

Blackstone Models™

C-19 Operations Manual

Thank you for purchasing the Blackstone Models C-19!

Before your little Consolidation whistles off, we want to tell you about a few things that will enhance your operating experience and ensure that your locomotive is maintained for years of pleasure.

We are pleased that we were able to produce some very fine details for this model. While much of your locomotive is designed with zinc alloy for weight and reliable operation, be aware that some of the parts are wire, styrene and celcon. Thoughtful handling of the locomotive right out of the box will ensure that detail parts are not broken or damaged.

The locomotive and tender are coupled together in the box. Figure 1 shows the best way to hold the locomotive and tender as you move it to your track. Be sure your hands are clean or use lightweight gloves. While the drawbar connection of the locomotive and tender is of substantial strength, be careful not to twist at the connection when handling in this manner.



Figure 1 - Handling the locomotive and tender

Separating the Locomotive and Tender

The metal drawbar is secured by screws located on both the locomotive and tender. It should not be necessary to separate the locomotive and tender. If you wish to do so, please follow these steps:

1. With the locomotive and tender on a soft surface or foam cradle, turn them upside down and remove the four small Phillips head screws that secure the tender tank to the tender chassis.*

*It may be necessary to remove the tender trucks from the chassis to access these screws. Use a small Flathead screwdriver to pry the snap-fit trucks out of the chassis holes. **Note:** Each tender truck has insulated wheelsets, one truck for left rail pickup and one for right rail pickup. Always ensure that the trucks are reinstalled with the insulators on the correct side or electrical problems will ensue! (Please see Figure 7 on Page 4.)

2. After lifting the tank off of the chassis use, tweezers or a small pair of needle-nose pliers to unplug the 6-pin connector from the socket.*

*This is the largest connector on the sound board (or PCB) located on the end of the circuit board nearest the locomotive.

3. Thread the 6-pin connector down and out through the hole in the bottom of the chassis.
4. Turn the locomotive and tender upside down again, then remove the small Phillips head screw and washer that secure the drawbar to the tender.

Detail Parts

Take a closer look in the C-19 box and you will notice that we have added a locomotive toolbox along with some extra screws. The toolbox was often seen on the pilot deck, rear tender platforms, or behind the coal bin on top of the tender. For an example of placement options, Robert Grandt's "Narrow Gauge Pictorial" Volumes I and XI are excellent photo resources for placing specific details. We recommend using a non-permanent adhesive (such as white glue or RTV silicon) to attach this piece as it will allow easier removal. ACC glue is best to permanently affix the toolbox.

While each C-19 has been test-run at the factory, a little break-in time is always a good idea to enhance the running qualities of your engine. We recommend operating the locomotive for approximately 2-3 hours in both directions at varying speeds. We have designed your locomotive for smooth operation and consistent electrical pickup. In order to enhance your operation, ensure that your locomotive and tender wheels, as well as your track, are cleaned on a regular basis.

Maintaining your Locomotive

Before you run your C-19, it is best to place some light lubrication on the rods, bushings, and electrical contact points. Also check that the gearbox is properly lubricated. In order to keep the mechanism running smoothly, please follow these instructions:

After some running time and prior to adding new lubrication, be sure to wipe off old, dirty oils and grease that have accumulated on the moving parts of the locomotive using Isopropyl alcohol. Always ensure that any cleaning fluids used will not remove any paint or glues from the model. Remember to periodically wipe the tread of all wheels to keep them free of accumulated dirt and oil.

You may already have a favorite line of hobby lubricants. If not, Blackstone Models has successfully tested lubricants from **Aero-Car Hobby Lubricants***.

***Aero-Car Hobby Lubricants, Inc**
P.O. Box 336
Western Springs, IL 60558-0336
www.aerocarlubricants.com
708-246-9027

The following products may be applied as stated below:

Motor Bearing Lube ACT 2112

On both sides, apply a very small drop at the union of each wheel and side rod. (Initially and after every 25 hours of operation). See Figure 3. Apply to all moving parts on the crosshead guides as shown in Figure 4.

Conducta-Lube ACT 3753

Apply a small drop between the inside of each drive wheel and the frame allowing the oil to permeate the bearing axle for each wheel. (Initially and after every 25 hours of operation). See Figure 5.

