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OPERATION AND MAINTENANCE MANUAL FOR PORTABLE ROOF RIGGER

MODEL: MRR250A-3 x 6

Serial No.

WARNING!

You must read and fully understand or have these instructions explained to you before using this equipment. Failure to observe the limitations, cautions and warnings in these instructions can cause a loss of protection and an exposure to a fall from which serious injury, disability or death may result!

Please keep these instructions available for immediate reference. If you have any questions about any part of these instructions please contact MIO MECHANICAL CORPORATION immediately for clarification.

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**MIO® Portable Roof Rigger
Model: MRR250A-3x6**

The MIO® Roof Rigger is designed to be used in window cleaning industry and/or other situations where manual descent is needed by one suspended worker with manual bosun's chair or saddle.

Technical Specifications

Parameter	MRR250A-3x6
Working load - lb. (one worker)	250
Max. working load including tools	310
Tested Static Load — lb. (CAL. OSHA)	1000
Unit weight, aluminum (lb.)	173
Counterweight — lb.	504 12pcs. @ 42 lbs.
Counterbalance safety factor	4:1
Outreach (in.)	36
Length from front wheels to rear wheels (in.)	72
Height from eyebolt to ground (in.)	71
Width between center of front wheels (in.)	54
Width between center of rear wheels (in.)	36
Wheels, rubber tires, 13" dia.	6
Locking brake – front wheels	2ea.
Forged eyebolts for tie-back diameter (in.)	5/8
Breaks down to small easily portable sections	yes

PORTABLE ROOF RIGGER MODEL NO. MRR250A-3x6

The MRR-250A-3x6 models has a three-dimensional design consisting of telescoping aluminum tubes. (Fig. 1 — Geometric Parameters)

The roof rigger consists of individual lightweight components to allow for easy assembly, disassembly, and transport through doors, hallways and roof hatches. One worker, without tools or fasteners using the attached pins (LP) and clips (HP), can perform the assembly and disassembly. Pins always have to be anchored off by clips while the roof rig is in use. To fix the position of the rigger, the front cart has hand brake.

During use, the rigger (Fig.2) is locked in place using the front handbrake (pos.1) thereby providing a safe, stable, and secure anchor point for the suspended worker.

The rigger design incorporates six (6) rubber tires (pos. 8). The counterweight (pos. 7) for the rigger consists of 12 pieces totaling 504 lbs.

The maximum working load for this equipment is 250 lb. (one worker) and an additional 60 lbs for tools.

When using this equipment, federal law (OSHA) requires that two backup safety lines be used. One line must secure the Roof Rigger to suitable Tie-Back Anchor, while the other must be a safety backup fall arrest line (Fig.3, Fig 4.) for suspended worker. Coworker must have their own independent safety backup fall arrest line.

The fall arrest line consists of the following elements:

- 1) Anchor
- 2) A lifeline (synthetic rope)
- 3) A rope grab with up to 3 ft. lanyard
- 4) A worker's harness with back D-ring

MIO® Roof Rigger provides a safety factor of 4:1 as per OSHA regulations and ANSI recommendations. Tested to meet CAL.OSHA.

