



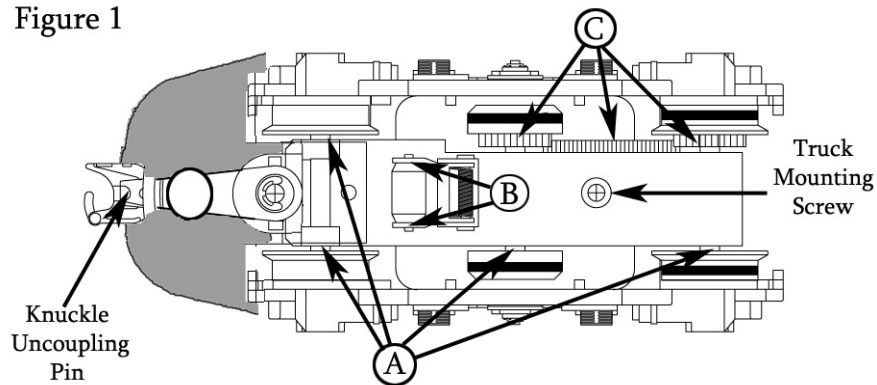
Bachmann Industries, Inc.  
1400 East Erie Avenue, Philadelphia, PA 19124 USA  
www.bachmanntrains.com  
Customer Service Telephone 800-356-3910

## ALCO PA-1 POWERED DIESEL LOCOMOTIVE INSTRUCTIONS

Thank you for purchasing a Williams by Bachmann® locomotive. This locomotive has been manufactured to provide years of use and enjoyment. Please follow the simple instructions below.

This locomotive has been greased and tested before leaving the factory. Before operating, please lightly lubricate the points shown in the diagram below. Do not over-lubricate and take extra care to avoid getting lubricants on the wheel surfaces or traction tires.

Figure 1



1. For the axles and coupler pivot points **Marked A**, we recommend that you lubricate with a small amount of light oil such as Bachmann E-Z Lube® #99984 Light Gear Oil. **Do not over-lubricate.**
2. For areas that require electrical flow, such as roller pick-ups **Marked B**, please use Bachmann E-Z Lube® #99981 Conductive Contact Lube. **Never use any Teflon® based oil on these areas because this type oil has insulating properties.**
3. For the gears **Marked C** we recommend that you lubricate with a small amount of heavy gear oil such as Bachmann E-Z Lube® #99983 Heavy Gear Oil. **Do not over-lubricate.**

### OPERATION

After unpacking the locomotive, make sure that the uncoupling plunger is in the correct position with the pin inserted in the knuckle (see figure 1). Failure to do so will allow the uncoupling plunger to contact the center rail and a direct short will occur when power is applied to the track. We recommend using an AC hobby transformer with maximum voltage output of 18 VAC, a pure or smooth sine wave output, and a wattage rating of **at least 80 watts**.

### Throttle Control

The throttle control will allow you to operate your train at a wide range of speeds. Slowly turn the control knob until you are familiar with the response of the locomotive that you are operating. Please note that our sound systems require 6 volts or greater to operate correctly.

## OPERATION (continued)

### Horn Operation

To operate the horn of your locomotive, simply depress the horn /whistle button on your transformer. Our True Blast™ Horns will play a 6 second sequence one time.

### Bell Operation

To operate the bell on your locomotive, press and hold the bell button for one second. To stop the bell, press and hold the button for one second.

### Direction Control

Williams reverse units sequence FORWARD, NEUTRAL, REVERSE, NEUTRAL, and again FORWARD. To sequence the reverse board, simply depress and hold the direction button, release the button 1 second after the train has come to a complete stop. **PLEASE NOTE:** If you do not wait for your train to come to a complete stop the reverse unit may not always sequence properly. After approximately 7 seconds without power, the reverse board will reset to FORWARD.

