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# **Manual Type G**

## **Manual of Operation**



# Manual Type G

## Section 1

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## Manual Type G

### Section 2

#### General Information

This manual consists of information, which will be useful in operating and maintaining your Miner Manual Type G™ equipped cars. These instructions are issued to supply acceptable methods for the operation, maintenance, troubleshooting, and safety information to the user, which is in addition to safety, precautions prescribed by the AAR, FRA and individual handling railroads.

It is important, before proceeding with operation or maintenance of your cars, that you carefully read and understand the SAFETY PRECAUTIONS, SECTION 3 of this manual.

It is expressly understood that issuance of these Miner instructions which were prepared in good faith and are believed to be complete and accurate, shall not be construed to mean that Miner Enterprises, Inc. assumes any liability on account of accidents to persons or property involving the Miner Manual Type G™.

Miner Enterprises is not responsible for car construction or design, including modifications for mechanism application.



## Manual Type G

### Section 3

### Safety Precautions

In addition to safety precautions prescribed by the car owner, loading site, unloading site, repair shop and handling railroad, the following safety precautions must be observed whenever a Miner Manual Type G™ is operated and whenever any maintenance is performed on it.

1. All maintenance, repair, or adjustment must be made on a shop or repair track where the car will not be moved.
2. Protective eye wear and hearing protection should be used during operation.
3. All personnel must stay clear of the car when the doors are being operated. This includes the main operating lever areas.
4. Do not operate the doors manually unless the car has completely stopped moving.
5. When operating the doors manually, the operator must stand clear of all the doors and operating mechanism. The operator must also have an assistant on each side of the car to ensure that everyone stands clear of the car doors.
6. Do not attempt to force the door system in any way.
7. Do not load or move car unless all door connecting links are over center (locked) and the secondary lock is in the locked position.
8. During car construction, the doors should always be secured until the mechanism is properly adjusted per Adjustment Procedures, when rolling a car upside down or right side up. *(Do not rely on the Mechanism to keep the doors closed, while the railcar is being rotated.)*

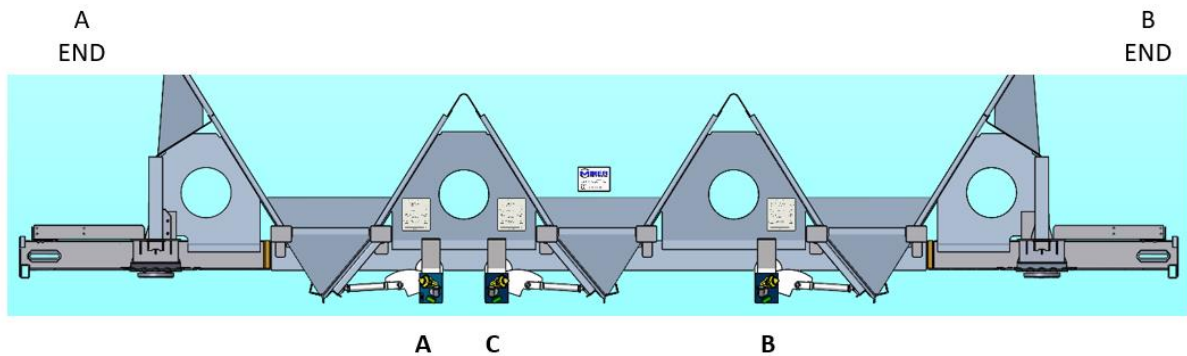
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### Component Identification

The Manual Type G was designed for use on a single hopper on rail cars. The purpose of this device is to rapidly discharge commodity from the railcar. There is one device per hopper, and all devices will open and close individually.

It is important, before proceeding with operation or maintenance of your cars, that you carefully read and understand the SAFETY PRECAUTIONS SECTION 3 of this manual.



### Component List

For a complete list of parts, descriptions, and Miner part numbers refer to the latest revision of the Customer Schedule . This can be obtained at the Miner Enterprises Inc. customer portal web page located at <http://www.minerent.com/customers> or call 630 232 3000.

