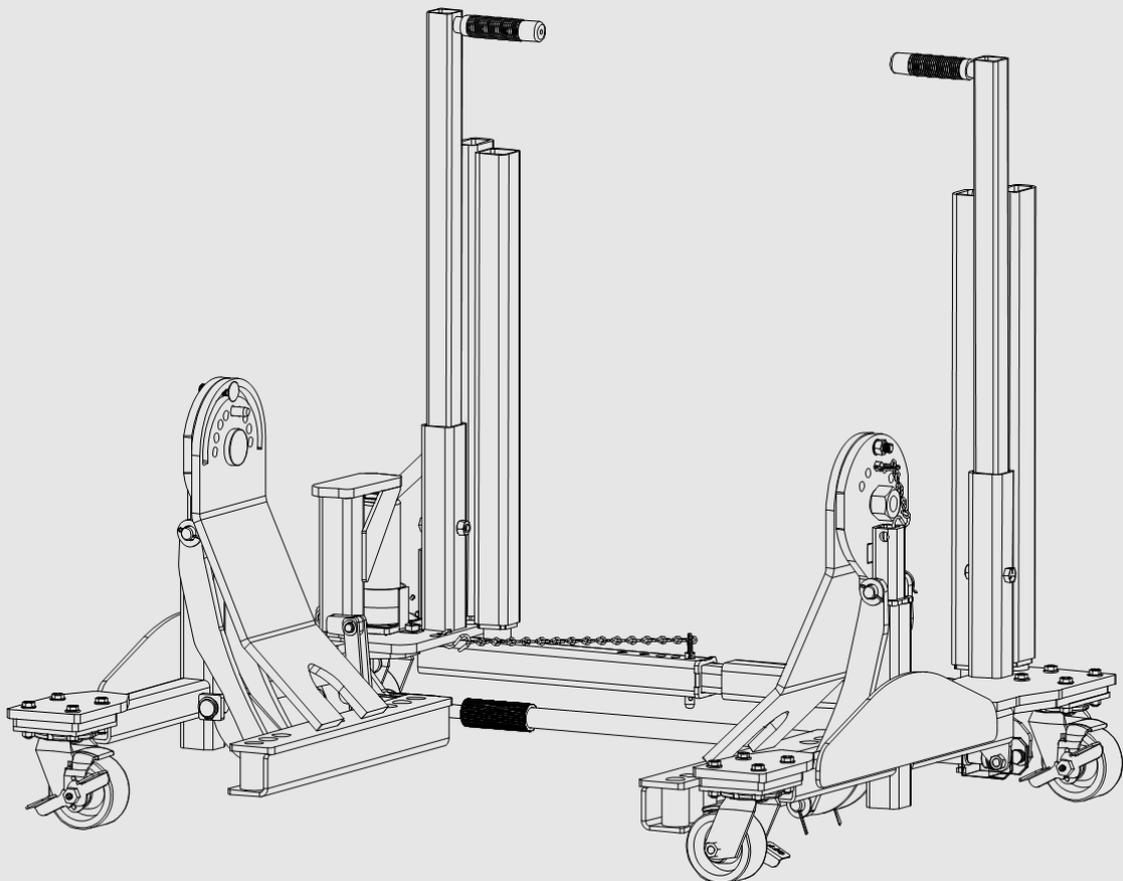


MAHLE CWD-600

EN

Operation Manual
Wheel Handler





**EVERY PERSON WHO OPERATES THIS
EQUIPMENT NEEDS TO KNOW AND
UNDERSTAND ALL OF THE INFORMATION IN
THIS MANUAL – FAILURE TO DO SO COULD
RESULT IN SERIOUS INJURY OR DEATH.**

**READ THIS MANUAL
CAREFULLY AND
RETAIN FOR YOUR
RECORDS**

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1. Safety Regulations

1.1 Warnings

To avoid serious injury or death, read this manual carefully before operating this wheel handler. Contact the manufacturer using the contact information on the back cover of this manual if you have any questions.

Failure to understand and obey safety instructions may result in unsafe or improper use of this product.