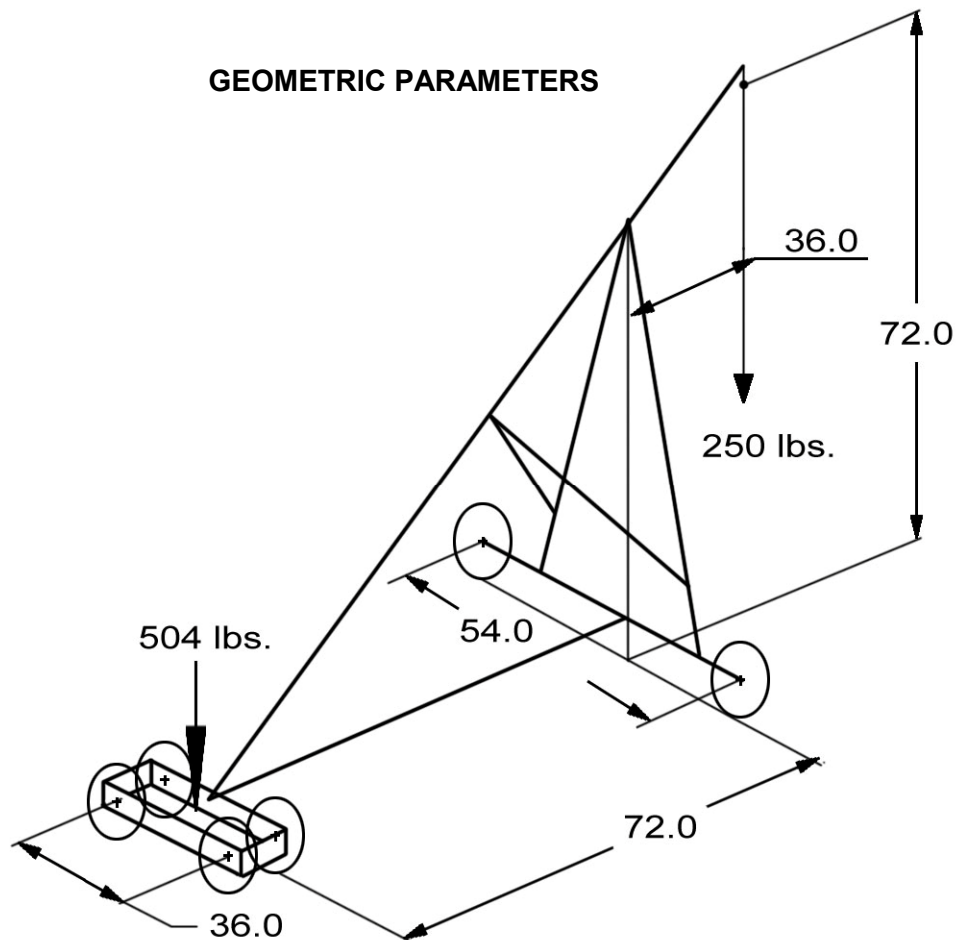


Figure 1

MRR250A-3x6

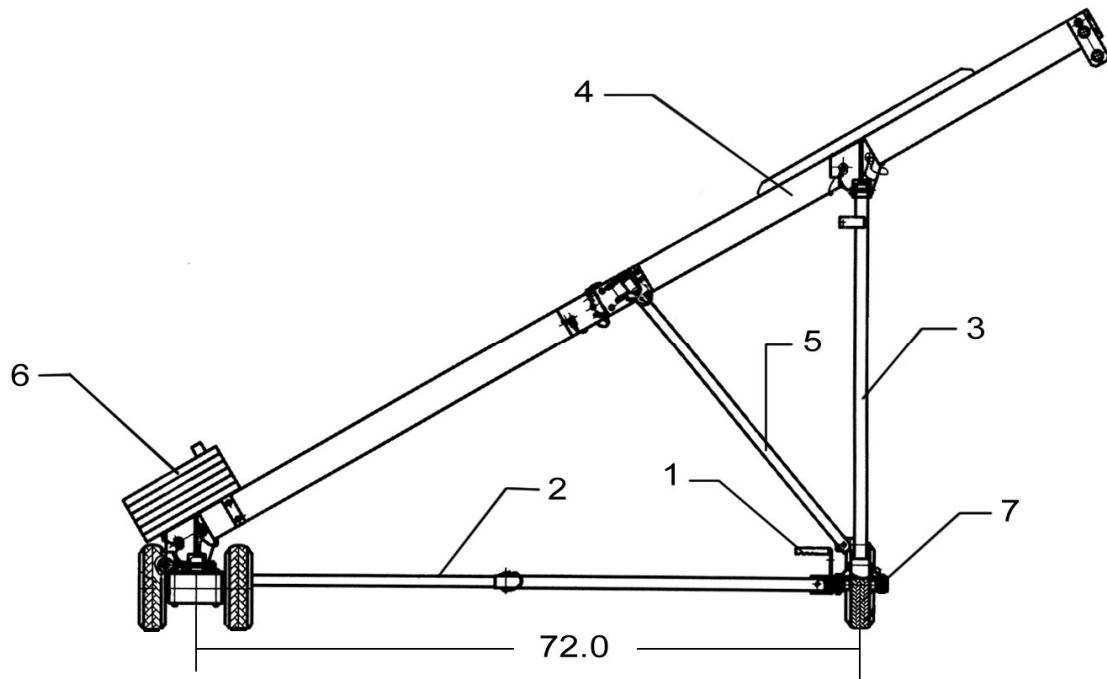


Figure 2
MRR250A - 3x6

1. Front Cart with Brakes
2. Telescoping Tubes (horizontal frame)
3. Front Folding Support
4. Davit
5. Strut (right and left)
6. Counter Weight
7. Rubber Tires
8. Descent (work) line attachment point

