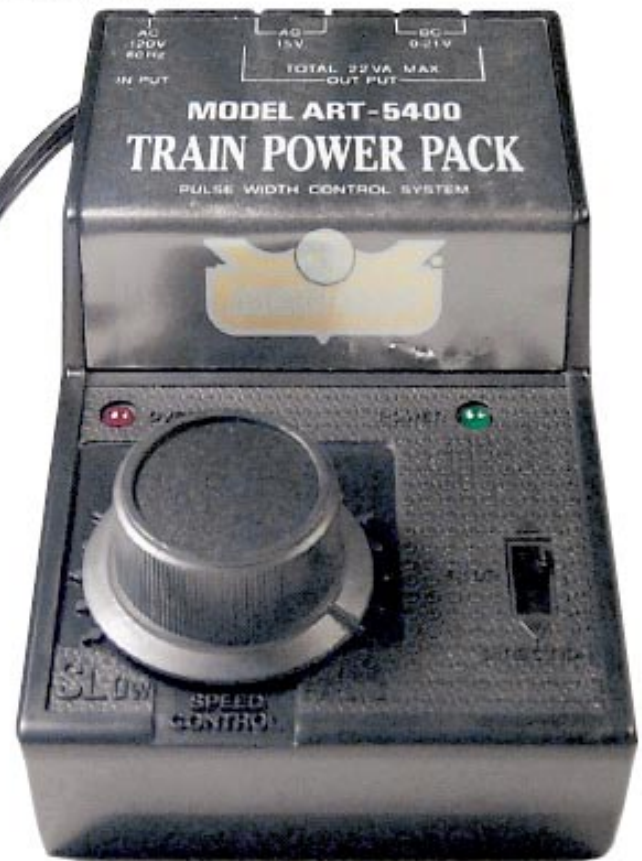
CRE-55400/ART5400 MODEL TRAIN POWER PACK INSTRUCTION MANUAL

FEATURES:

- CONSTANT VOLTAGE PULSE WIDTH SPEED CONTROL

Conventional train power packs control speed by varying the input voltage but this causes the lights to dim and lower the sound level when the train is operated at slow speed. Also, dirty track can interfere with the operation of the train at slow speed due to reduced voltage. **Pulse Width Control (P.W.C.)** allows double features by separating the control of the train from the voltage. A high DC voltage is constantly fed to the tracks, but the speed of the train is regulated by a signal message sent along the tracks to the motor. The higher, constant DC voltage means that the lighting, smoke and electronic sound features work much better, even when the train is at a full stop.

NOTE: PULSE WIDTH CONTROL (P.W.C.) IS NOT PULSE POWER. SEE THE INSTRUCTION MANUAL FOR YOUR SOUND SYSTEM REGARDING COMPATIBILITY ISSUES WHEN USED WITH P.W.C.



- AUTOMATIC ELECTRONIC MOMENTUM

This power pack provides a realistic momentum which starts and stops the trains without the use of AC voltage pulses that are harmful to DC motors. There is a momentary delay between the increase of the throttle and the movement of the train. There is also a delay in stopping as well.

- AUTOMATIC CIRCUIT PROTECTION

If there is a short circuit in the tracks or an overload in the power supply, the components of the CRE-55400/ART-5400 are protected by a circuit breaker and the unit will not be damaged. If there is a short circuit or overload, the overload indicator lamp will light.

- THREE POSITION DIRECTION SWITCH

This switch features forward (upward position), stop (middle position) and reverse (down position). The stop position stops the train, there may still be voltage applied to the rails powering lights and accessories.

- L.E.D. INDICATORS

L.E.D. lights indicate whether or not the power is on and if there is an overload. The power light indicates if the power supply is receiving power and is on regardless if the three position switch is set in the stop position.

INSTALLATION & OPERATION

WITH THE POWER PACK UNPLUGGED:

- Place the direction switch on "stop" and the speed control switch at "slow".
- Connect the track power leads to the two red terminals (DC) on the back of the power pack by depressing the thumb tab at the bottom of the terminal and slipping the bare portion of the wire into the hole above. Place one wire in each of the DC (red) terminals and connect the opposite ends of the wires to the track (see figure 1). It does not matter which wire is connected to either terminal

-CAUTION

Do not try to force the wire into the terminal and insert only the end of the bare portion. Do not put the insulated part of the wire into the terminal.

NEVER connect the track to the black (Accessory) terminals of the power pack as this will damage your equipment.

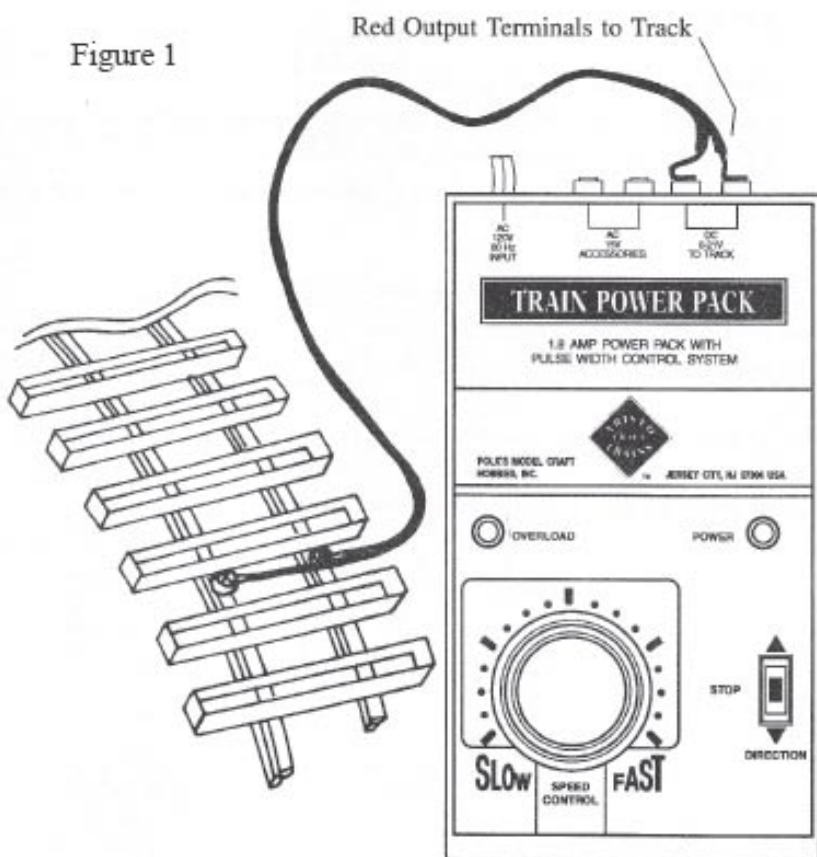
PLUG THE POWER PACK INTO A STANDARD 120V WALL OUTLET

- A green light will come on indicating that you have power
- Rotate the speed control to the right to start the train.
- If the train runs backwards, simply move the direction switch to the opposite position and the train will change direction.