- ⚠ Maximum capacity for the wheel handler is printed on a tag located near the bottle jack. Never use the wheel handler to raise or support more than maximum capacity. Never use the wheel handler as a holding device to support more than maximum capacity.
- ⚠ Do not use the wheel handler for any purpose other than that in which it was designed.
- ⚠ Do not use the wheel handler in a manner that is beyond its designed limit.
- ⚠ Never place any part of your body under the wheel handler or the wheel being held.
- ⚠ Never move the wheel handler in a rough manner or over uneven, unlevel, dirty, or severely cracked floors. Move only on smooth, clean, and level surfaces.
- ⚠ Always use the wheel handler on a hard level surface capable of supporting the weight of the loaded wheel handler.
- ⚠ Do not modify or alter the wheel handler in any way.
- ⚠ Do not use any adapters that were not supplied by the manufacturer.
- ⚠ Never use blocks or cribbing devices in conjunction with the wheel handler.
- ⚠ Always keep the wheel lowered as far as possible while moving the loaded wheel handler.

Failure to understand and obey this warning may result in personal injury and/or property damage.

2. Foreword

2.1 From the manufacturer

Thank you for your purchase. To complement the offering of A/C, fluid and nitrogen service equipment, MAHLE Service Solutions has partnered with Gray Manufacturing to provide the highest quality hydraulic and pneumatic equipment available for the professional service technician. This equipment adheres to high standards promised in the MAHLE guarantee including the assurance of innovation and reliability that comes with the Gray Manufacturing name. Please contact MAHLE Service Solutions' customer service at (800) 468-2321 or tech.mss@us.mahle.com with any comments or questions.

3. Symbols Use

3.1 Signal words

Signal words call attention to a safety message or messages, or a property damage message or messages, and designate a degree or level of hazard seriousness. Signal words used in this manual include:

Keyword	Probability of occurrence	Severity of danger if instructions not observed
DANGER	Immediate impending danger	Death or severe injury.
WARNING	Possible impending danger	Death or severe injury
CAUTION	Possible dangerous situation	Minor injury
NOTICE	Possible damage to property	Possible property damage

4. Responsibilities

4.1 Receiving inspection

Before attempting to operate this equipment, thoroughly read and understand this manual. Completely remove all tape and packaging. Inspect the equipment immediately upon delivery. If shipping damage is evident, inform the delivering carrier immediately and contact the manufacturer using the contact information on the back cover of this manual.