### Drawing Package

A complete set of drawings can be obtained at the Miner Enterprises Inc. web page located at <http://www.minerent.com/customers> or call 630 232 3000.

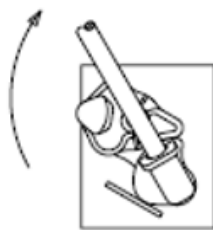
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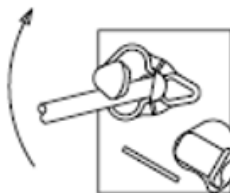
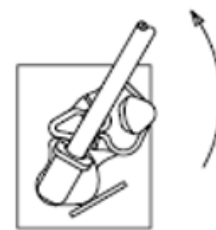
### Operating Instructions

The Manual Type G was designed for use on a single hopper on rail cars. The purpose of this device is to rapidly discharge commodity from the railcar. There is one device per hopper, and all devices will open and close individually.

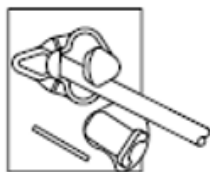
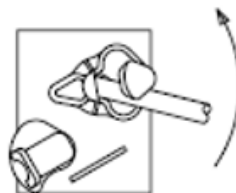
The Mechanical System: This includes the main operating assembly, door operating levers, operating shaft, connecting links, and secondary lock.



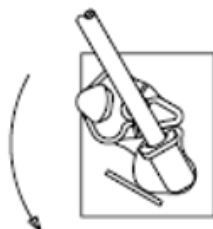
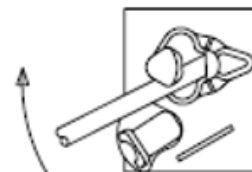
TO UNLOCK INSERT 1-1/4" DIA. SQUARE END OPERATING BAR INTO LATCH DOG AND ROTATE AS SHOWN.



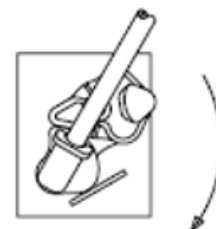
TO RELEASE DOOR INSERT OPERATING BAR INTO OPERATING HANDLE AND ROTATE AS SHOWN.



TO CLOSE DOOR INSERT OPERATING BAR INTO OPERATING HANDLE AND ROTATE AS SHOWN UNTIL MECHANISM SNAPS OVER-CENTER.

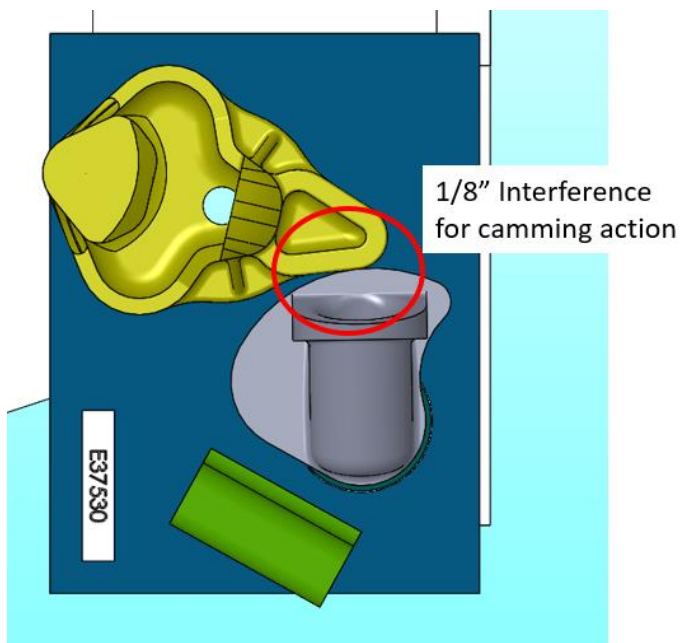


TO SECURE LOCK HANDLE IN PLACE, INSERT OPERATING BAR INTO LATCH DOG AND ROTATE AS SHOWN.