TROUBLE SHOOTING

- If the power light (green) does not light, check to see if the 120V outlet plug is properly connected.
- If the power light is on but the train does not move, check the connection between the tracks and the red terminals.
- If the overload light (red) is flickering, unplug the power supply and:
 - Check all wire connections
 - See if any metal object is on the track causing a short circuit.
 - Check the train for possible short circuit.
 - Check to see if any other power source is inadvertently connected.

Figure 1



CAUTION - ELECTRICALLY OPERATED PRODUCT

Not recommended for children under eight (8) years of age. As with all electric products precaution should be observed during the handling and use of this unit to prevent electric shock.

It is recommended that parents periodically examine the power pack, cords and wires for damage which could result in the risk of fire, electric shock or injury to a person. In the event of such conditions, the power pack should not be used until properly repaired.

SERVICING

Should your ARISTO-CRAFT TRAINS product require warranty service, please return it in the original box, if possible, protected by a proper shipping carton. Send the product fully insured and prepaid. ARISTO-CRAFT TRAINS will not be responsible for any loss or damage incurred during shipping. Be sure to include a brief, but thorough explanation of the problem, together with your name, street address (no Post Office box please), city state or province and country, if outside of the United States. Also include a daytime telephone number so that we may contact you if necessary. Your return address should be clearly marked on the outside of the shipping carton.

Payment for shipping and handling, in U.S. funds, is \$20.00 and should be included. Your check or money order should be made payable to: Polk's Modelcraft Hobbies, Inc. Do not send cash. If your item is not covered by warranty service, you will be contacted and a repair estimate given before any work commences. Warranty covers manufacturer defects, not normal wear and tear.

The shipping address to be used for returns is as follows:

Aristo-Craft Trains
Repairs Department
698 South 21st St
Irvington, NJ 07111

Phone: 973-351-9800
Fax: 973-351-9700
email: aristo@mindspring.com

Written confirmation of receipt of returned items will be sent with estimated repair time by the ARISTO-CRAFT TRAINS Customer Service Department.

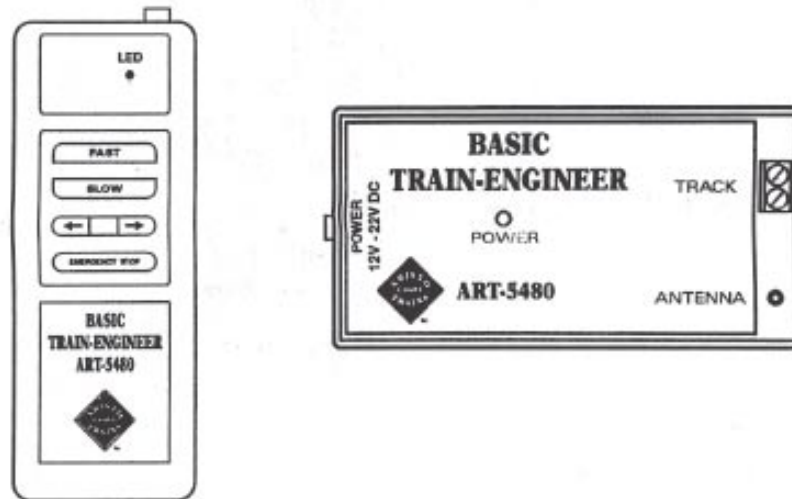
Call for proper shipping/handling if outside continental US

FOR SETS WITH BASIC TRAIN ENGINEER

BASIC TRAIN ENGINEER WALK-AROUND CONTROL SYSTEM

INSTRUCTION MANUAL

ART-5480 - 01



ARISTO-CRAFT TRAINS

090198 NEW

CRE-55480/ART-5480 BASIC TRAIN ENGINEER CONTROL SYSTEM

The Basic Train Engineer is a 2 piece set, consisting of the Transmitter (TX) and the Receiver (RX).

Specifications are as follows:

Transmitter (TX)

Frequency: 27MHz

Band Modulation: FM (Code Type)

Power Supply: 9 V Alkaline Battery (Internal)

Receiver (RX)

Frequency: 27 MHz

Type of Emission: FM (Code Type)

Input Voltage: 12 V – 22 V DC

Output Control Current: 2.5 AMP

Preparation of Transmitter 1) Use a Phillips-head screwdriver to remove the 2 recessed screws from the back cover. 2) Remove the back cover. 3) Install a 9V battery (Not included). 4) Remove the top left screw and attach the flexible antenna by inserting the screw through the wire loop at the end of the antenna. 5) Replace the back cover, allowing the antenna to protrude through the top.

Preparation of Receiver 1) Connect input wire to a DC power pack and turn the pack up to full. If the power light on the receiver does not light, change the direction switch on the power pack. 2) Connect the track to the receiver using the connector wire included (See the drawing). If you are using other than Aristo-Craft track, clip the round ends from the connector wire, strip the ends and attach the wire to the track terminals being used. 3) Uncoil and stretch out the antenna, being sure that it does not cross itself.

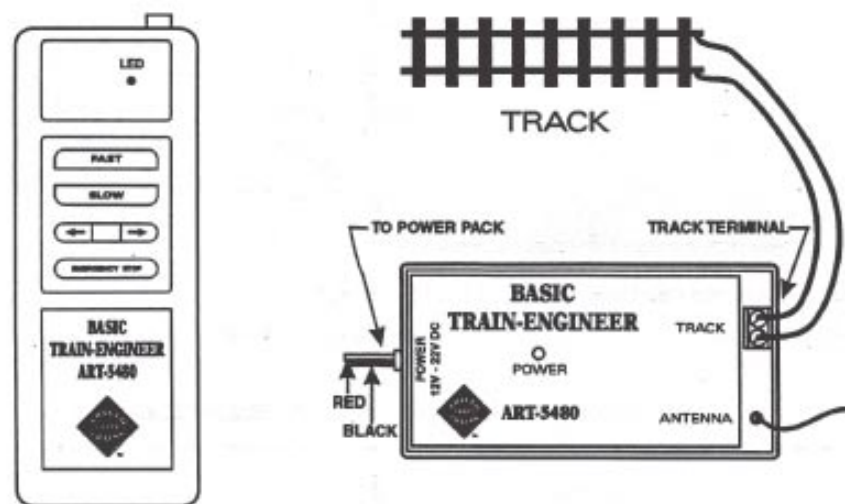
Operation This system has a "momentum function" built into the controls. This means that "jack-rabbit" starts and fast stops are eliminated. The trains will accelerate and slow down gradually, just like the real thing. If a fast stop is needed, press the "Emergency Stop" button on the transmitter and the momentum is overridden, causing a quick stop.

No programming is necessary to begin operation. Merely prepare the transmitter and receiver as above, press the "Fast" button and the train will begin to move.

Transmitter Button Functions Fast: Increases the train speed. Slow: Decreases the train speed. Left and Right Arrows: Changes the direction of the train. Emergency Stop: Stops the train quickly.

