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No. 219 Motorized Derrick Car

OPERATOR'S MANUAL

Compatibility

The 219 Derrick Car will operate on any traditional Standard Gauge tubular track system, including M.T.H.'s tubular track. It is also compatible with most standard AC transformers. (See page 8 for a complete list of recommended transformers.)

PLEASE READ BEFORE USE AND SAVE

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CAUTION: ELECTRICALLY OPERATED PRODUCT:

Recommended for Ages 14 and up. Not recommended for children under 14 years of age without adult supervision. As with all electric products, precautions should be observed during handling and use to prevent electric shock.

WARNING: When using electrical products, basic safety precautions should be observed, including the following: Read this manual thoroughly before using this device.

- M.T.H. recommends that all users and persons supervising use examine the hobby transformer and other electronic equipment periodically for conditions that may result in the risk of fire, electric shock, or injury to persons, such as damage to the primary cord, plug blades, housing, output jacks or other parts. In the event such conditions exist, the train set should not be used until properly repaired.
- Do not operate your layout unattended. Obstructed accessories or stalled trains may overheat, resulting in damage to your layout.
- This train set is intended for indoor use. Do not use if water is present. Serious injury or fatality may result.
- Do not operate the hobby transformer with damaged cord, plug, switches, buttons or case.

This product may be protected by one or more of the following patents: 6,019,289; 6,280,278; 6,281,606; 6,291,263; 6,457,681; 6,491,263; 6,604,641; 6,619,594; 6,624,537; 6,655,640.

Lubrication

Wheels, Axles, and Pivot Points

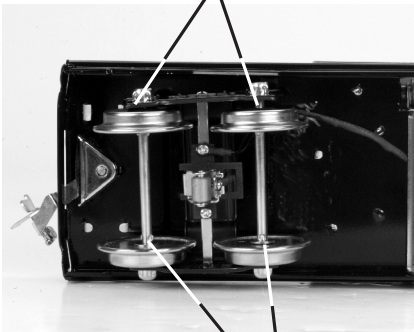
The wheels, axles and pivot points should be regularly lubricated using a light household oil. Using an applicator or a toothpick, apply a small drop of oil on the axle or pivot point at the following locations:

- Where the axle meets the truck side frame
- Where the axle meets the wheels
- The ends of the shaft for the cable spool.
- The ends of the shaft for the boom pivot.

Gears

The gears should be lubricated regularly using a white lithium grease. Apply the grease to the gears using an applicator or a toothpick.

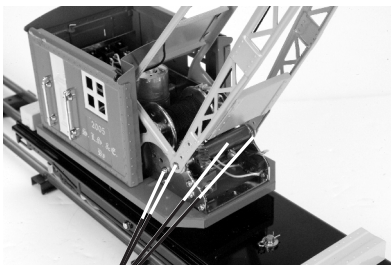
Oil Both Sides



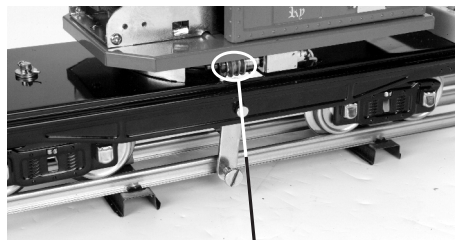
Oil Both Sides



Grease



Oil



Grease

Operation

Unlike the traditional No. 219 Derrick Car, the swing of the boom, the raising and lowering of the hook and the swing of the cab in this version are operated by electric motors. Also there is a removable electromagnet that is controlled by an on board switch.

The crane is designed to operate from track voltage between 12 18V AC. This voltage can be obtained from most any toy train transformer.

A transformer compatibility chart can be found on page 8 .



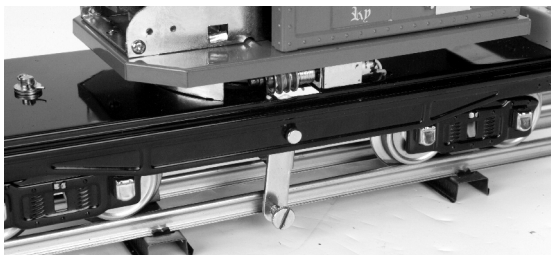
The motors are controlled by small 3-position, center off slide switches. The electromagnet is controlled by a 2 position on - off switch. The switches controlling the magnet, the boom and the hook are concealed behind the door at the rear of the cab. The switch for controlling the rotation of the cab is located on the rear toolbox.

CAUTION: DO NOT ATTEMPT TO MOVE THE BOOM, THE SPOOL OR THE HOOK CABLE OR ROTATE THE CAB BY HAND. ANY OF THESE PROCEDURES COULD DAMAGE THE PRECISION GEARBOXES.

The crane has a built-in anchor, located under the car chassis.

Anchor

- Before maneuvering the crane or attempting to lift any objects, the crane must be anchored to a section of track. The track section must be secured to flat surface with screws.
- Swing down the anchor and secure the anchor to the track using the built in Thumbscrew.



Cab Rotation

The cab can be rotated 360 degrees clockwise or counterclockwise using the electric motor.