4.2 Owner and/or operator responsibilities

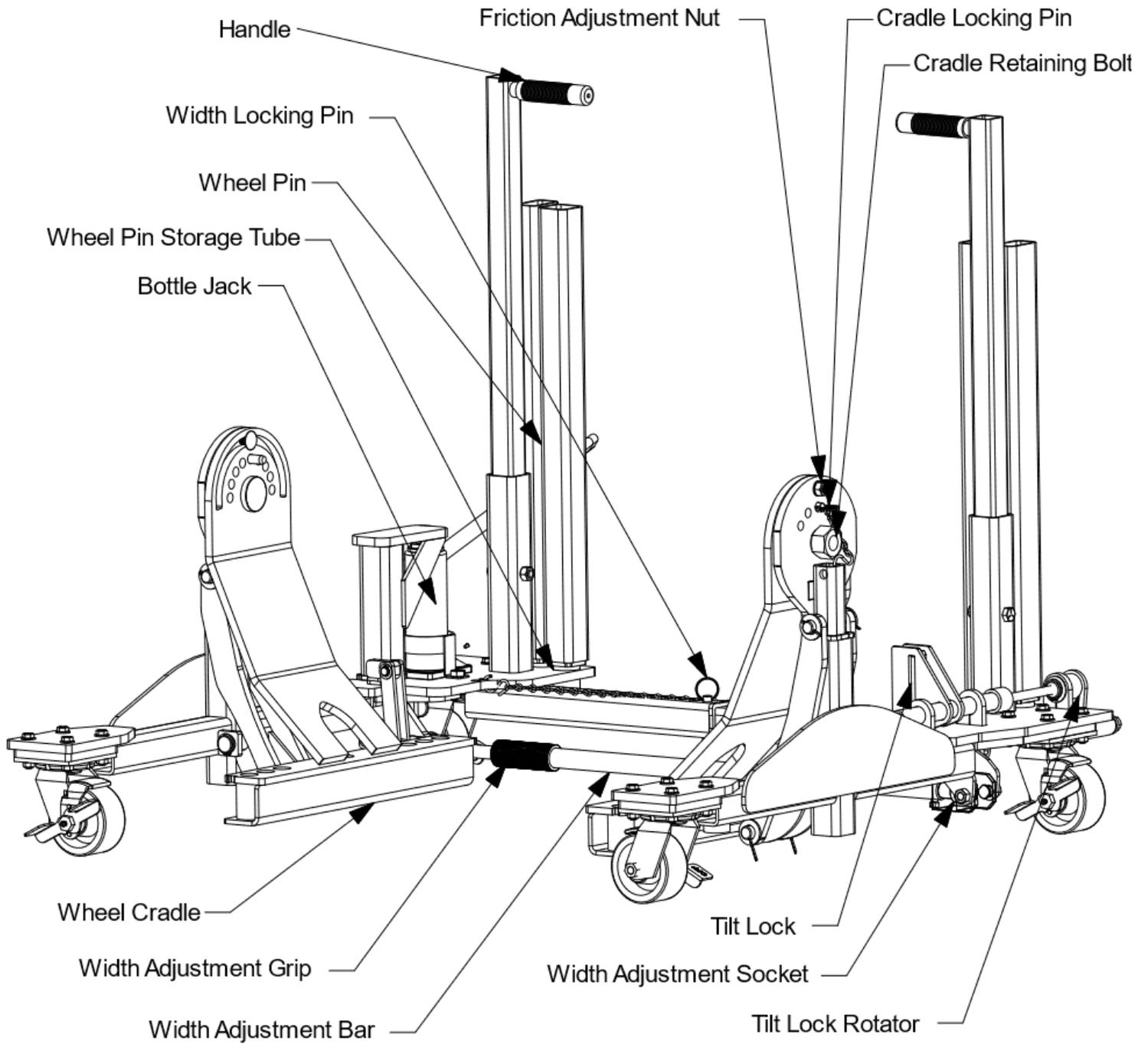
The owner of this equipment must read these instructions and maintain them for future reference and for instructing any other users of the equipment. The owner is responsible for keeping all warning labels and instruction manuals legible and intact. Replacement labels and literature are available from the manufacturer. The owner must never authorize or allow anyone to use this equipment until the operator has read and understood the information in this manual and on the accompanying labeling on the equipment itself.