Caution

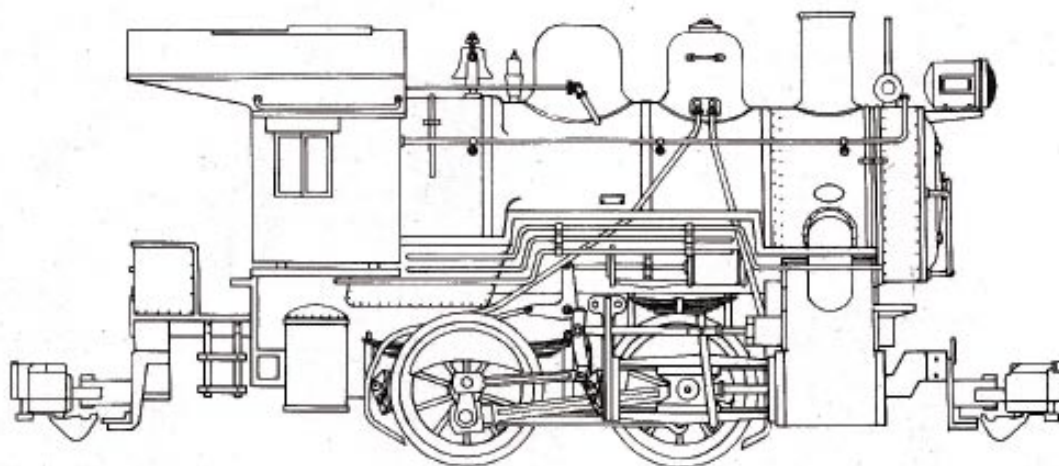
- 1) Do not operate more than 1 "G" scale locomotive. (2 AMPS max demand)
- 2) Do not apply AC power to the Train Engineer Receiver.
- 3) Do not connect any other power source to the track.



"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 may cause undesired operation."

0-4-0 STEAM LOCOMOTIVE

INSTRUCTION MANUAL ART 21200-01



ARISTO-CRAFT TRAINS

092492 REV

INTRODUCTION

Dear Model Railroader:

This locomotive is, without a doubt, one of the most highly detailed #1 Gauge (G/GARDEN) 1/29th Scale STEAM LOCOMOTIVES available. Suitable for both INDOOR and OUTDOOR operation, it accurately portrays a North American prototype Yard Switcher type Steam Locomotive, based upon our research and on documented Official Blueprints referenced to standard Association of American Railroads (AAR) recommended practice.

Should you have any questions about operation, proper usage, or maintenance required on this 0-4-0 Steam Locomotive or any other ARISTO-CRAFT TRAINS Model Railroad product, please contact us at the following address:

Aristo-Craft Trains Phone: 973-351-9800
698 South 21st St Fax: 973-351-9700
Irvington, NJ 07111 email: aristo@mindspring.com

Our telephone lines are open from 10:00AM to 5:00PM (EASTERN STANDARD TIME) Monday through Friday

The following instructions are intended to help you understand and operate properly all the features built into this Steam Locomotive.

Good Railroading!!!!

HISTORY

This ARISTO-CRAFT TRAINS model railroad locomotive is an accurate reproduction of the Steam (switching) Locomotives known as 'yard goats' or 'shifters' built and used by nearly all North American railroads until replaced by the "newer" diesel locomotives.

Our model is based upon the Pennsylvania Rail Road (PRR) Class A5 0-4-0 originally built in 1916 by PRR's Juniata Shops with 'slopeback' tenders (use ART 21900 series SOUND Tender) and the PRR Class A3 0-4-OT (Tank locomotive without tender) built from 1895 until 1915.

Both types of 0-4-0's were used in areas of sharp curvature industrial trackage to handle freight railcars and in many passenger-train terminals to switch US Mail, Express, Baggage, and Passenger railcars.

Steam switching Locomotives of this type are no longer in any regular use by North American railroads. However, PRR No. 94, an A5 0-4-0 has been restored for display at the Railroad Museum of Pennsylvania at Strasburg, PA USA.

FEATURES:

- Operating SMOKE UNIT
- Front/Rear Operating AAR Knuckle Couplers
- Front Headlight
- Firebox "Red Glow"
- Interior Cab detail
- Solid-state can Motor w/constant electrical pickup
- Metal drive wheels and valve gear assembly
- Solid BRASS Grab Railings
- Removeable Coal Bunker
- Optional Steam Sound (use ART 21900 series Tender)

versions of 0-4-0 with Art21900 Series Tender.
Removable Coal Bunker not included.

WHEELS:

The steam locomotive drive wheels are designed for constant electrical power pickup through an electrical connection at each driver. Specially plated to insure good electrical conductivity, corrosion resistance, and extended wear, the wheels will give normal service during usage of the 0-4-0 Steam Locomotive.

However, over a period of time, these wheels may require cleaning. Dirty wheels will cause sporadic electrical pickup and possibly electrical flashover which may cause discoloring on affected surfaces of wheel and/or brass track.

A good indication of dirty wheels is flickering lights or non-functioning smoke unit. To clean properly, remove 0-4-0 locomotive from any electrical contact and turn upside down exposing drive wheels. Using ART-29601 SMOKE FLUID/TRACK CLEANER is recommended for application to wheel surface with clean/soft fabric(rag). DO NOT USE ABRASIVE because resulting metallic particles may enter electric motor/gearing and cause operational problems.

NOTE: 0-4-0 locomotive drive wheels DO NOT use rubber adhesion rings to increase traction but have sufficient weight incorporated into unit for proper "pulling power". 0-4-0 locomotive can handle from 6 to 8 freight railcars under normal operating conditions.

DRIVE TRAIN:

This 0-4-0 locomotive is equipped with a unique drive mechanism that allows greater tractive effort (pulling power) and smoother operation during usage. Each axle/pair of driving wheels is articulated and independent from the other axle in the gearbox. Each axle can move vertically/horizontally without affecting operation of the other axle. This allows for better electrical contact on switches and especially on uneven track.

Each gearbox has been lubricated at the factory with a high-tech

SMOKE GENERATOR UNIT:

The 0-4-0 Steam Locomotive is equipped with an operating smoke generator unit located in smokestack, which produces smoke through the use of ART-29601 SMOKE FLUID. To operate properly, fill the smokestack smoke unit with ART-29601 SMOKE FLUID, about twenty-five (25) drops are sufficient. Fill smoke fluid tank in unit through smokestack opening, top center of smokestack. NOTE: To avoid spilling fluid on locomotive smokebox/boiler, the smoke generator unit can be removed before filling. Make sure switch - on underframe in front of first pair of driver wheels - is in "OFF" position when refilling fluid or removing smoke generator unit.

By exercising proper care during operation, the smoke generator unit will provide long service and enhance operation of your 0-4-0 Steam locomotive.

4. NEVER OVERFILL stack/unit with smoke fluid, the unit holds twenty-five (25) drops of fluid. If spilled, wipe up excess promptly and dispose properly.