To rotate the cab clockwise, move the switch button to the right. The cab will continue to rotate in the clockwise direction until the switch slide is returned to the center off position

To rotate the cab counterclockwise, move the switch button to the left. The cab will continue to rotate in the counterclockwise direction until the switch slide is returned to the center off position.

CAUTION - DO NOT ROTATE THE CAB BY HAND

Boom Movement

The boom can be raised and lowered.

CAUTION - DO NOT ALLOW THE BOOM MOTOR TO RUN AFTER THE BOOM HAS REACHED ITS UPPER OR LOWER LIMIT

The Boom has upper and lower limit switches. The motor should stop when the boom reached the maximum or the lower limit of travel. The boom will not move until the control switch is moved to the opposite direction.

To raise the boom, move the slide on the switch labeled BOOM to the up position. The boom will continue to raise until the switch slide is moved to the center off position.

To lower the boom, move the slide on the switch labeled BOOM to the down position. The boom will continue to lower until the switch slide is moved to the center off position.

Hook Movement

The hook can be raised and lowered.

CAUTION - DO NOT ALLOW THE HOOK MOTOR TO RUN AFTER THE HOOK HAS REACHED ITS UPPER OR LOWER LIMITS?

The hook does not have built in limit switches.

RUNNING THE HOOK MOTOR AFTER THE HOOK HAS REACHED ITS LIMITS CAN DAMAGE THE PRECISION GEARBOXES.

- To raise the hook, move the slide on the switch labeled HOOK to the up position. The hook will continue to raise until the switch slide is moved to the center off position.
- To lower the hook, move the slide on the switch labeled HOOK to the down Position. The hook will continue to lower until the switch slide is moved to the center off position.

Magnet Operation

The No. 219 Derrick Car is equipped with a removable Electromagnet. The electromagnet is attached to the crane by placing the hook of the crane into the loop on the top of the magnet.



The power is applied to the electromagnet through a connector near the center of the boom.

The electromagnet is controlled by a 2 position slide switch.

A red light inside the cab indicates when the power is applied to the electromagnet.

CAUTION - DO NOT LEAVE THE MAGNET ENERGIZED FOR MORE THAN 90 SECONDS.

IF LEFT ENERGIZED THE ELECTROMAGNET CAN OVERHEAT

To energize the electromagnet move the slide on the switch labeled MAGNET to the up position. The electromagnet will remain energized as long as the switch is left in the up position.

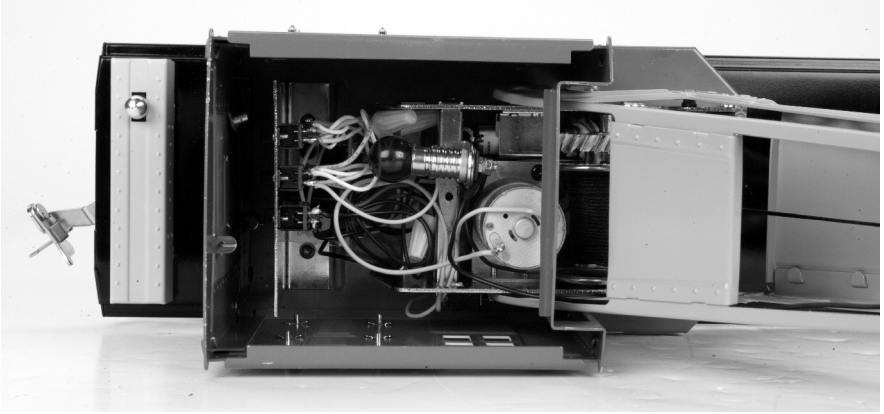
To deenergize the electromagnet, move the slide on the switch labeled MAGNET to the down position.

The electromagnet can be removed from the crane. To remove the electromagnet, remove the hook from the loop in the electromagnet and unplug the wires from the connector located in the boom.

Maintenance

Light Bulb Replacement

The light bulb in your crane can easily be replaced by sliding back the roof on the cab and unscrewing the light bulb from the light socket.



Replacement light bulbs can be obtained directly from any M.T.H. Authorized Service Center or directly from the M.T.H. Parts Department (Order online: www.mth-railking.com, e-mail: parts@mth-railking.com, Fax: 410-423-0009, Phone: 410-381-2500, Mail: 7020 Columbia Gateway Drive, Columbia MD 21046-1532,).