Apply a small drop on each of the four tender axles where the electrical wiper fingers contact the axles. (Initially and after every 25 hours of operation.) See Figure 6.

When relubricating this area, check to see that the wiper fingers are still properly contacting the wheel axles. If for any reason one or more of the wipers are not making solid contact, remove the axle from the truck frame by slightly widening the frame and pulling out the desired wheelset.

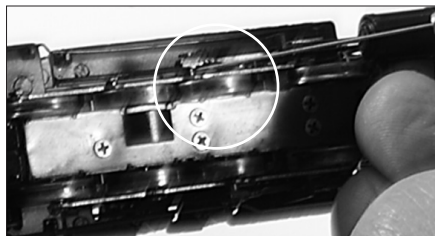


Figure 3 - Apply lubricant to all the side rod connections.

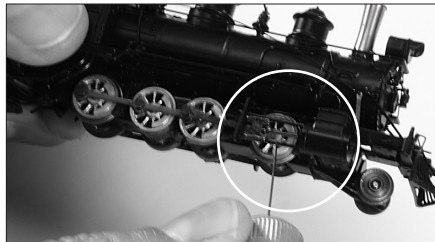


Figure 4 - Apply lubricant to the crosshead guides and piston rods.

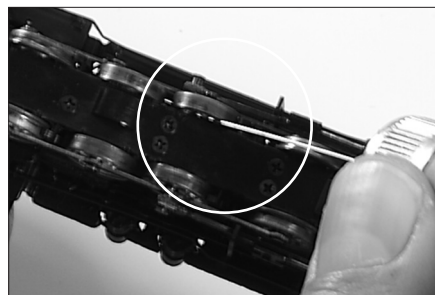


Figure 5 - Lubricate axle bearings with conductive lubricant.

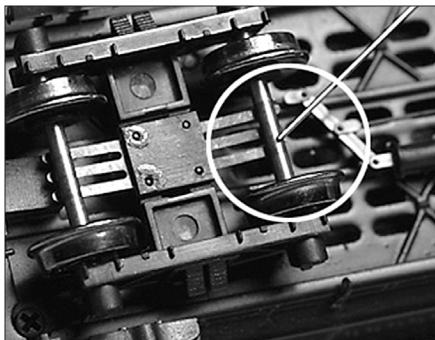


Figure 6 - Lubricate tender axles with conductive lubricant.

Using a small jeweler's screwdriver or pair of small tweezers, carefully bend each wiper finger upward just enough to where each finger will contact the axles when replaced. To replace the wheelset, gently spread the truck frame apart and reinsert in the appropriate location.

Important!

Don't forget that each tender truck is insulated from the rail on one side. The wheels on the front truck are insulated from the left rail pickup, while the wheels of the rear truck are insulated from the right rail pickup. Refer to

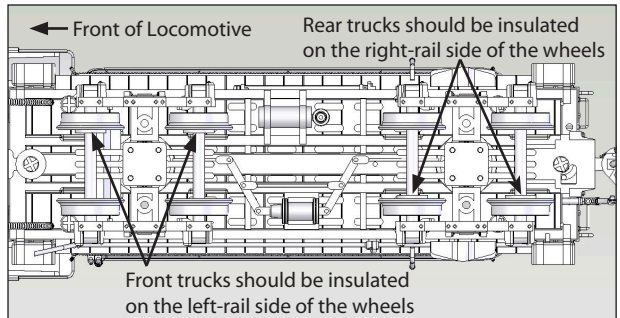


Figure 7 - Proper placement of insulated wheels

Figure 7 for the proper placement of these insulated wheels and be sure to replace accordingly. Failure to adhere to this could cause serious electrical issues with your locomotive. If you have an unexpected loss of electrical contact after replacing wheelsets, this is where you should check first!

NG Jel Gear Lubricant ACT 1111

Inspect the main gears after 50 hours of operation to determine the need of adding more lubrication. If you do not see a reasonable film of grease on the gear teeth, apply an appropriate amount to lightly coat the teeth throughout.

To access the main gears, turn the locomotive upside down and carefully remove the five screws that secure the chassis plate to the underside of the frame.* See Figure 8.