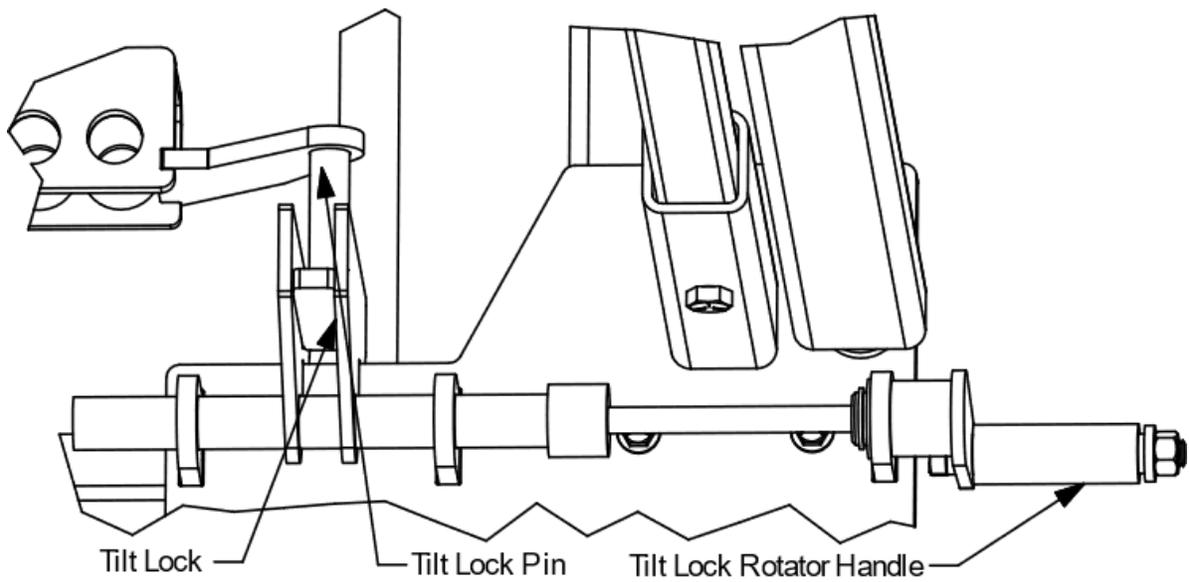
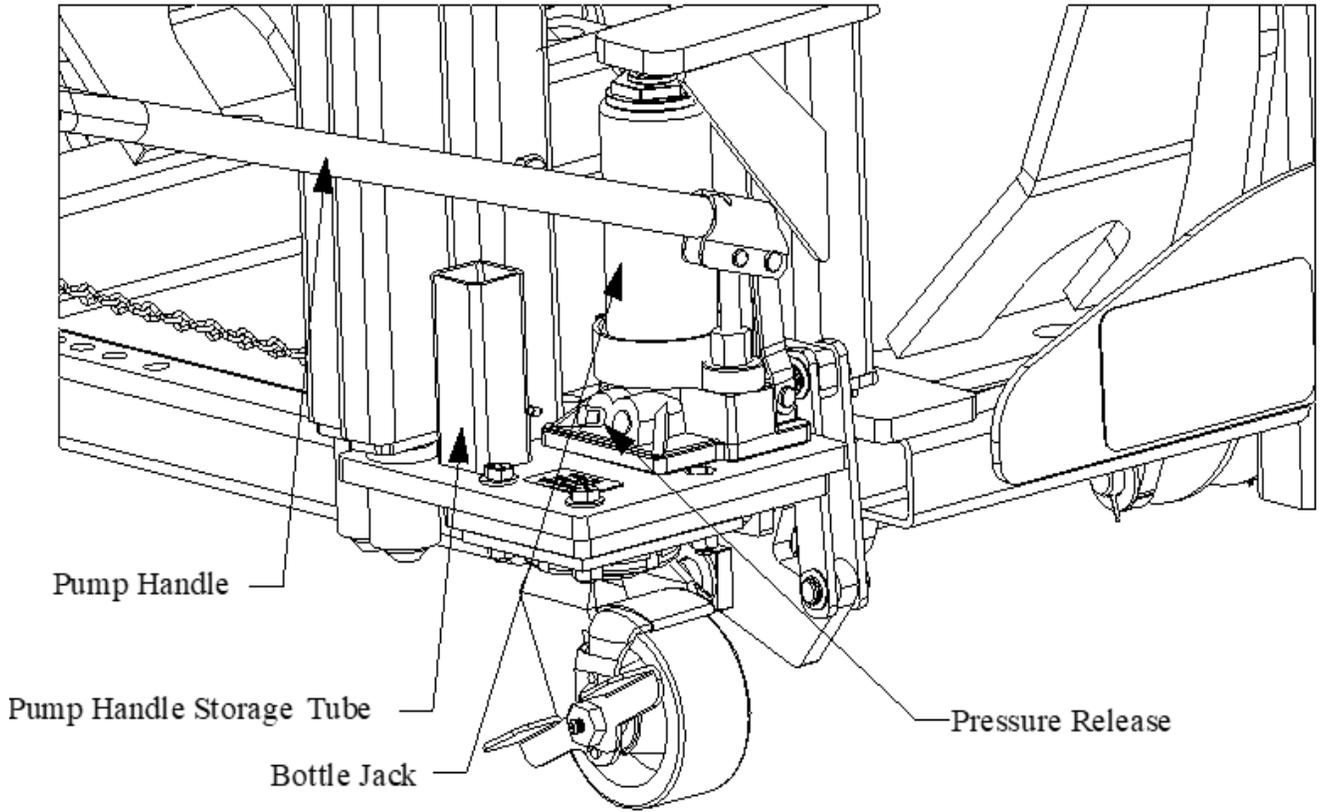
If this equipment is being used in an occupational setting (or workplace), the employer should ensure that all personnel working with and around the equipment know of the risks associated with its use. Personnel involved in the use and operation of this equipment shall be careful, competent, trained, and qualified in the safe operation of the equipment and its proper use when servicing motor vehicles and their components. Safety information provided with this equipment should be emphasized by the employer and understood by each employee. The employer must make this manual available to all personnel using this equipment and all personnel must read and understand the contents of this manual. If the operator is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in the operator's native language by the employer, making sure that the operator comprehends its contents and observes the proper procedures for use of this equipment.