### Uncoupling

This locomotive is equipped with an operating knuckle coupler at the pilot end. The rear end of the locomotive has a fixed coupler, to allow close coupling with the matching dummy A unit. To uncouple, position the uncoupling plunger over the center of electro-magnetic track uncoupling section and activate the magnet. If you run this locomotive alone, or with a Dummy B unit, you will need to use the operating coupler on the first piece of rolling stock in your consist.

## PERIODIC MAINTENANCE

### Disassembly Instructions

For periodic maintenance, you will have to remove the body shell and motor trucks to gain access to the parts that require servicing. The body shell is attached with four screws on the bottom of the locomotive frame. The screws are located in each corner of the frame. After removing the body shell, unscrew the truck mounting screw shown in figure 1. This will allow you to disengage the motor from the truck assembly. When servicing is complete re-attach the motor to the truck. Make sure the worm gear is meshing with the truck gear before tightening the mounting screw completely. You can test this by rotating the flywheel on top of the motor and the wheels on the truck will turn. Re-attach body shell using care not to over-tighten the screws.

### Lubrication

We recommend that you lubricate as directed on page 1 every 10 hours of operation. In addition, you also should check the motor gearbox every 25 hours. After gaining access to the gearbox as instructed above, you can inspect the gears and apply any necessary lubrication. We recommend Bachmann E-Z Lube® #99982 Grease, or equivalent.

### Traction Tire Replacement

Our traction tires are very durable and should not need replacing very frequently. They should last hundreds of hours under normal conditions. If they wear out prematurely, check to make sure your track joints are tight. Gaps in your track can cause damage to the tires. To replace the traction tires follow the disassembly instructions above. Next remove the two screws that attach each sideframe. Remove old tire if present, clean wheel groove with any degreasing agent **making sure to follow the safety and handling instructions on the degreasing agent's bottle.** Wipe dry with paper towel or clean rag. Stretch the new traction tire over the wheel making sure that it does not twist and seats smoothly in the wheel groove. Re-attach the sideframes and re-assemble as directed above.

### Light Bulb Replacement

This locomotive uses a 12 volt bayonet style bulb. The standard replacement bulb number is 53.