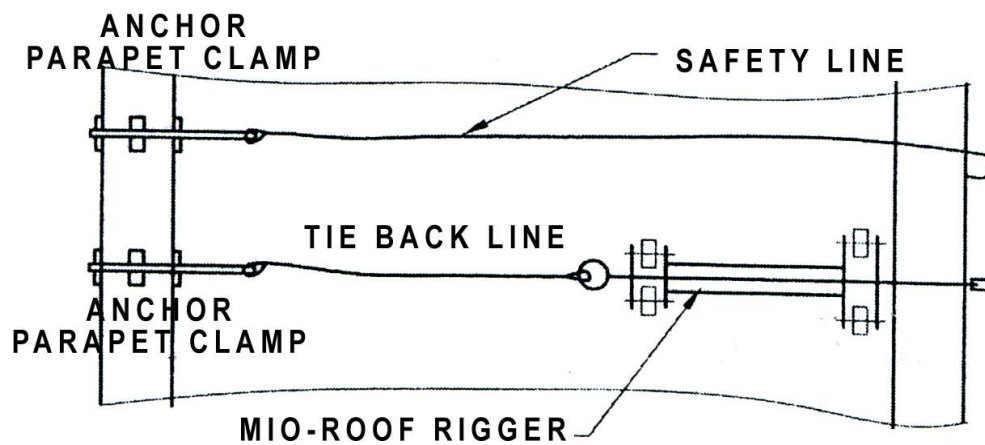
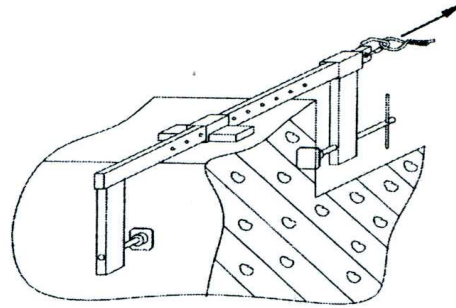


Figure 3

Attachment for tie back line or safety line



**Figure 4
PARAPET CLAMP**

WARNING!

Prior to taking the MRR-250A to the roof of a building, the worker must be properly trained in the operation of the unit.

ASSEMBLY

Note: Select a safe and adequate space on the roof of a building away from the edge.

Once assembled, if no parapet is available, make sure the front tires of the Roof Rigger are at least one foot away from the edge of the roof at all times.

The assembly is performed according to the following sequence:

Step #1.

Place the rear cart in the proper position (Fig. 5).

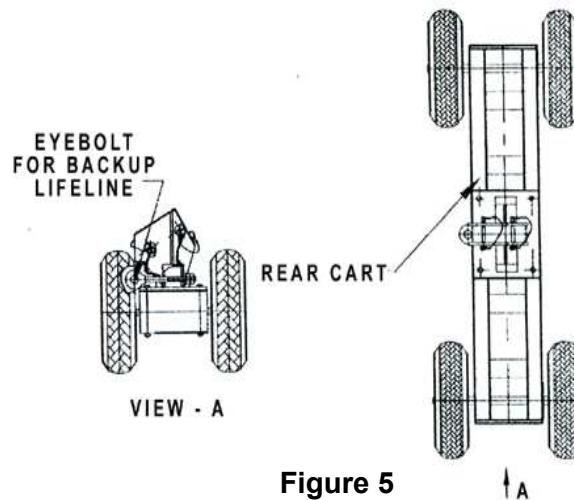


Figure 5

Step #2

Place the telescoping tubes into the rear cart and attach the tube ends using the pins and clips. Fix the center extension of the telescoping tubes using the pins and clips (Fig. 6)

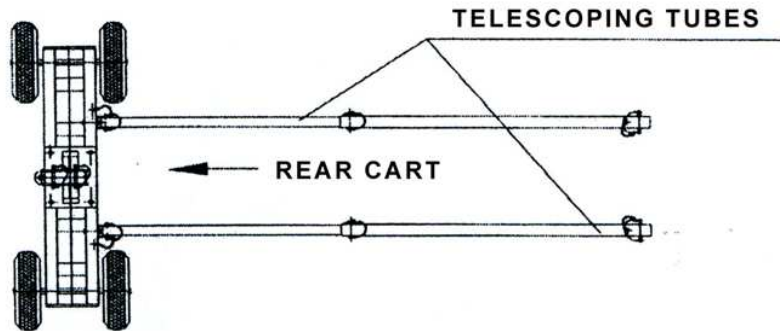


Figure 6

Step #3

Place the front cart in front of the telescoping tubes, align, and connect the telescoping tubes to the cart using the attached pins and clips (Fig. 7).