RECOMMENDED AC TRANSFORMERS

Transformer Model	Center Rail	Outside Rail	Min/Max. Voltage	Power Rating	Transformer Type
MTH Z-500	Red Terminal	Black Terminal	0-18v	50-Watt	Electronic
MTH Z-750	Red Terminal	Black Terminal	0-21v	75-Watt	Electronic
MTH Z-1000	Red Terminal	Black Terminal	0-21v	100-Watt	Electronic
MTH Z-4000	Red Terminal	Black Terminal	0-22v	390-Watt	Electronic
Lionel 1032	U	A	5-16v	90-Watt	Standard
Lionel 1032M	U	A	5-16v	90-Watt	Standard
Lionel 1033	U	A	5-16v	90-Watt	Standard
Lionel 1043	U	A	5-16v	90-Watt	Standard
Lionel 1043M	U	A	5-16v	90-Watt	Standard
Lionel 1044	U	A	5-16v	90-Watt	Standard
Lionel 1053	U	A	8-17v	60-Watt	Standard
Lionel 1063	U	A	8-17v	60-Watt	Standard
Lionel LW	A	U	8-18v	75-Watt	Standard
Powermaster	U	A	8-18v	135VA	Electronic
All-Trol	Left Terminal	Right Terminal	0-24v	300-Watt	Electronic
Dallee Hostler	Left Terminal	Right Terminal			Electronic
Lionel LW	A	U	8-18v	75-Watt	Standard
Lionel KW	A or B	U	6-20v	190-Watt	Standard
Lionel MW	Outside Track Terminal	Inside Track Terminal	5-16v	50V.A.	Electronic
Lionel RS-1	Red Terminal	Black Terminal	0-18v	50V.A.	Electronic
Lionel RW	U	A	9-19v	110-Watt	Standard
Lionel SW	U	A	Unknown	130-Watt	Standard
Lionel TW	U	A	8-18v	175-Watt	Standard
Lionel ZW	A,B,C or D	U	8-20v	275-Watt	Standard
Lionel Post-War Celebration Series ZW	A,B,C or D	Common	0-20v	135/190 Watt	Electronic

* Conventional Mode Only

Service & Warranty Information

How to Get Service Under the Terms of the Limited One-Year Warranty

When you suspect an item is defective, please check the operator's manual for standard operation and troubleshooting techniques that may correct the problem. Additional information may be found on the M.T.H. Website. Should you still require service, follow the instructions below to obtain warranty service.

First, e-mail, write, call or fax M.T.H. Electric Trains or a M.T.H. Authorized Service Center (ASC) in your area to obtain Repair Authorization. You can find the list of ASCs on the M.T.H. Website, www.mth-railking.com. Authorized Service Centers are required to make warranty repairs on items sold *only* from that store; all other repairs may-- or may not be done at the store's own discretion. If you did not purchase the item directly from the ASC, you will need to select a National Authorized Service Center (NASC) or contact M.T.H. Electric Trains directly. NASC Dealers are compensated by M.T.H. to perform warranty service for any customer whose repair qualifies for warranty service. A list of NASC retailers can be located on the M.T.H. Website or by calling 410-381-2580. Should the warranty no longer apply, you may choose either an ASC or NASC retailer to service your M.T.H. Product. A reasonable service fee will be charged.

CAUTION: Make sure the product is packed in its original factory packaging including its foam and plastic wrapping material to prevent damage to the merchandise. There is no need to return the entire set if only one of the components is in need of repair *unless otherwise instructed by the Service Center*. **The shipment must be prepaid and we recommend that it be insured. A cover letter including your name, address, daytime phone number, e-mail address (if available), Return Authorization number (if required by the service center, a copy of your sales receipt and a full description of the problem must be included to facilitate the repairs. Please include the description regardless of whether you discussed the problem with a service technician when contacting the Service Center for your Return Authorization.**

Please make sure you have followed the instructions carefully before returning any merchandise for service. Authorized M.T.H. Service Centers are independently owned and operated and are not agents or representatives of M.T.H. Electric Trains. M.T.H. assumes no responsibility financial or otherwise, for material left in their possession, or work done, by privately owned M.T.H. Authorized Service Centers. If you need assistance at any time email MTH Service at service@mth-railking.com, or call 410 381-2580.

Limited One-Year Warranty

All M.T.H. products purchased from an Authorized M.T.H. Retailer are covered by this warranty. See our Website to identify an Authorized M.T.H. Retailer near you.

M.T.H. products are warranted for one year from the date of purchase against defects in material or workmanship, excluding wear items such as light bulbs, pick-up rollers, batteries, smoke unit wicks, and traction tires. We will replace or credit (at our option) any defective item with a manufactured suggested retail price of \$279.95 or less (excluding all motive power and electronic items), if the item is returned to an M.T.H. Authorized Service Center (ASC) or M.T.H. National Authorized Service Center (NASC) within one year of the original date of purchase. For any item with an MSRP greater than \$279.95 (including all motive power and electronics), We will repair, replace or credit (at our option) the defective item without charge for the parts or labor, if the item is returned to an M.T.H. Authorized Service Center (ASC) or M.T.H. National Authorized Service Center (NASC) within one year of the original date of purchase. This warranty does not cover damages caused by improper care, handling, or use. Transportation costs incurred by the customer to ship the product for warranty service are not covered under this warranty.

Items sent for repair must be accompanied by a return authorization number, a description of the problem, and a copy of the original sales receipt from an Authorized M.T.H. Retailer stating the date of purchase. If you are sending this product to an Authorized Service Center, contact that Center for their return authorization.

This warranty gives you specific legal rights, and you may have other rights that vary from state to state. Specific questions regarding the warranty may be forwarded to M.T.H. directly.

Service Department
M.T.H. Electric Trains
7020 Columbia Gateway Drive
Columbia MD 21046-1532
410-381-2580
service@mth-railking.com