5. Specifications

Model CWD-600	US units	Metric units
Maximum capacity	600 lbs.	272 kg
Minimum Tire Diameter	30 in	76.2 cm
Maximum Tire Diameter	47 in	119.4 cm
Stroke	6.25 in	15.9 cm
Width	46 in – 57 in	116.9 cm – 144.8 cm
Depth	48 in	121.9 cm
Height	40.75 in	103.5 cm
Weight	341 lbs.	155 kg

6. Component Identification





7. Assembly and Operation

7.1 Assembly Instructions

1. Remove all packaging and locate the bag containing the assembly hardware.
2. The wheel handler can be removed from the pallet at any time during assembly. It may be easier to remove from the pallet with the handles installed.
3. Place the handles in the handle retaining tubes and secure using the ½" bolts and nuts provided. The handles can be oriented as desired, toward the center of the wheel handler or toward the outside.
4. Place the wheel pins in their storage tubes.
5. Place the bottle jack's pump handle in the short tube near the bottle jack until ready to use.

7.1 Preparing the Vehicle for Wheel Removal

WARNING

Use appropriate lifting equipment and follow all instructions provided with the lifting equipment.

1. Loosen lug nuts and any other hardware required for wheel removal, if necessary.
2. Lift the vehicle or trailer using an appropriate lifting device so that the wheel to be removed is off the ground just enough to place the wheel handler under the wheel to be removed. Follow the instructions supplied with the lifting equipment.
3. Support the vehicle or trailer with appropriate vehicle support stands. Follow the instructions supplied with the support stands.
4. Ensure the stability of the vehicle or trailer.

7.3 Removing the Wheel

WARNING

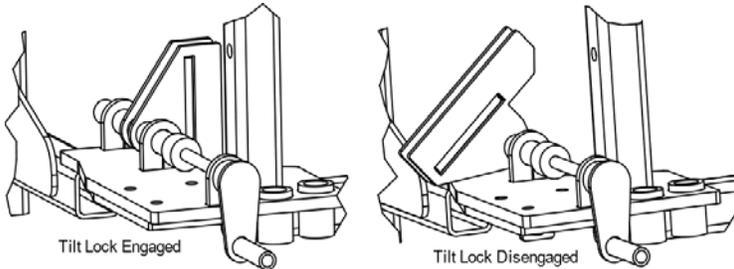
Do not raise or support any of the vehicles weight when raising the wheel handler to capture the wheel.

CAUTION

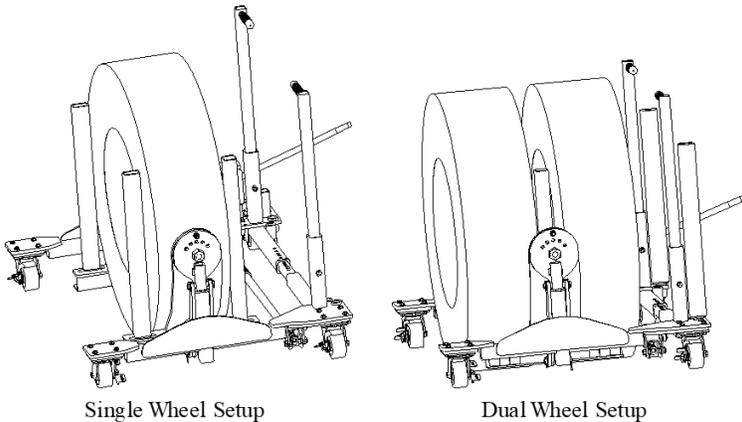
Be careful not to damage seals, bearings, or any other parts during wheel removal and installation.