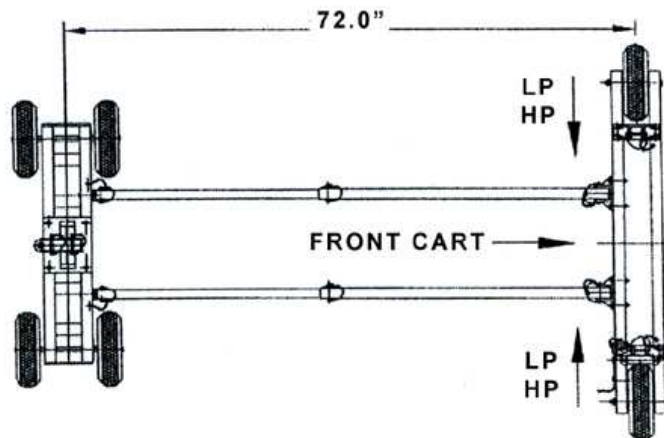


Figure 7

Step #4

Install the front support into the front cart and fix with attached pins and clips. (Fig. 8)

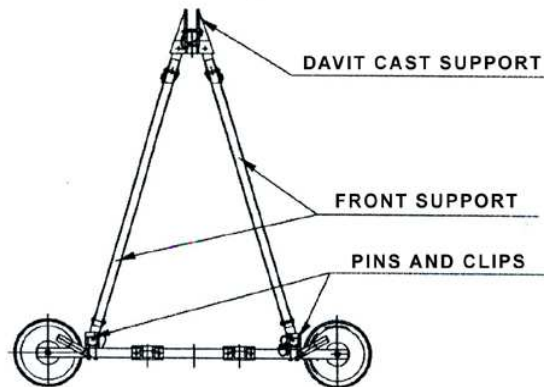


Figure 8

Step #5

Assemble the Davit (Fig. 9) using the attached pins and clips.

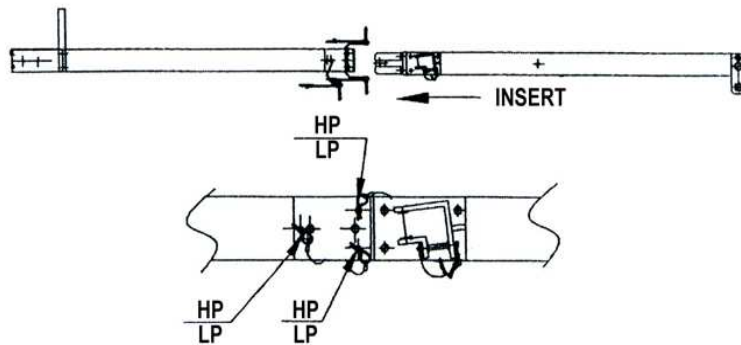


Figure 9

Step #6

Install the Davit onto the front cast support and rear cart assembly as shown on (Fig.10) and lock in position using the attached pins and clips.

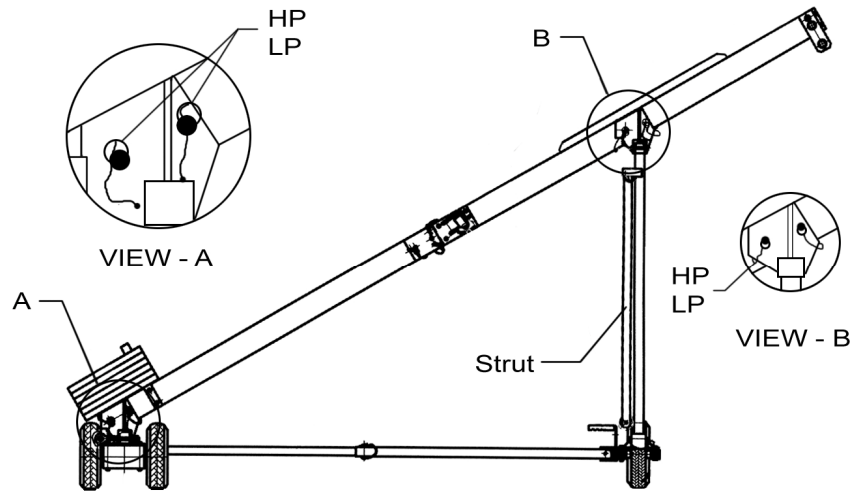


Figure 10

Step #7.