5. To prevent smoke unit burnout, NEVER RUN SMOKE UNIT DRY. As soon as unit stops smoking, TURN OFF and refill unit.

6. Locomotive is packaged WITHOUT ART-29601 SMOKE FLUID in smokestack generator unit. (ART-29601 SMOKE FLUID/TRACK CLEANER is available from your ARISTO-CRAFT TRAINS dealer or direct from Polk's Modelcraft Hobbies).

7. All fluid in stack/unit must be heated by element to begin smoking. If unit is completely full, longer time must be allowed before smoke begins.

8. For safety and proper operation, USE ONLY ART-29601 SMOKE FLUID to operate Smoke Generator unit. Using improper Smoke Fluid may damage unit and VOID WARRANTY.

**Removable Coal Bunker not included in newer 0-4-0's equipped with Art21900 Series Tender.

lubricant (ART-29602 CONDUCTIVE LUBRICANT) which, under normal operating conditions, should last indefinitely, thus eliminating the need for periodic gearbox maintenance. However, you MAY lubricate, if desired, using a high-temperature/non-water soluble paste, liquid lubricant, or ART-29602 CONDUCTIVE LUBRICANT but ONLY in proper amounts.

It is necessary to partially dis-assemble gearbox to allow access to gearing and shafts for lubrication. Turn locomotive upside down and remove 4 screws on gearbox coverplate. Grasp coverplate firmly and lift up to complete removal. Lubricate as required.

Although each gearbox is a complete unit, it may be disassembled and all parts contained therein are repairable or available as a replacement. NOTE: Allow only factory-authorized ARISTO-CRAFT TRAINS repair technician to perform ANY REPAIRS, otherwise - WARRANTY MAY BE VOIDED.

LIGHTING:

The 0-4-0 Steam Locomotive is equipped with operating Front headlight.

To replace lightbulb, part ART-29502, use the following directions.

1. Turn off electrical power supply to 0-4-0 Locomotive.

2. Remove smokebox front cover from smokebox/boiler by grasping cover at ridge opposite brass grabrailing and pulling away from smokebox/boiler.

3. Wire will be visible and allow access to bulb holder in headlight.

DIRECTIONAL LIGHTING:

The headlight of this 0-4-0 Locomotive will ONLY LIGHT when operating in forward direction.

9. To remove smokestack generator unit - grasp the 0-4-0 Locomotive firmly and then pull up on smokestack. Unit is 'press fit' and may seem snug when removed for first time.

10. To replace smokestack generator unit, align the base of smokestack with smokebox/boiler and slide unit into plug connection. Smokebox/boiler is slotted to match smokestack.

CAUTION-CAUTION-CAUTION

The smokestack outer plastic column of this smoke generating unit and surrounding smokebox/boiler MAY BECOME HOT during operation and remain HOT for a reasonable time after unit is turned off. DO NOT TOUCH this unit until it has sufficiently cooled. DO NOT TURN LOCOMOTIVE upside down or side-ways because remaining smoke fluid may flow out. Smoke Fluid MAY ALSO BE HOT.

FIREBOX "RED GLOW":

Firebox "Red Glow" utilizes a light bulb (ART-29502) to illuminate a red panel in firebox door opening inside cab. Light bulb is designed for extended usage. Customer replacement may be required at a later date.

OPTIONAL STEAM SOUND:

This locomotive is NOT equipped with a factory installed STEAM SOUND UNIT. However, by using (separate purchase required) ART-21900 series tender, compatible with the 0-4-0 Steam Locomotive, synchronized sound can be added for operational enhancement. Full operating instructions for Sound Unit are included with ART-21900 series tender.

** REMOVEABLE COAL BUNKER:

To enable operation of the 0-4-0 Steam locomotive with an ART-21900 series Tender with Sound, the Coal Bunker assembly is easily removeable from the 0-4-0 frame.

Turn the locomotive upside down, and remove the two (2) screws holding the Coal Bunker to the frame. When removing this Coal Bunker, the rear knuckle coupler assembly is also removed.

The new drawbar/connection assembly needed is included with the ART-21900 series Tender. Using the plastic deckplate is not required with the 0-4-0 Steam Locomotive.

** COUPLERS:

Loop-style couplers are enclosed as a spare accessory. The operating AAR knuckle couplers (ART-29200) on all ARISTO-CRAFT TRAINS locomotives and passenger/freight railcars are designed based upon the AAR style knuckle coupler used on all major North American Rail-roads.

NOTE: However, these knuckle couplers **MAY NOT** operate automatically when attempting to couple ARISTO-CRAFT TRAINS products to knuckle couplers used by other model railroad manufacturers. Couplers may have to be joined by manually coupling the knuckle on each railcar/locomotive end in a closed position by lifting one end coupler and inserting the closed knuckle onto the ARISTO-CRAFT TRAINS knuckle coupler.

The AAR-type knuckle coupler works equally well from either end of the Locomotive and can be uncoupled automatically by using an LGB* designed uncoupling device. The knuckle couplers may also be operated manually by pressing upward on the small tab below each coupler assembly. The knuckle coupler can be pushed away to either side if you wish the locomotive **NOT** to couple automatically when the opposing knuckle couplers come together. However, **DO NOT** attempt to operate in train without the knuckle couplers properly aligned and fully coupled to opposite railcar/locomotive. Otherwise, derailment on curves or switch tracks is possible.

Should you prefer to use the Loop-style coupler, this conversion can be made easily and quickly by unscrewing the single screw that holds

the AAR knuckle coupler to the truck arm and attaching the Loop-style coupler using the same screw. Both style couplers are attached to truck arm at a swivel base. When operating, this enables coupler(s) to articulate when encountering sharp radius curves or switches. Couplers will center automatically while in motion. Manual centering is accomplished by exerting light pressure on knuckle/Loop at articulated joint and returning the knuckle/Loop to center.

*LGB is a trademark of the E.P. Lehman Company, Germany.

SERVICE NOTES:

All parts contained in this 0-4-0 Steam Locomotive are available for replacement or repair by contacting ARISTO-CRAFT TRAINS.

Major components are available to allow the customer to have the option of replacement or repair by qualified factory technicians. If you have any questions, please refer to INTRODUCTION for method of contacting our office.

PULSE-WIDTH-CONTROL (P.W.C.):

All ARISTO-CRAFT TRAINS locomotives, tenders, operating railcars, and operating accessories, are designed to operate at proper capacity **ONLY** with ARISTO-CRAFT TRAINS Power Packs featuring "Pulse Width Control" (P.W.C.).

P.W.C. allows a continuous voltage to flow to the motor and accessories such as headlight, Firebox "Red Glow", and smoke unit during operation **REGARDLESS** of the speed **OR** direction of locomotive and/or railcars. In addition, the motor is supplied with a continuous voltage to allow smooth starting and stopping.

DO NOT CONFUSE PULSE WIDTH CONTROL with Pulse Power, a feature provided by other (not ARISTO-CRAFT TRAINS) power packs. It may seem that when operating with Pulse power, the features on ARISTO-CRAFT TRAINS products are operating

**Some version of 0-4-0 included in Starter (Train) Sets have Hook & Loop couplers factory installed.

properly but in fact they **ARE NOT**. Sufficient voltage may not be available to activate the unit, and, overload or damage to the components may result.