## Secondary Lock Engagement

Once primary lock is engaged, the lock handle is rotated such that lock handle and operating handle make contact. The 1/8" interference prevents the operating handle from rotating in a direction that would allow the disengagement of the primary lock.



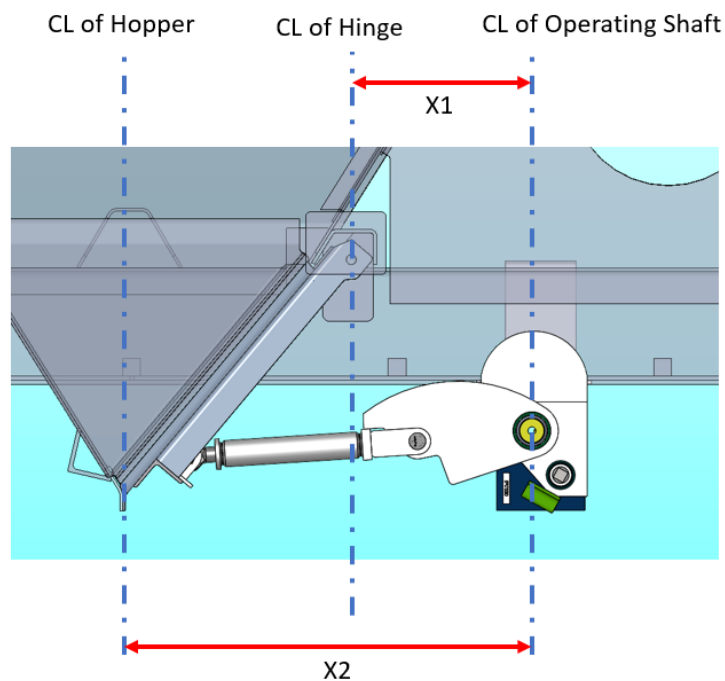
The lock handle is not required to touch the angle stop. The angle stop is there to prevent over-rotation of the lock handle. The images show full engagement of the operating handle in primary lock position. The lock handle is rotated to a position that wedges into contact with the operating handle.