Detach the free ends of the left and right struts from the folding front support and pivot and install onto the davit using the attached pins and safety clips (Fig. 11).

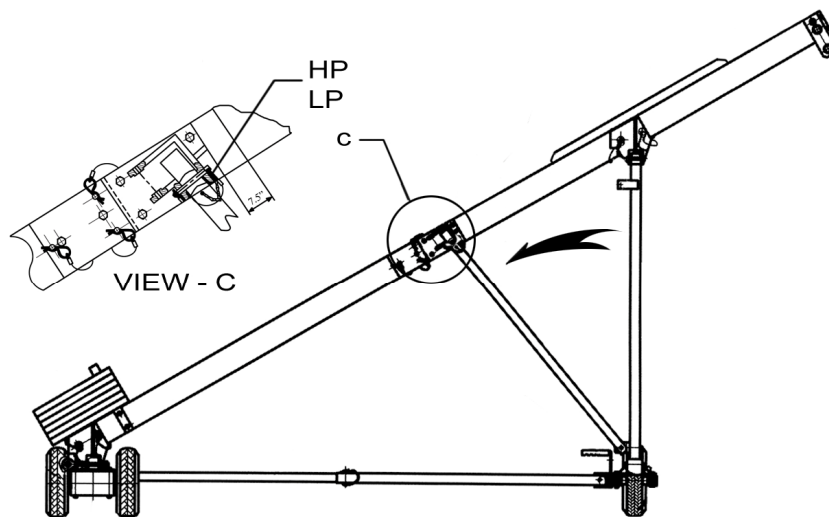


Figure 11

Step #8

Install the counterweights on the rear cart (Fig. 12) and secure them using the chained pin and attached clip.

Note: MRR250A – 3x6 requires 12 counterweights (Total wt. 504 lb.)

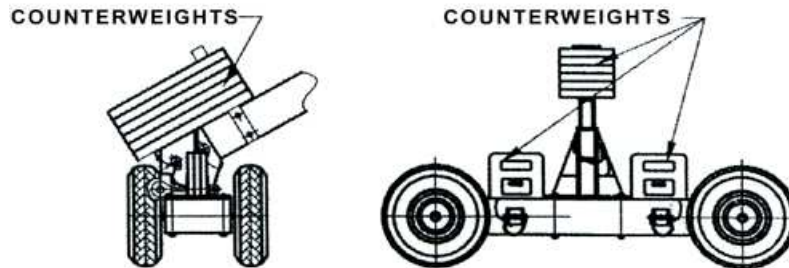


Figure 12

Step #9.

Unlock the brake lever(s) to shift the MRR250A to the transit position. Position the rigger for use and relock the brake lever, securing them with the attached pins and clips. (Fig. 13)

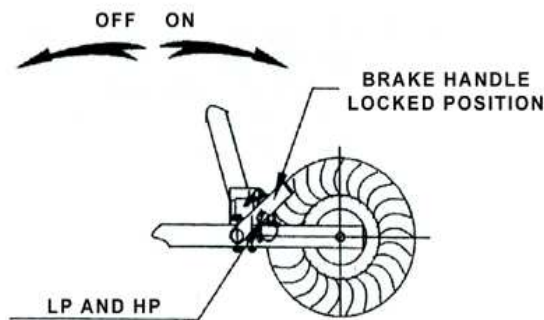


Figure 13

Step #10

You may now attach your tie back lifeline. Please review the previous drawing (Fig. 3 and 4).

Step #11

Connect the descent (work) line to the attachment point on the Roof Rigger (Fig. 2)

Step #12

The MRR250A is ready for use.

Caution: the unit is now in transit mode and must be returned to working mode prior to use for supporting a suspended worker.