If it is not possible to operate your #1 Gauge 1/29th Scale ARISTO-CRAFT TRAINS products with an ARISTO-CRAFT TRAINS P.W.C. - equipped power pack, do not worry. Our Electrical Engineers have developed ART-5401 CONTROL PACK ADAPTOR which can easily be attached to your present power pack (up to 5AMP Capacity) and allow PULSE WIDTH CONTROL to be applied to your Indoor/Outdoor Model Railroad. The ART-5401 is available from your local Hobby Shop or directly from Polk's.

ASSEMBLY INSTRUCTION:

The 0-4-0 Steam Locomotive comes Ready-to-Run. All 0-4-0 Steam Locomotives are fully-assembled at factory. (Plastic Generator is packaged separately to prevent damage during shipping, insert into holes in front of smokestack on boiler top.)

PARTS LISTING FOR ART-21200 series 0-4-0 STEAM LOCOMOTIVE, all railroad names -

| PART # | DESCRIPTION | COST |
|----------|---|-------|
| 21200-01 | Instruction Manual | 1.00 |
| 212xx-02 | Boiler/Smokebox Body (except TD./Sp. Ed.) | 15.00 |
| 21200-03 | Underframe without Gearbox Assembly | 25.00 |
| 212xx-04 | Locomotive Cab (except TD./Sp. Edition) | 8.00 |
| 212xx-05 | Headlight | 5.00 |
| 21200-06 | Plastic Bell and Buzzer | 2.00 |
| 21200-07 | Plastic Whistle | 1.00 |
| 212xx-08 | Plastic Generator (this is NOT operating Smoke Unit) | 1.00 |
| 21200-30 | 0-4-0 Gearbox with Wheels(4) and Motor, without Valve Gear Assembly | 45.00 |
| 29200 | AAR Knuckle Coupler (pair) | 7.95 |

| | | |
|----------|---|-------|
| 29306 | 0-4-0 Smokestack SMOKE GENERATOR UNIT | 16.95 |
| 29502 | Light Bulb (10) pieces) Headlight | 7.95 |
| 29601 | Smoke Fluid 4oz. | 3.50 |
| 21200-09 | Plastic Air Pump | 1.00 |
| 21200-10 | Plastic Piping (short) | 1.00 |
| 21200-11 | Plastic Piping (long) | 1.00 |
| 212xx-14 | Smokebox Front w/ Brass Grab Railing | 5.00 |
| 212xx-15 | Cool Bunker without AAR Knuckle Coupler | 5.00 |
| 212xx-16 | Plastic Steam Cylinder | 2.00 |
| 21200-21 | Brass Grab Railing-cab roof | 2.00 |
| 21200-22 | Brass Grab Railing-rear | 2.00 |
| 21200-23 | Brass Grab Railing-smokebox front | 2.00 |
| 21200-24 | Brass (long) Grab Railing-boiler | 2.00 |

Additional parts available, contact ARISTO-CRAFT TRAINS Customer Service.

xx - refers to last two digits of railroad name 0-4-0 when part is painted to match, i.e. ART-21201-14 would refer to Smokebox Front for Pennsylvania 0-4-0. When part is same for all 0-4-0 Locomotives, 00 would replace the xx used in parts listing.

NOTE: When ordering replacement parts or repair request, please refer to the proper ART 5-digit or 7-digit part number shown above.

Unpainted/black plastic PART(S) will be substituted if the Painted-to-match PART(S) ordered not available.

In addition to COST shown above, please enclose...
& \$3.50 shipping/handling* if PART Order less than \$10.00 or
\$5.00 shipping/handling* if PART Order \$10.00 and above.
*This is for PART Order only, not WARRANTY Order.

LIMITED WARRANTY

Your new ARISTO-CRAFT TRAINS locomotive is warranted for 180 days from DATE

Refer to Exploded Parts Diagram/Parts Price List for Parts information.

**This product may be warranted for up to 5 years for manufacturer's defects

OF PURCHASE against defects in workmanship and/or materials. Proof of purchase may be required by ARISTO-CRAFT TRAINS.

This warranty is VOID and does not apply to any product and/or parts and components that may have been improperly installed by purchaser/owner, abused or damaged in any way through improper operation such as train derailment, modified, or repaired by unauthorized service centers and/or non-factory authorized technicians.

SERVICING:

Should your ARISTO-CRAFT TRAINS product require warranty service, be sure to take the following steps to assure proper servicing:

1. Return product in ORIGINAL BOX, then pack this ORIGINAL BOX in proper shipping carton. If not possible to use original box, only pack product carefully in strong cardboard box, FULLY INSURED and PREPAID. ARISTO-CRAFT TRAINS will not be responsible for any damage or loss incurred during return for servicing.

2. Include a brief but thorough explanation of the problem(s) and the service that may be required.

3. Be sure to include your name, address (no post office box, please), city, state (or province), country (if outside USA), and postal zipcode along with a daytime telephone number, including Area Code, so that you may be contacted if it becomes necessary. All identification should be both INSIDE package and on OUTSIDE shipping carton/box.

4. Include proper payment for shipping/handling -
Locomotive or Complete Train Set.....\$20.00 US
Accessories, Switch, etc.....
freight/passenger car.....
or tender.....\$10.00 US

- with check (written on your USA Bank Account)/Money Order payable in US Dollars (\$) to: Polk's Hobbies. Please DO NOT SEND CASH. If your returned item is out of warranty, you will be contacted with amount of repair cost before repairs are started.

C.O.D. shipping charges are additional cost.

5. Ship your item(s) to:

Aristo-Craft Trains Phone: 973-351-9800

698 South 21st St Fax: 973-351-9700

Irvington, NJ 07111 email: aristo@mindspring.com

6. Immediate written confirmation of receipt of returned item(s) will be sent along with estimated repair time/cost by ARISTO-CRAFT TRAINS Service/Repair Department.



