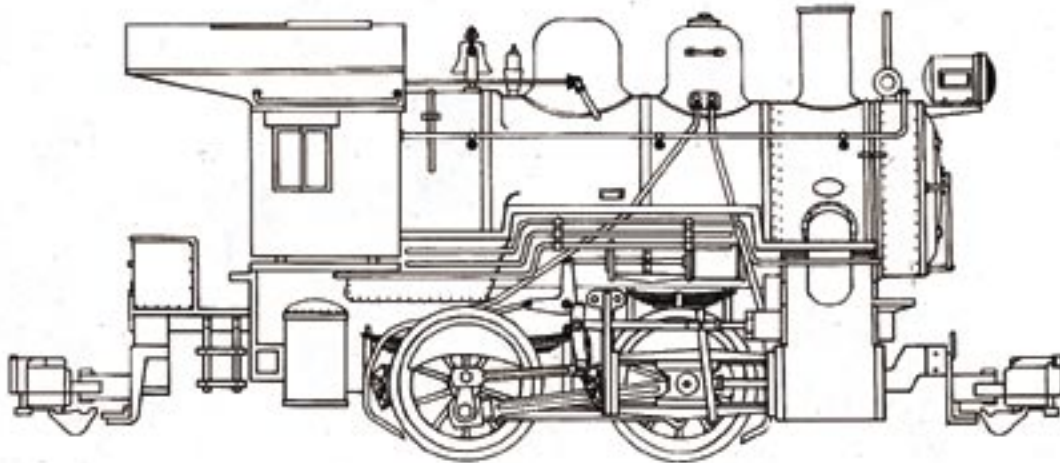


0-4-0 STEAM LOCOMOTIVE

INSTRUCTION MANUAL ART 21200-01



ARISTO-CRAFT TRAINS

092492 REV

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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 'shiflers' 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 0-4-0T (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)

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

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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

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 grabrail 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.

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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.

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.

*Newer versions of 0-4-0 come with Art21900 Series Tender.

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

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 LTD./Sp. Edition)	15.00
21200-03	Underframe without Gearbox Assembly	25.00
212xx-04	Locomotive Cab (except LTD./Sp. Edition)	8.00
212xx-05	Headlight	5.00
21200-06	Plastic Bell and Bracket	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.	3.95
21200-09	Plastic Air Pump	0.00
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	Coal 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-track,
freight/passenger railcar,
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.



Call for proper shipping/handling if outside continental US