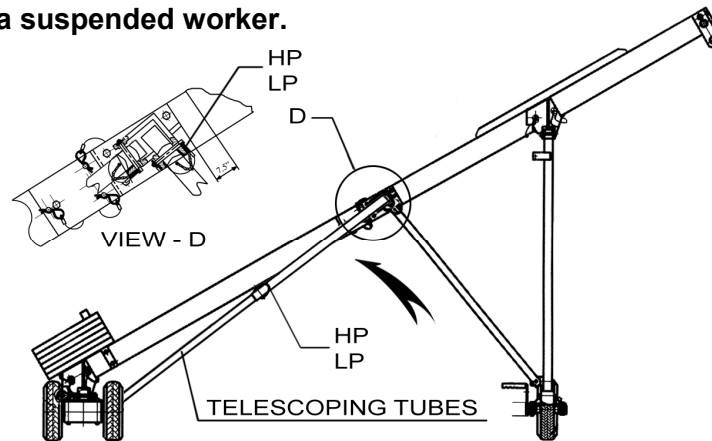


Figure 14

WARNING:

ATTENTION! Be sure that all LP are installed in the proper positions and fixed using HP as shown in Figure 3. Inspect all fasteners.

Unlock the brake and shift the Portable Roof Rigger from the assembly position to the first working position. Re-lock the brake using LP and HP.

Safety lifeline must have a minimum strength of 6000 lbs. and be attached to an independent anchor. The rope grab must be attached to the line and the other end of the lanyard must be attached to the back D-ring of the worker's harness. The two Safety Lines meet OSHA requirements for 5400 lbs.

During the usage of the Portable Roof Rigger it is often necessary to lift and fix the telescoping tubes due to the present obstacles on the roof. In order to do it, take off the lock pins, then take of telescoping tube ends from the Front Cart, lift them and fix it on by pins on the Davit Truss Plate (Fig. #14).

ATTENTION! Unlock the brake and shift the MRR-250A from the working location to a safe location for disassembly. Re-lock the brake using LP and HP. During the disassembly, always remove the HP first and then the LP.

Disassembly is performed according to the following sequence of steps:

- 1. Detach all ropes and cables from the MRR-250A.**
- 2. Remove the counterweights.**
- 3. Detach the free ends of the hinges (H) from the Davit Truss and fix them to the front folding support.**
- 4. Detach tile Davit Truss with the extension of the truss from the unit by unlocking LP and place it on the work surface.**
- 5. Detach the Davit Truss from the extension of the truss by unlocking LP.**
- 6. Detach tile front folding support by unlocking LP.**
- 7. Detach the telescoping tubes by unlocking LP.**

WARNING: Horizontal movement of a worker suspended from a transportable device.

ANSI/IWCA I-14.2001 [5.7.17 (f)] Suspension Devices for Rope Descent Systems (RDS)

f) Horizontal movement of a worker suspended from a transportable device is strictly prohibited unless:

- 3) its tie-back anchorage and safety line anchorage are independent of each other and have been specifically designed for such movement and repositioning under load and;**
- 4) a method is used to protect the suspension lines from abrading horizontally against the roof edge, parapet wall or other building feature or appurtenance;**
- 5) employees moving transportable devices shall be tied off with a personal fall protection system as outlined in section 9.2**

ATTENTION! Make sure the descent (work) line is always vertical.

WARNINGS!

- Read, understand, and follow all instructions and warnings, attached to and/or packed with this unit before each use and follow all local, state, and federal regulations regarding the use of transportable rigging/suspension equipment.**
- The product should not be used if any part of the instruction label is missing. New labels can be obtained by calling MIO Mechanical Corporation at 215-676-7828.**
- Improper use of this equipment could result in serious injury or death.**
- Inspect before each use. If any part or component shows damage or excessive wear or does not function properly, the entire device should be removed from service.**
- For use by properly trained personnel only.**
- Never use MRR-250A for other than the intended use.**
- Never use if the total workload exceeds 310 lb.**

- **Any person suspended from the MRR-250A must use an independently anchored safety backup fall arrest line, which must be fully hooked up before attaching to the descent system.**
- **The MRR-250A must be independently anchored using the eyebolt on the rear cart.**
- **Do not suspend powered equipment from the MRR-250A.**
- **Make sure that the brakes are always engaged during work.**
- **Do not interchange components from one MRR-250A to another.**
- **Do not suspend more than one person from the MRR-250A.**
- **Use only the weights supplied with the MRR-250A as counterweights.**
- **Do not use less than the provided number of counterweights.**
- **Make sure that the weights are secured with a restraining chain.**
- **Do not make any modifications to the MRR-250A.**
- **MIO Mechanical Corp. reserves the right to change the design of the product without notice.**