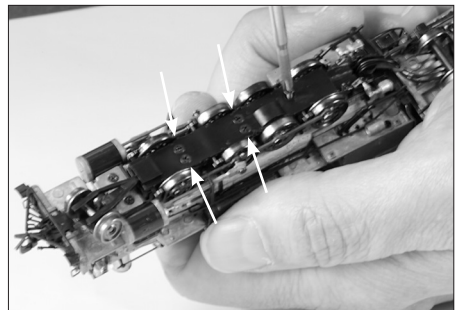


Figure 8 - Remove the five Phillips head screws on the chassis plate.

* Be careful to keep the locomotive upside down! The drivers may come out of the frame if it is tilted to any extreme degree.

Note the gears and inspect for lubrication. See Figure 9. This is also a good time to clean or lubricate the wheel axles if needed. *Remember that an abundance of grease collecting around the gears in the box will attract dirt and other foreign matter. Focus on the gear teeth contact points and avoid over-lubrication of the gearbox.*

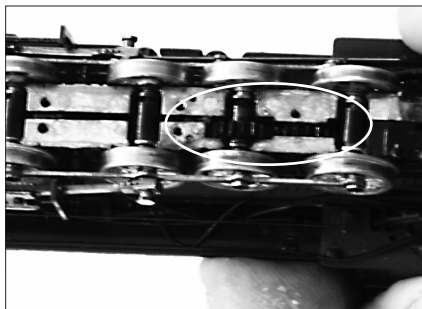


Figure 9 - Inspect gears for lubrication.

Removing the Boiler

Should you desire to remove the boiler from the chassis in order to access the motor assembly or gearbox, please follow these steps:

1. You may remove the tender from the locomotive as discussed on Page 1 of this manual, or simply remove the Phillips head drawbar screw and washer on the tender connection to clearly view the locomotive backhead.
2. With a small hobby screwdriver or blade, pry the firebox door casting away to reveal the rear chassis/boiler screw. Remove this screw. See Figures 10 and 11.

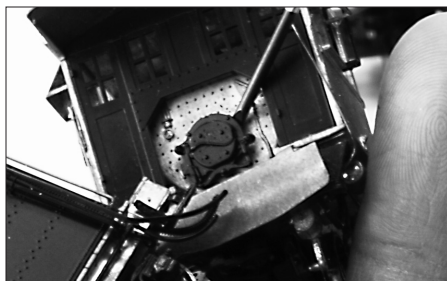


Figure 10 - Remove the firebox door casting.

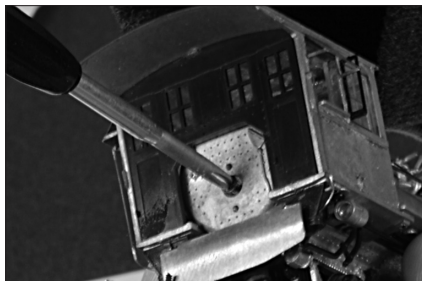


Figure 11 - Remove the chassis/boiler screw.

3. Insert a small flathead screwdriver into the smoke stack, find the screw, and remove. See Figure 12.

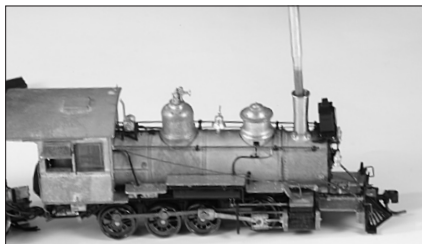


Figure 12 - Remove the smokestack/cylinder casting screw.

4. Remove the boiler supports from each side of the smokebox as shown in Figure 13.
5. With tweezers, gently pull the reversing reach rod on the right side and both of the chest lubricator lines (wires) from the boiler and steam chest tops respectively. See Figure 14.
6. The vertical handrails at the rear of the cab plug into the rear cab support frame located on the chassis. Remember to place these in the proper holes when reassembling.
7. Lift the front and rear of the boiler assembly, rocking it gently, and remove the boiler assembly from the chassis as shown in Figure 15. *Please note that the cab rear handrails, and the cylinder cock wire attached to the cab front, all need special care when separating the boiler from the chassis.*

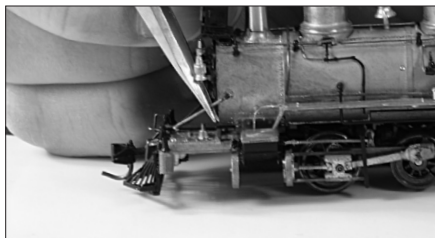


Figure 13 - Remove the boiler supports.