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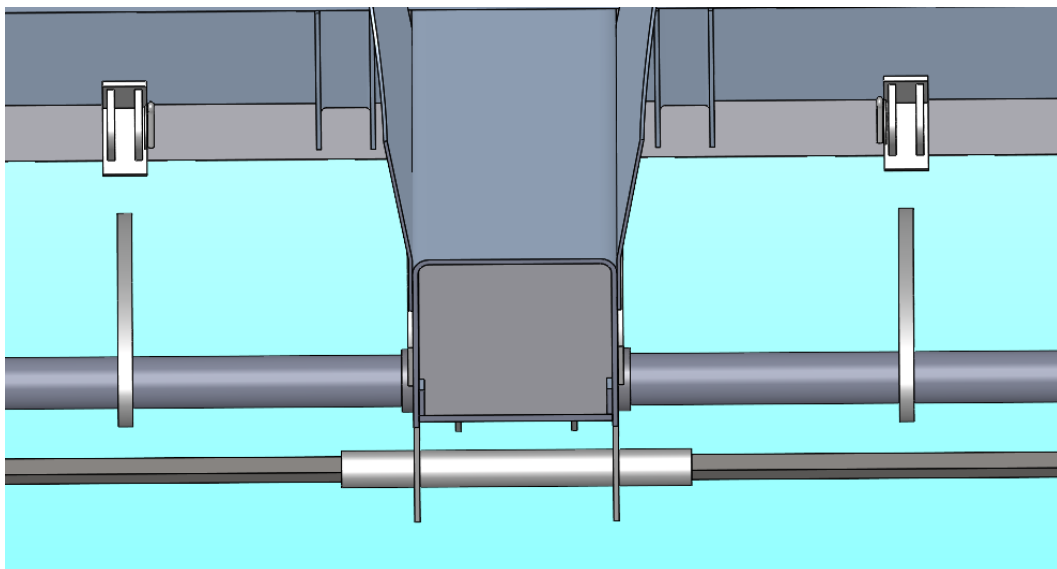
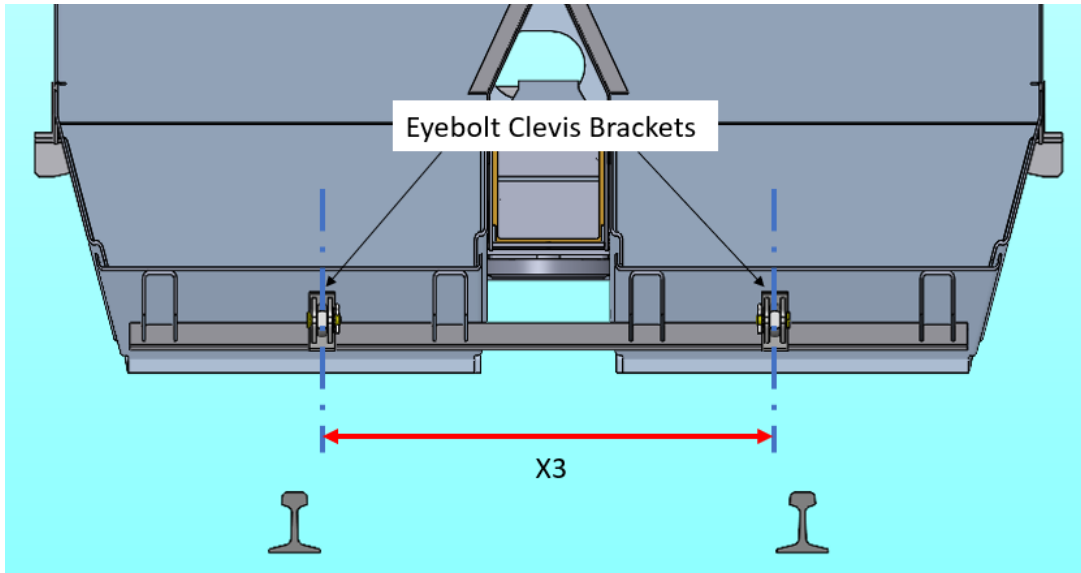
### Installation Instructions

Mount the Door Operating Lever Assembly on the center sill. Use the General Arrangement to identify the dimensions. Mark the locations, as noted below, on both sides of the center sill. Insure the assembly is level and square. Tack weld both sides of the assembly to the Center Sill.