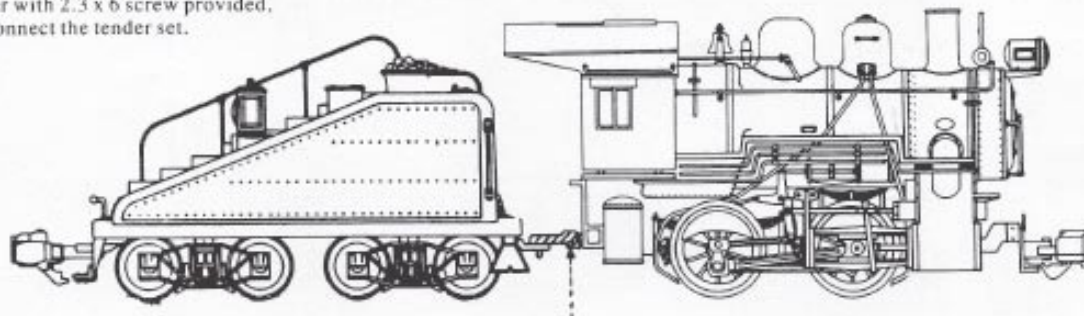
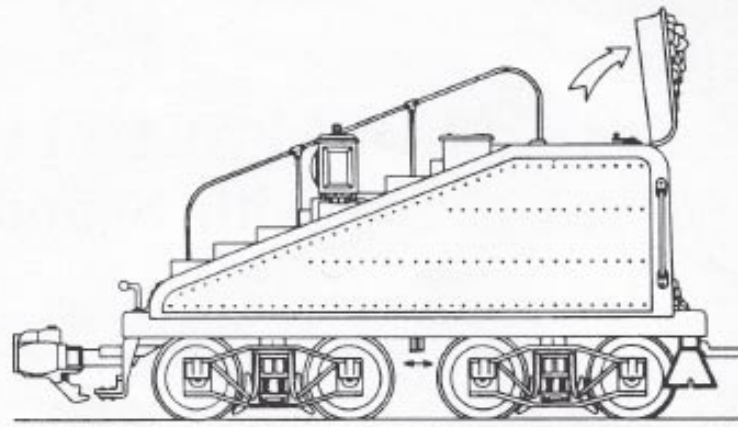
FOR SETS EQUIPPED WITH SLOPE BACK TENDER:

Push the cover forward and open the lid of the coal box as the arrow indicates.

The sound level can be adjusted by turning the volume knob.

Sound can be turned on/off by the switch underneath between trucks.

Remove the coupler on the locomotive and connect the tender connection coupler with 2.3 x 6 screw provided, then connect the tender set.



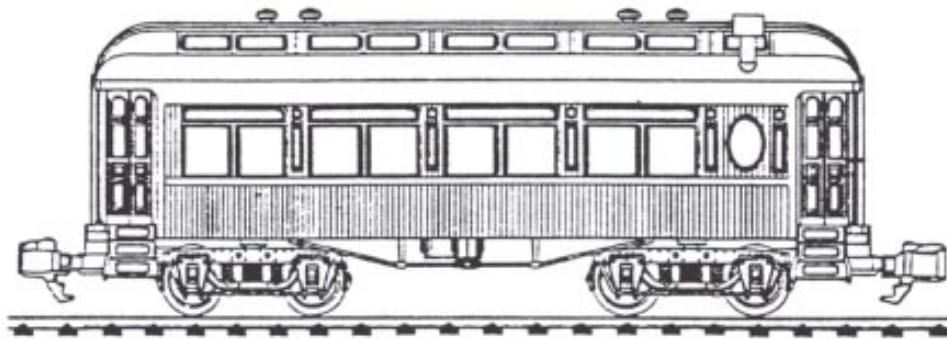
Note: 0-4-0T Steam Locomotive shown, may also be used with 2-4-2 Rogers Steam Locomotive ART-21000/21100 series. Plastic flat floor "Extender" piece used only with ART-21000 series Rogers Steam Locomotive.

SIERRA PASSENGER CAR

COACH – COMBINE – OBSERVATION

INSTRUCTION MANUAL

ART 31000-01



ARISTO-CRAFT TRAINS

REV. 082494

SIERRA PASSENGER CAR

The SIERRA PASSENGER CAR (COACH-COMBINE-OBSERVATION) is based upon an 'old-time/wooden' Passenger Car of the late 1800's era. Actual prototype examples of this type Passenger Car were used by the Sierra Railroad of California, USA and featured in many 'western' movies made by Hollywood producers. Restored examples of similar wooden cars are on display at various North American Railroad Museums.

NOTES:

* Features not included with Starter Set version of Sierra Passenger cars. Starter Set version do not include lighting, smoke unit, electrical circuit, or interior details.

**BRASS features chemically blackened on newer versions.

Brightwork Trim replaced with simulated wood trim.

^T Metal Wheels with Carbon Brush electrical power pickup replaced with CNC Metal Wheels with Journal Bearing electrical power pickup in 2005. Starter Set version not equipped with metal wheels or electrical pickup.

WORKING FEATURES:

- Operating AAR-design knuckle couplers.
- * Detailed passenger car trucks/wheelsets with individual springs and Metal Wheels.
- Operating doors.
- * Potbelly stove with smoking chimney.
- * Solid state electrical circuit.
- Removable Roof.
- Operating interior lights (and Rear-end Markers on OBSERVATION CAR).

EXTERIOR DETAILS:

- **BRASS Filigree Trim.
- **BRASS Grab Railings and End Railings/Brakewheel.
- Simulated WOOD-GRAIN.
- Full Underframe, including Air Brake System components.
- Clear Plastic Windows with Design and Brightwork Trim.[#]

*INTERIOR DETAILS:

- Operating Doors with Seats and Toilet
- Operating Wall Lamps and Potbelly Stove

FEATURES

WHEELS:

^T1. The SIERRA PASSENGER CAR BLACK Metal wheels are designed for constant electrical power pickup through a Carbon Brush electrical connection at each METAL Wheel. Specially BLACK-plated to insure good electrical conductivity, corrosion resistance, and extended wear, the METAL wheels will give normal service during usage of the SIERRA PASSENGER CAR.

1A. However, over a period of time, these wheels may require cleaning. Dirty wheels will cause sporadic electrical pickup and possibly electrical flashover which may cause discoloring on affected surfaces of wheel and/or brass track.

1B. A good indication of dirty wheels is flickering lights or non-functioning smoke unit. To clean properly, remove SIERRA PASSENGER CAR from any electrical contact and turn upside down exposing METAL Wheels. Using ART-29601 SMOKE FLUID/TRACK CLEANER is recommended for application to METAL wheel surface with clean/soft fabric (rag). DO NOT USE ABRASIVE because resulting metallic particles may enter Locomotive electric motor/gearing and cause operational problems.

TRUCK BEARINGS:

2. The truck/wheel set sideframes are molded of a thermal plastic which reproduces all details and, for durability, a special BRASS bushing has been inserted into each journal box end. These BRASS bushings are designed to operate properly WITHOUT additional lubrication.

2A. However, you MAY lubricate, if desired, using either a dry lubricant of powdered graphite, an oil-based liquid lubricant or ARISTO-CRAFT TRAINS ART-29602 CONDUCTIVE-LUBRICANT but ONLY in very small amounts.

2B. It is not necessary to dis-assemble the passenger railcar trucks to properly lubricate. Turn passenger railcar upside down and apply lubrication to axle ends at truck sideframe

TRUCK SPRINGS:

3. The trucks/wheelsets on this model are designed exactly like the trucks used on prototype railroads, and use springs for equalization to act as a shock absorber and cushion the ride.

the closed knuckle onto the ARISTO-CRAFT TRAINS knuckle coupler.

5B. This type coupler works equally well from either end of the passenger railcar and can be uncoupled automatically by using an LGB* designed uncoupling device. The couplers may also be operated manually by pressing upward on the small tab below each coupler assembly. The coupler can be pushed away to any side if you wish the railcar not to couple automatically when the railcars come together. However, DO NOT attempt to operate in train without the couplers properly aligned and fully coupled to opposite railcar/locomotive. Otherwise, railcar(s) may derail on curves or switch tracks.