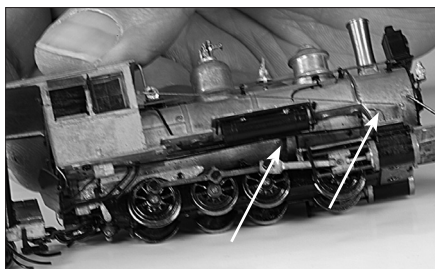


Figure 14 - Remove the reach rod and steam chest lubricator wires.

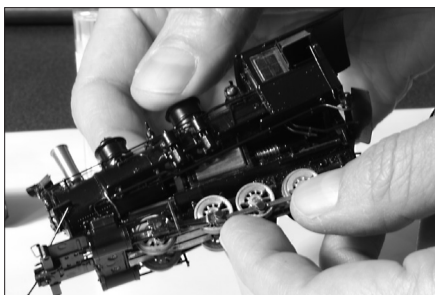


Figure 15 - Gently pry the boiler away from the chassis. Watch for the detail parts!

Accessing the Motor for Maintenance

Motor Bearing Lube ACT 2112:

If you determine that the motor bearings require lubrication, you may apply this oil very sparingly to the motor bearings on each side of the motor.*

* ***Apply this oil only*** if you notice any unusual noise or drag on the motor due to friction at these bearings.

Generally the bearings should last for the running life of the locomotive without supplemental lubrication. Please note that over-lubrication on motor bearings could potentially shorten motor life as excessive lubricant may work into the commutator or magnet areas of the motor. Excessive lubricant in the motor may also simulate a motor overload condition that interferes with the operation of the sound decoder.

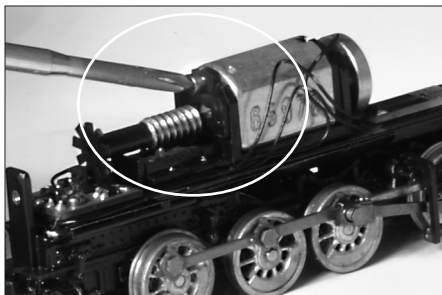


Figure 16 - Remove screw and securement clip.

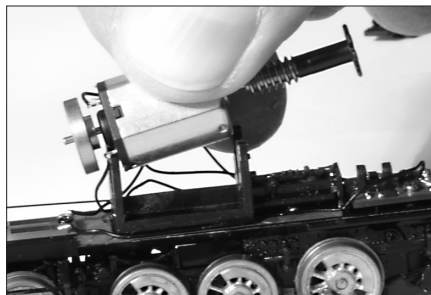


Figure 17 - Remove the motor from cradle.

Procedure for Motor Bearing Lubrication

1. Detach the motor securement clip by removing the Phillips head screw shown in Figure 16, then remove the small plastic part.
2. Pry the motor away from the gearbox cradle. **Note:** *It may be necessary to use a small screwdriver and pry up between the motor and cradle to lift the motor out of the gearbox assembly.* (See Figure 17).
3. Place a *small* drop of lubricant on the front and rear motor shafts where they protrude from the bearing as shown in Figure 18.

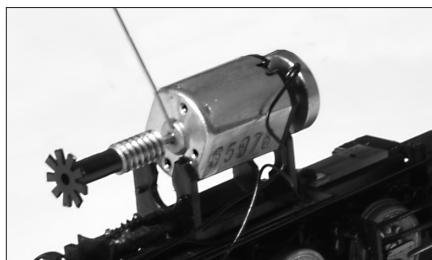


Figure 18 - Lubricate bearings.

Reassemble the C-19

Before reassembling the locomotive, take a moment to review the previous instructions while noting the placement of various detail parts. When re-assembling your locomotive, replace screws with only enough pressure to ensure that the parts properly contact and will not work loose. Over-tightening of screws could hinder operation and movement of certain parts, as well as breaking those that are made of engineering plastic. Inspect the screws that attach the side rods and various moving parts for the proper tightness.

Thank you again for making Blackstone Models products part of your model railroading experience! If you have further questions, contact us at support@blackstonemodels.com.

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