by BACHMANN

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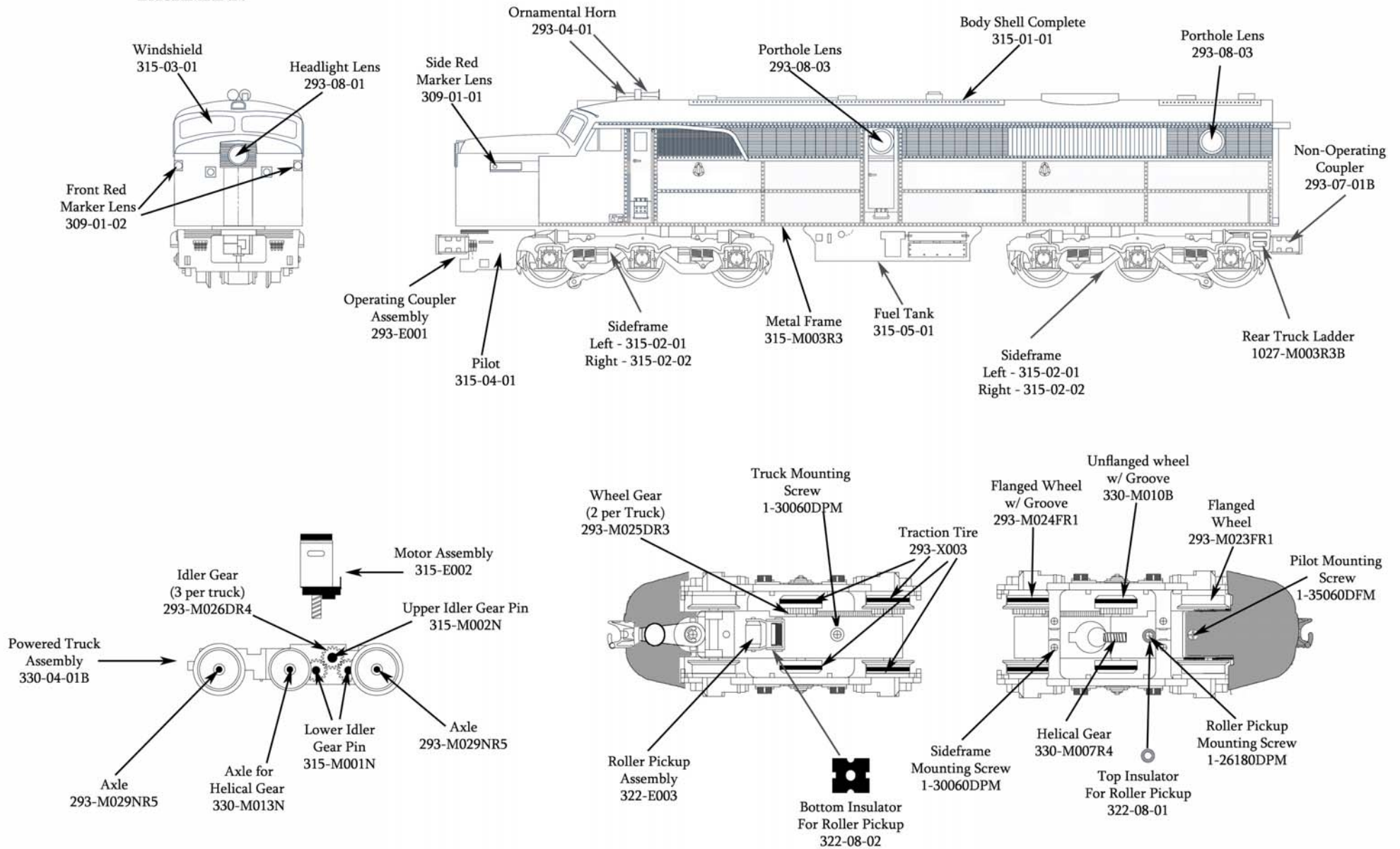
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| Part Number   | Description  | Number Used |
|---|--|-------------|
| <b>ALCO PA-1 POWERED UNIT BODY &amp; BODY PARTS</b> |  |             |
| 315-01-01   | Body Shell - complete  | 1           |
| <i>1-35080DPT</i>                                   | <i>Screw(Mounts Body to Frame)</i>                                 | 4           |
| 293-04-01   | Ornamental Horn  | 2           |
| 293-09-01   | Headlight lens   | 2           |
| 309-01-02   | Front Red Marker Lens  | 2           |
| 309-01-01   | Side Red Marker Lens   | 2           |
| 293-08-03   | Porthole Lens  | 4           |
| 315-03-01   | Windshield   | 1           |
| 315-M003R3  | Metal Frame  | 1           |
| 293-02-01   | Fuel Tank  | 1           |
| <i>1-25050DPS</i>                                   | <i>Screw(Mounts Fuel Tank to Frame)</i>                            | 4           |
| <b>TRUCK PARTS</b>                                  |  |             |
| 330-04-01B  | Powered Truck Assembly   | 2           |
| 293-M023FR1   | Flanged Wheel  | 4           |
| 293-M024FR1   | Flanged Wheel w/groove   | 4           |
| 330-M010B   | Unflanged Wheel w/Groove   | 4           |
| 293-X003  | Traction Tire  | 4           |
| 293-M029NR5   | Axle   | 4           |
| 330-M013N   | Axle for Helical Gear  | 2           |
| 293-M012R5  | Helical Gear   | 2           |
| 293-M025DR3   | Wheel Gear   | 4           |
| 293-M026DR4   | Idler Gear   | 6           |
| 315-M001N   | Pin for lower Idler gears  | 4           |
| 315-M002N   | Pin for upper Idler gears  | 2           |
| 1-30060DPM  | Truck Mounting Screw   | 2           |
| 293-E001  | Operating Coupler Assembly   | 1           |
| 315-04-01   | Pilot  | 1           |
| 1-35060DFM  | Pilot /Rear Ladder Mounting Screw                                  | 2           |
| 293-07-01B  | Non-Operating Coupler  | 1           |
| <i>885-M013R1</i>                                   | <i>Spring for non-operating coupler</i>                            | 1           |
| <i>1-26060DPWM</i>                                  | <i>Mounting Screw for non-operating coupler</i>                    | 1           |
| 1027-M003R3B  | Rear Truck Ladder  | 1           |
| 322-E003  | Roller Pickup Assembly   | 1           |
| 322-08-01   | Top Insulator for Roller Pickup                                    | 2           |
| 322-08-02   | Bottom Insulator for Roller Pickup                                 | 2           |
| 1-26180DPM  | Roller Pickup Mounting Screw                                       | 2           |
| 315-02-01   | Sideframe - Left   | 2           |
| 315-02-02   | Sideframe - Left   | 2           |
| 1-30060DPM  | Mounting Screw for sideframe                                       | 8           |
| <b>MOTOR PARTS</b>                                  |  |             |
| 315-E002  | Motor Assembly w/Motor Mount                                       | 2           |
| <i>293-10-02B</i>                                   | <i>Motor Mount</i>   | 2           |
| <i>322-M012R2</i>                                   | <i>Grounding Plate</i>   | 2           |
| <i>1-26060DPM</i>                                   | <i>Motor Mount Screw-Large</i>                                     | 4           |
| <i>1-30050DCS</i>                                   | <i>Motor Mount Screw-Small</i>                                     | 2           |
| <b>ELECTRONICS</b>                                  |  |             |
| <i>00247</i>  | <i>Reverse Board (available from your dealer)</i>                  | 1           |
| <i>00245</i>  | <i>True Blast II - Diesel Version (available from your dealer)</i> | 1           |