5C. **NOTE:** Should you prefer to use the Loop-style coupler, this conversion can be made easily and quickly by unscrewing the single screw that holds the AAR coupler to the truck arm and attaching the Loop-style coupler using the same screw.

5D. Knuckle style couplers are attached to truck arm at a swivel base. When operating railcar, this enables coupler(s) to articulate when encountering sharp radius curves or switches. Couplers will center automatically while railcar is in motion. Manual centering is accomplished by exerting light pressure on knuckle at articulated joint and returning Knuckle to center.

LIGHTS/OPERATING SMOKESTACK – STOVE:

6. This SIERRA PASSENGER CAR is equipped with operating interior lights, (operating Rear-end Markers on OBSERVATION CAR only), and Potbelly Stove with Operating Smokestack.

6A. Lights and smoking feature are controlled by slide switch off/on located underneath the Passenger Car body floor on both sides of the front truck/wheelset. (Front truck/wheelset is end with Operating Stove.)

*LGB is a trademark of the E.P. Lehman Company, Germany.

X ELECTRICAL PICKUP:

4. Riding against the inside face of the metal wheels are spring-loaded carbon brushes. These brushes transmit electrical current from the wheels to the Solid State Circuit Board underneath the floor that allows all operating features to function.

4A. After extended usage, it may become necessary to replace the carbon brushes (ART-29401). Unscrew the truck/wheelset from underbody. Then also unscrew the plastic brush holder from the truck/wheelset component – **CAUTION:** BRUSHES ARE SPRING-LOADED. Then remove old brushes and replace with new brushes.

4B. It is suggested to replace BOTH brushes at same time. DO NOT DAMAGE OR LOOSEN wires attached to underbody through the plastic brush holder.

4C. To reduce friction/drag on carbon brush contact surface, you may lubricate, but ONLY WITH ELECTRICALLY CONDUCTIVE lubricant, such as ARISTO-CRAFT TRAINS ART-29602 CONDUCTIVE LUBRICANT.

***** COUPLERS:**

5. Loop-style couplers are enclosed as a spare accessory. The operating knuckle couplers on all ARISTO-CRAFT TRAINS passenger railcars are designed based upon the AAR-style knuckle used on all major North American Railroads.

5A. **NOTE:** However, these knuckle couplers may not operate automatically when attempting to couple ARISTO-CRAFT TRAINS products to knuckle couplers used by other model railroad manufacturers. Couplers may have to be joined by manually coupling the knuckle on each car in a closed position by lifting one end coupler and inserting

X Does not apply to Sierra Car made since 2005 see Note T on page 3.

***** Starter Set version may be equipped with Loop-Style Couplers**

6B. The operating smokestack switch is same side (rightside) as smokestack. The light switch is on the leftside. To operate ON, slide switch lever forward. To operate OFF, slide switch to rear. Either switch may be both ON – both OFF or separately ON/OFF when SIERRA PASSENGER CAR is moving in train.

MARKER LIGHTS (OBSERVATION CAR only):

7. The Rear-end Marker Lights attached to the body end with a screw, are illuminated by L.E.D.'s. Unlike ordinary bulbs, L.E.D.'s do not burn out quickly and should allow extended service.

7A. If you require replacement L.E.D.'s, we suggest contacting ARISTO-CRAFT TRAINS Customer Service for assistance. Proper tools are required to replace L.E.D.'s and to connect to electrical circuit. Complete Marker Lights (pair) with L.E.D.'s are available as ART-29504.

INTERIOR LIGHTING:

8. The detailed interior is illuminated by decorative lamp fixtures which utilize screw-base incandescent light bulbs, ART-29502, that will require replacement after normal extended usage.

8A. To replace, disconnect SIERRA PASSENGER CAR from electrical supply, remove Roof (see section ROOF REMOVAL), and unscrew bulb. **CAUTION:** Check first to ascertain that inoperative bulb has not vibrated loose.

ELECTRICAL CIRCUIT BOARD:

9. The SIERRA PASSENGER CAR is equipped with a Solid State Circuit Board that distributes the electrical current to various operating components. This Circuit Board is completely SOLID STATE and CANNOT WEAR OUT, and is a permanent part of subfloor which SHOULD NOT be removed.

**Starter Set version may not include features listed in Steps 6 - 10C
See Notes on Page 11**

9A. If your SIERRA PASSENGER CAR requires service due to malfunction of electrical Circuit Board, return to factory-authorized repair facility ONLY. See WARRANT INFORMATION for repair instructions.

SMOKE GENERATOR:

10. The Smoke Generator unit (ART-29304) is located in the removable smokestack/chimney that attaches to the roof in a slotted/tight-lock fit.

10A. To operate, fill smokestack with ART-29601 SMOKE FLUID AND TRACK CLEANER. Tilt smokestack cover back and allow about 15 drops to enter chamber, then return cover to normal position. Make sure underbody switch is ON (forward position) and track power is connected.

10B. It is also important to turn smoke generator unit OFF immediately after smoke fluid is completely used, because empty smoke generator unit in ON position will burn out unit. Be careful not to overfill the smokestack chamber or get smoke fluid onto SIERRA PASSENGER CAR body/roof. If fluid spills, wipe dry immediately.

10C. CAUTION – CAUTION – CAUTION

The smokestack of this smoke generating unit and surrounding carbody/roof MAY BECOME HOT during operation and for a reasonable time after unit is turned OFF. DO NOT TOUCH this unit until it has sufficiently cooled. DO NOT TURN SIERRA PASSENGER CAR upside down or sideways because remaining smoke fluid may flow out. Smoke fluid MAY ALSO BE HOT. Remove the smokestack/chimney from SIERRA PASSENGER CAR, then turn car over for any repairs/maintenance.

11I. If you are uncertain of alignment, visually check through window adjacent to potbelly stove below roof hole.

11J. Push to snug fit. A smokestack crooked or not properly seated in potbelly stove WILL NOT OPERATE. The smokestack should fit tightly to roof when properly installed.

SERVICE NOTES:

12. All parts contained in the SIERRA PASSENGER CAR (COACH-COMBINE-OBSERVATION) are available for replacement or repair by qualified factory technicians. If you have any questions, please refer to INTRODUCTION for method of contacting our office.

PULSE WIDTH CONTROL/P.W.C.:

13. All ARISTO-CRAFT TRAINS locomotives, tenders, and operating railcars are designed to operate at proper capacity ONLY with ARISTO-CRAFT TRAINS Power Supply Units featuring "Pulse Width Control" (P.W.C.).

13A. P.W.C. allows a continuous voltage to flow to the motor and accessories (when switches are ON) such as headlight, interior lighting, smoke unit, and diesel or tender 'Electronic Sounds' during operation REGARDLESS of the speed OR direction of locomotive, tender, and/or railcars. In addition, the motor is supplied (when switch is ON) with a continuous voltage to allow smooth starting and stopping.