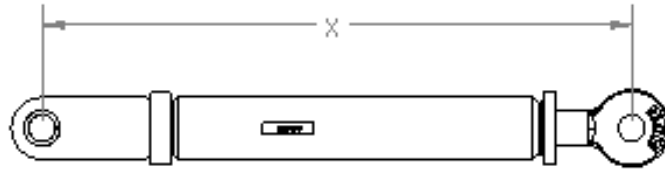




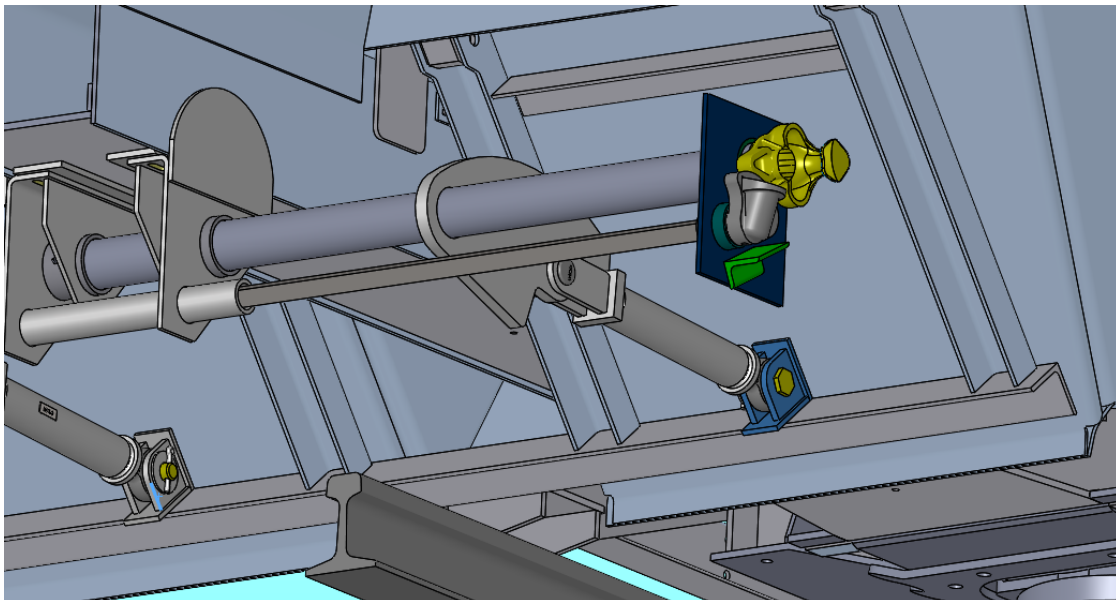
Mount the Eyebolt Clevis Brackets on to the door. Use the General Arrangement to identify the dimension between the eyebolt clevis bracket centers. Insure that the bracket is in line with the levers. Tack weld the Eyebolt Clevis Brackets to the door.



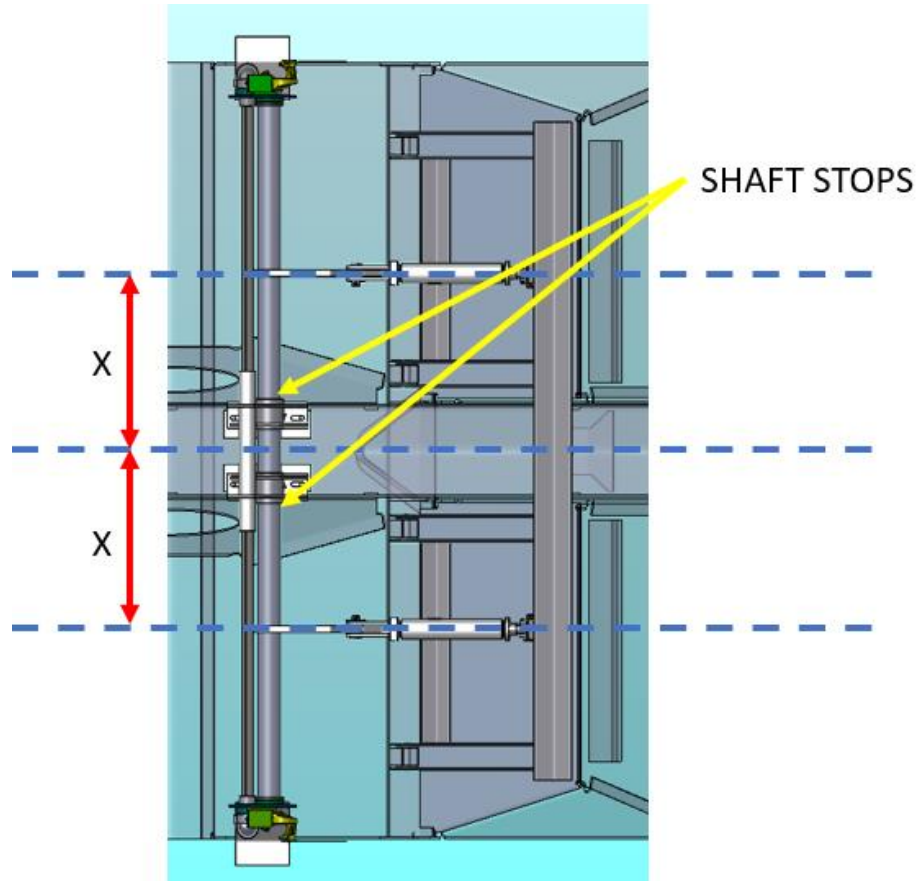
Pre-Adjust the Connecting Link Assemblies.