1. Ensure that the wheel pins are in their storage tubes and the tilt lock is in its disengaged position.
2. Place wheel handler under the wheel to be removed and adjust the wheel handler width so that the wheel will rest securely on the wheel cradles. The width is adjusted by removing the width locking pin, adjusting the handler to the correct width using the width adjustment bar, lining up the closest width adjustment holes, and inserting the width adjustment pin into the aligned width adjustment holes. The width adjustment bar will need to be adjusted to synchronize the wheel cradles when raising and lowering. The width adjustment bar can be adjusted by hand by using the width adjustment bar grip or by tool using the width adjustment bar socket. Hand tools are recommended if using the width adjustment socket. Using power tools on the width adjustment socket, such as an impact wrench, may quickly wear or deform the socket.
3. Raise the wheel handler until the wheel cradles support the weight of the wheel. If the cradle arms are not lifting simultaneously or are at different heights, adjust the width adjustment bar so that they are at the same height and lift in unison. Be careful not to push against the vehicle or carry any of the vehicle's weight while lifting.
4. If possible, insert the wheel pins into the wheel cradles so that they adequately capture the wheel.
 - For duals: use two-wheel pins to capture the wheels by inserting one-wheel pin between the wheels on each wheel cradle.
 - For singles: use four-wheel pins to capture the wheel by inserting two-wheel pins on either side of the wheel on each wheel cradle. Insert the wheel pins as close to the tire as practical.
5. Set the tilt lock by turning the tilt lock rotator until the tilt lock is lined up with the tilt lock pin. Engage the tilt lock by rotating it until it slides over the tilt lock pin. This tilt lock position will assist with achieving the correct position of the

wheel during reinstallation. After the tilt lock position is set it can be moved into its disengaged position at any time before the wheel is to be rotated. If the wheel is not to be rotated it may not have to be disengaged.



6. Remove lug nuts and slide the wheel off the vehicle while it is being carried by the wheel handler. A wiggling motion may assist the removal of the wheel, but care should be taken so that no components are damaged during removal.



will make it easier to rotate the wheel while tightening it will allow the wheel to stay securely where it is placed. Lock the wheel in place using the cradle locking pin on each side before working on the wheel.

3. If the wheel is being replaced, lower it onto the ground. Then capture and raise the new wheel for mounting.

7.5 Replacing the Wheel

1. Position the wheel as needed to install on vehicle. Rotate the wheel as necessary to engage the tilt lock in order to return the wheel to the angle from which it was removed from the vehicle.
2. If necessary, the wheel pins can be removed before installing wheel. Be sure the wheel is stable and won't fall off the wheel handler without the wheel pins.
3. Slide wheel onto vehicle being careful not to damage any components.
4. Replace and properly tighten all hardware to manufacturer's specifications.
5. Remove the wheel handler from under the wheel and vehicle.
6. Lower the vehicle following all instructions provided with the lifting and support equipment.

7.4 Manipulating the Wheel

⚠ WARNING

Do not allow any part of your body underneath the wheel or wheel handler. Also, do not allow any part of your body between the wheel or vehicle and the wheel handler.

1. Ensure the wheel pins are properly placed and the wheel is securely held. Disengage the tilt lock.
2. If the wheel is being worked on, lock some of the casters and rotate the wheel as desired. The friction adjustment nut influences how the wheel rotates. Loosening the adjustment nut

8. Maintenance

WARNING

To prevent injury or property damage, all inspection and maintenance procedures must be performed after the wheel handler has been removed from service.

The owner must inspect, or appoint a knowledgeable person to inspect, the wheel handler. Visual inspection should be made before each use of the wheel handler, checking for abnormal conditions. Regular inspections should be made weekly for daily use and monthly for intermittent use. Each wheel handler must be inspected immediately if subjected to an abnormal load or shock. Any wheel handler which appears to be damaged in any way, is found to be badly worn, or operates abnormally shall be removed from service until necessary repairs are made.