See Diagram on opposite side for identification. Parts shown in Italics are not illustrated.

# ALCO PA-1 (powered) Parts Identification Chart



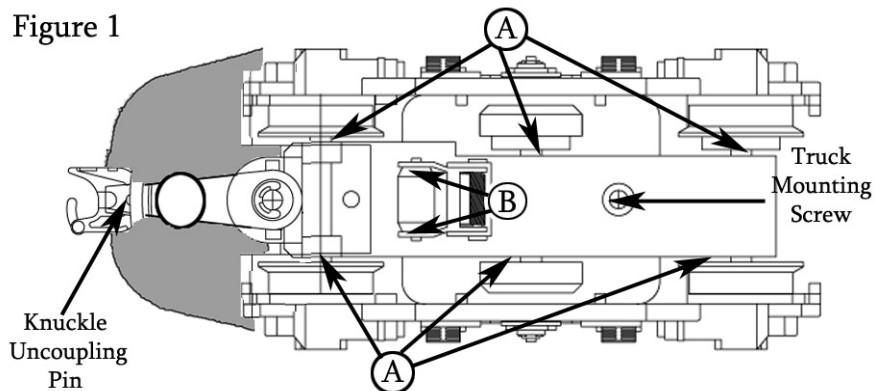


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## ALCO PA-1 DUMMY DIESEL LOCOMOTIVE INSTRUCTIONS

Thank you for purchasing a Williams by Bachmann® locomotive. This locomotive has been manufactured to provide years of use and enjoyment. Please follow the simple instructions below.

Before operating, please lightly lubricate the points shown in the diagram below. Do not over-lubricate and take extra care to avoid getting lubricants on the wheel surfaces.



1. For the axles and coupler pivot points **Marked A**, we recommend that you lubricate with a small amount of light oil such as Bachmann E-Z Lube® #99984 Light Gear Oil. **Do not over-lubricate.**
2. For areas that require electrical flow, such as roller pick-ups **Marked B**, please use Bachmann E-Z Lube® #99981 Conductive Contact Lube. **Never use any Teflon® based oil on these areas because this type oil has insulating properties.**

## **OPERATION**

After unpacking the locomotive, make sure that the uncoupling plunger is in the correct position with the pin inserted in the knuckle (see figure 1). Failure to do so will allow the uncoupling plunger to contact the center rail and a direct short will occur when power is applied to the track.