Apply the Connecting Link Assemblies to the Door Operating Lever and Clevis Eyebolt Bracket on the door using pins, washers and cotter pins.



Properly adjust the Operating Shaft to ensure that the dimensions from the center of the sill to the center of the levers on each side are the same. Use the General Arrangement to identify the dimensions.



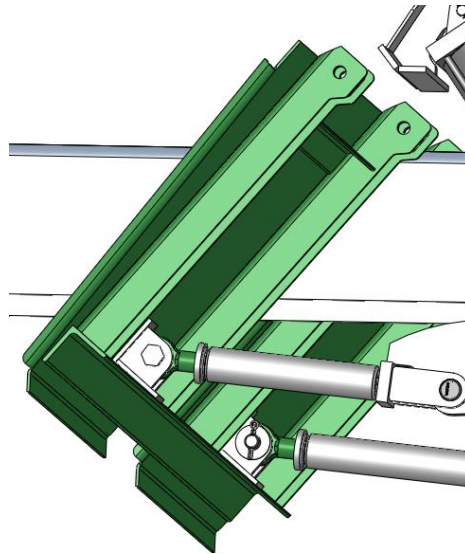
Weld the Shaft stops in place using 0.25" welds at 1.5" long, 180 degrees apart to secure the stops to the operating shaft.

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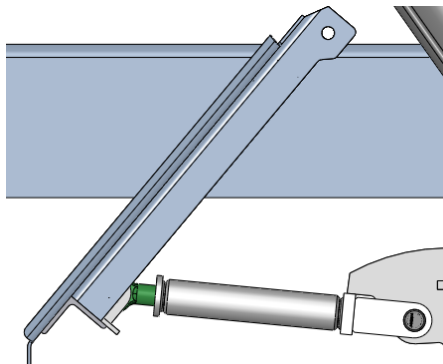
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#### Adjustment Procedures

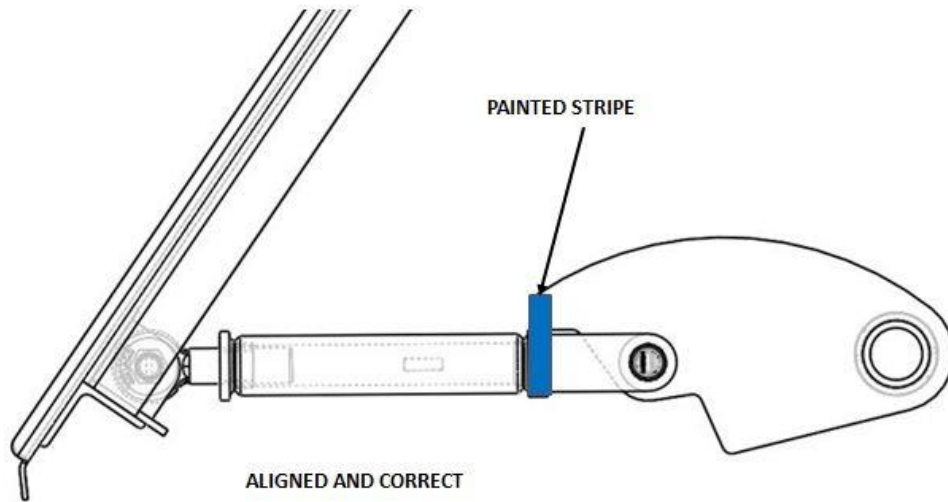
The Manual Type G was designed and built for triple hopper rail cars. The purpose of this device is to rapidly discharge commodity and will open and close simultaneously. The doors provide a means to retain the commodity in the car and prevent any leakage.