1. Check the oil level in the bottle jack using the procedure outlined in the Adding Hydraulic Fluid section.
2. All warning and capacity labels should be readable and complete. Wash external surfaces of wheel handler, labels, and decals with a mild soap solution.
3. Lubricate all rotating and sliding portions of the wheel handler using a high quality grease.

8.1 Structural Inspection

WARNING

To prevent injury or property damage, all inspection and maintenance procedures must be performed after the wheel handler has been removed from service.

WARNING

The wheel handler must be removed from service and inspected for damage immediately if the wheel handler is subjected to an abnormal shock or load. Never return the wheel handler to service until all damaged components have been properly repaired or replaced. Always test the wheel handler and verify proper operation before returning the wheel handler to service. Failure to heed this warning may result in personal and / or property damage.

NOTICE

The owner must inspect or appoint a knowledgeable person to inspect the wheel handler for signs of corrosion and / or excessive wear. Visual inspection should be

made before each use of wheel handler, checking for abnormal conditions. Regular inspections should be made weekly for daily use and monthly for intermittent use. Any wheel handler which appears to be damaged in any way, is found to be badly worn, or operates abnormally shall be removed from service until necessary repairs are made.

1. Inspect the wheel handler for any cracks, chips, dents, or signs of excessive wear. Visually inspect the welds.
2. Inspect the wheel cradles, wheel pins, and the wheel handler in general for deformation such as bending or twisting.
3. Check the bottle jack for leaks and ensure that it raises and lowers smoothly and fully.
4. Check that the wheel cradles rotate each direction smoothly and fully.
5. Check that the rear tubes adjust in and out smoothly and fully.
6. Verify all pins and other components are in place and in good shape.
7. Ensure casters roll and rotate smoothly and that the brake locks the wheel from rotating and releases properly.

If any irregularities or problems are detected during an inspection, the wheel handler must be removed from service immediately and repaired. Contact the manufacturer using the contact information on the back cover of this manual.

8.2 Adding Hydraulic Fluid

CAUTION

Do not use brake fluid, transmission fluid, or any fluid that is not a high-grade hydraulic fluid equivalent to Tellus T22. Using the wrong fluid can deteriorate the seals and lead to corrosion problems.

1. Remove the wheel handler from service.
2. The bottle jack must be fully lowered, and the wheel handler should be on a level surface.
3. Clean the bottle jack around the fill plug to prevent contamination of the hydraulic fluid.
4. Remove the fill plug and check the oil level. The oil should be just below the fill hole. If the bottle jack is low, add a high-grade hydraulic



fluid equivalent to Tellus T22 until the oil is just below the fill hole.

5. Replace the fill plug, clean up any spills, and test the wheel handler for proper operation.

8.3 Troubleshooting

This section is a list of potential problems and their solutions. If the solution listed fails to correct the problem, contact the manufacturer using the contact information on the back cover of this manual. Please have the model number, and serial number of your wheel handler available. The serial number is printed on a tag located near the bottle jack.

Problem	Cause/Solution
Will not raise load	<ul style="list-style-type: none"> • Wheel handler is overloaded. Rated capacity is printed on a tag located near the bottle jack. Use other lifting means. • Wheel cradles are out of sync. Adjust synchronization. • Bottle jack pressure release is open. Close release. • Bottle jack is low on hydraulic fluid. Check fluid level and add accordingly
Wheel will not rotate	<ul style="list-style-type: none"> • Wheel cradles are too tight. Loosen friction adjustment nut • Rotation pin is inserted. Remove pin. • Wheel handler is not raised enough to avoid hitting the floor. Raise the wheel cradles
Will not cradle tire	<ul style="list-style-type: none"> • Tire is under-inflated, or tire diameter is an incorrect size. Inflate tire. • Wheel cradles are not properly adjusted to fit the wheel. Adjust width with the rear tubes.
Will not lower or lowers erratically	<ul style="list-style-type: none"> • Bottle jack pressure release is closed. Open release • Wheel cradles are out of sync. Adjust synchronization. • Bottle jack has air in reservoir. Open reservoir plug to release pressure.

10. Notes

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