### **Uncoupling**

This dummy locomotive is equipped with an operating knuckle coupler at the pilot end. The rear end of the locomotive has a fixed coupler, to allow close coupling with the matching powered unit. To uncouple, position the uncoupling plunger over the center of electro-magnetic track uncoupling section and activate the magnet.

## **PERIODIC MAINTENANCE**

### **Disassembly Instructions**

You will have to remove the body shell for bulb replacement, or to install a power upgrade kit. The body shell is attached with four screws on the bottom of the locomotive frame. The screws are located in each corner of the frame. When you re-attach body shell, please be careful not to over-tighten the screws.

### **Lubrication**

We recommend that you lubricate as directed on page 1 every 10 hours of operation.

### **Light Bulb Replacement**

This locomotive uses a 12 volt bayonet style bulb. The standard replacement bulb number is 53.

### **Power Upgrade Kit**

A power upgrade kit, Williams by Bachmann® #00243, is available to convert this dummy unit into a powered unit. Please follow the installation instructions that are included with the kit.



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| Part Number   | Description                                     | Number Used |
|---|---|-------------|
| <b>ALCO PA-1 POWERED UNIT BODY &amp; BODY PARTS</b> |   |             |
| 315-01-01   | Body Shell - complete                           | 1           |
| <i>1-35080DPT</i>                                   | <i>Screw(Mounts Body to Frame)</i>              | 4           |
| 293-04-01   | Ornamental Horn                                 | 2           |
| 293-09-01   | Headlight lens                                  | 2           |
| 309-01-02   | Front Red Marker Lens                           | 2           |
| 309-01-01   | Side Red Marker Lens                            | 2           |
| 293-08-03   | Porthole Lens                                   | 4           |
| 315-03-01   | Windshield                                      | 1           |
| 315-M003R3  | Metal Frame                                     | 1           |
| 293-02-01   | Fuel Tank                                       | 1           |
| <i>1-25050DPS</i>                                   | <i>Screw(Mounts Fuel Tank to Frame)</i>         | 4           |
| <b>TRUCK PARTS</b>                                  |   |             |
| 330-04-01B  | Powered Truck Assembly                          | 2           |
| 293-M023FR1   | Flanged Wheel                                   | 8           |
| 293-M12B  | Unflanged Wheel                                 | 4           |
| 293-M029NR5   | Axle  | 6           |
| 1-30060DPM  | Truck Mounting Screw                            | 2           |
| 293-E001  | Operating Coupler Assembly                      | 1           |
| 315-04-01   | Pilot   | 1           |
| 1-35060DFM  | Pilot /Rear Ladder Mounting Screw               | 2           |
| 293-07-01B  | Non-Operating Coupler                           | 1           |
| <i>885-M013R1</i>                                   | <i>Spring for non-operating coupler</i>         | 1           |
| <i>1-26060DPWM</i>                                  | <i>Mounting Screw for non-operating coupler</i> | 1           |
| 1027-M003R3B  | Rear Truck Ladder                               | 1           |
| 322-E003  | Roller Pickup Assembly                          | 1           |
| 322-08-01   | Top Insulator for Roller Pickup                 | 2           |
| 322-08-02   | Bottom Insulator for Roller Pickup              | 2           |
| 1-26180DPM  | Roller Pickup Mounting Screw                    | 2           |
| 315-02-01   | Sideframe - Left                                | 2           |
| 315-02-02   | Sideframe - Left                                | 2           |
| 1-30060DPM  | Mounting Screw for sideframe                    | 8           |
| 293-10-02B  | Truck Mount                                     | 2           |

See Diagram on opposite side for identification. Parts shown in Italics are not illustrated.

# ALCO PA-1 (dummy) Parts Identification Chart