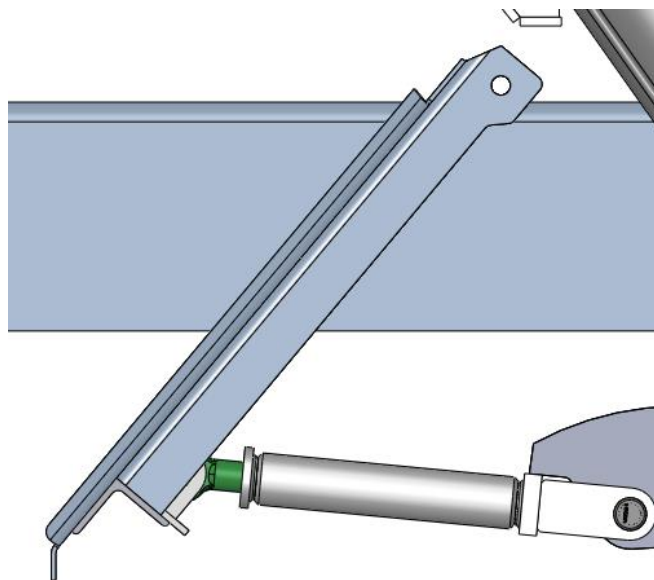
Close and secure the doors. The eyebolts on the Connecting Link Assembly must be backed off to allow mechanism to fully close.



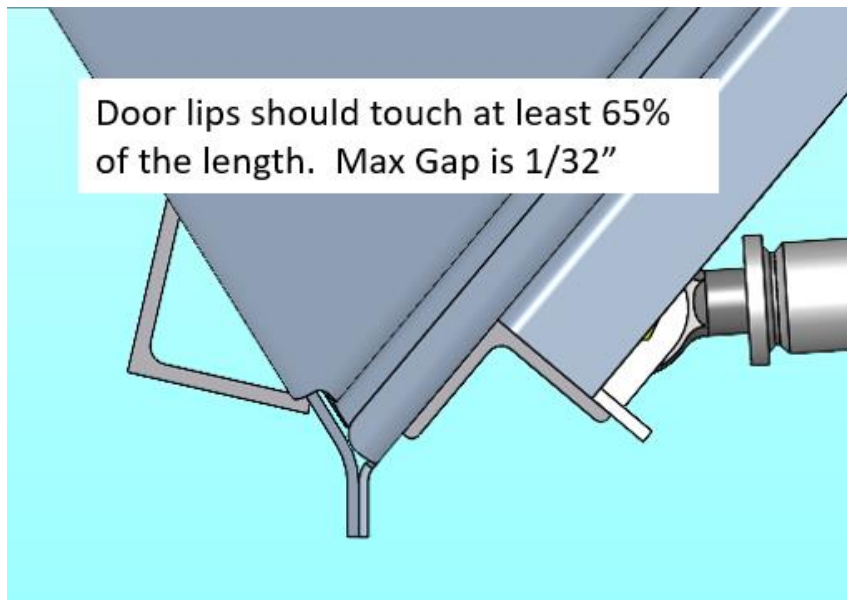
The Lever Assembly should be locked over-center.



Adjustment is made by removing pin at the eyebolts on the Connecting Link Assembly when doors are open and turn eyebolt so as to increase length of link. Be sure that both eyebolts are turned the same number of rotations.



Check that doors are closed tightly. (*Check before each loading and after each unloading*)





## Manual Type G

### Section 8

### Inspection Procedures

The Manual Type G was designed for use on a single hopper on rail cars.

Read and understand the SAFETY PRECAUTIONS SECTION 3 of this manual.

In the event of malfunction or damage to the components of the system, the parts are to be replaced.

Check for damaged welds and components. (*Inspect Before each loading and after each unloading.*)

Contact Miner Enterprises for assistance in replacing damaged or missing components.

Check for damaged or missing bolts. (*Inspect once per year.*)

Contact Miner Enterprises for assistance in replacing damaged or missing components.

Replace and repair with like components.