13B. DO NOT CONFUSE PULSE WIDTH CONTROL with Pulse Power, a feature provided by some other (non-ARISTO-CRAFT TRAINS) power packs. It may seem that when operating with Pulse

ROOF:

11. To remove roof, detach smokestack/chimney by pulling straight up on smokestack. (See Item 10C. above CAUTION for HOT FLUID REMINDER.) Be careful and do not damage hinged smokestack/chimney cover during removal.

11A. Loosen and remove Phillips Head screws located above each end door.

11B. Press inward both sides of SIERRA PASSENGER CAR body at center just below roofline, then lift roof section off body.

11C. When replacing roof, CHECK center alignment with notches in roof.

11D. Press down on roof until it 'snaps' in place, then reinsert screws at end.

11E. **NOTE:** Roof is NOT 'position-changeable' – smokestack MUST be at front end of SIERRA PASSENGER CAR body.

11F. The roof must fit properly against the body.

11G. Reinsert the smokestack/chimney, first aligning the protrusion on smokestack flange with notch on roof ring.

11H. Holding the smokestack straight up, insert into roof hole and align properly with potbelly stove receptacle.

Power, the features on ARISTO-CRAFT TRAINS products are operating properly, but, in fact they ARE NOT. Sufficient voltage may not be available to activate the unit(s) and underload/overload damage to components may result.

13C. Also, the TRAIN POWER PACK 7000 – 3.5 AMP FOR G AND HO previously manufactured by Polk's Modelcraft Hobbies under the *Aristocraft* Tradename DOES NOT HAVE P.W.C. To properly operate your #1 Gauge ARISTO-CRAFT TRAINS with P.W.C., use ARISTO-CRAFT TRAINS ART-5400 (1.8 AMP) or ART-5450 (3.5 AMP) Power Supply Units.

13D. If it is not possible to operate your #1 Gauge 1/29 Scale ARISTO-CRAFT TRAINS products with our P.W.C. equipped Power Supply, do not worry. Our Electrical Engineers have developed the ART-5401 CONTROL PACK ADAPTOR which can be easily attached to your present power supply, UP TO 5 AMPS, of another manufacturer and will allow PULSE WIDTH CONTROL to be applied to your Indoor/Outdoor model railroad. The ART-5401 CONTROL PACK ADAPTOR is now available, see your ARISTO-CRAFT TRAINS A.A.R. Full-Service Hobby shop/dealer.

ASSEMBLY INSTRUCTIONS:

14. No assembly required, all SIERRA PASSENGER CARs (COACH-COMBINE-OBSERVATION) are ready-to-run.

15. PARTS LISTING FOR SIERRA PASSENGER CAR ART-31000 Series COACH – ART-31100 Series COMBINE – ART-31200 Series OBSERVATION, all railroad names and undecorated.

Refer to Sierra Passenger Car Exploded Parts Diagram/Parts List for part descriptions, part numbers, and prices.

LIMITED WARRANTY

16. Your new ARISTO-CRAFT TRAINS product is warranted for 180 days from DATE OF PURCHASE against defects in workmanship and/or materials. Proof of purchase MAY be required by ARISTO-CRAFT TRAINS.

16A. This warranty is VOID and does not apply to any product and/or parts and components which have been improperly installed by purchaser/owner, abused or damaged in any way through improper operation such as train derailment, modified, or repaired by unauthorized service centers and/or non-factory authorized technicians.

SERVICE:

17. Should your ARISTO-CRAFT TRAINS model railroad product require warranty service, be sure to take the following steps to assure proper servicing.

17A. Return product with foam insert in ORIGINAL Black BOX, AND pack product carefully in (another) corrugated cardboard box, FULLY INSURED and PREPAID. ARISTO-CRAFT TRAINS will not be responsible for any damage or loss incurred during return for servicing.

17B. DO NOT SHIP PRODUCT ONLY in Black ARISTO-CRAFT TRAINS box with shipping label. This WILL NOT protect product during shipping and CUSTOMER is liable for damage to product.

17C. Include a brief but thorough explanation of the problem(s) and the servicing that may be required.

17D. Be sure to include your name, street address, city, state (or province), country (if outside U.S.A.), and postal zipcode along with daytime phone number, including Area Code, so that you may be contacted if it becomes necessary. All identification MUST be both – INSIDE package, contained in letter and – OUTSIDE package, on shipping container.

17E. Include proper payment for shipping/handling –

Locomotive or Complete Train Set\$20.00 US
Accessories, switch-track
individual freight cars, passenger
railcars, tender, or Buildings\$10.00 US

– with check (written on your USA Bank Account)/Money Order payable in US Dollars (\$) to: Polk's Hobbies. Please *DO NOT SEND CASH*. If your returned item is out of warranty, you will be contacted with proper amount of repair costs before repairs are started.

C.O.D. shipping NOT included, additional cost.

17F. Ship your item(s) to:

Aristo-Craft Trains
698 South 21st St
Irvington, NJ 07111

Phone: 973-351-9800

Fax: 973-351-9700

email: aristo@mindspring.com

17G. Immediate written confirmation of receipt of returned item(s) will be sent along with estimated repair time by ARISTO-CRAFT TRAINS Service/Repair Department.

LIMITED WARRANTY

All ARISTO-CRAFT TRAINS products are under warranty for five (5) years from the date of purchase against defects in workmanship and/or materials. Proof of purchase *may be required* by ARISTO-CRAFT TRAINS.

This warranty is void and does not apply to any product and/or parts and components which have been improperly installed by the purchaser/owner, abused or damaged in any way through improper operation such as but not limited to derailment, repairs or modifications performed by non-authorized service centers or technicians.

SERVICING

Should your ARISTO-CRAFT TRAINS product require warranty service, please return it in the original box, if possible, protected by a proper shipping carton. Send the product fully insured and prepaid. ARISTO-CRAFT TRAINS will not be responsible for any loss or damage incurred during shipping. Be sure to include a brief, but thorough explanation of the problem, together with your name, street address (no Post Office box please), city state or province and country, if outside of the United States. Also include a daytime telephone number so that we may contact you if necessary. Your return address should be clearly marked on the outside of the shipping carton.

The proper payment for shipping and handling, in U.S. funds, should also be included as follows:

| | |
|---|---------|
| Locomotive or complete train set | \$26.00 |
| Accessories, switches, track, freight or passenger cars, rail cars, tenders, etc. | \$10.00 |

CALL FOR CURRENT SHIPPING COSTS

Your check or money order should be made payable to: Polk's Modelcraft Hobbies, Inc. Do not send cash. If your item is not covered by warranty service, you will be contacted and a repair estimate given before any work commences.

The shipping address to be used for returns is as follows:

ARISTO-CRAFT TRAINS / Polk's Modelcraft Hobbies, Inc.

Customer Service Department

698 SOUTH 21ST STREET

IRVINGTON, NJ 07111

TEL: 973-351-9800

FAX: 973-351-9700

email: aristo@mindspring.com

Written confirmation of receipt of returned items will be sent with estimated repair time by the ARISTO-CRAFT TRAINS Customer Service Department.