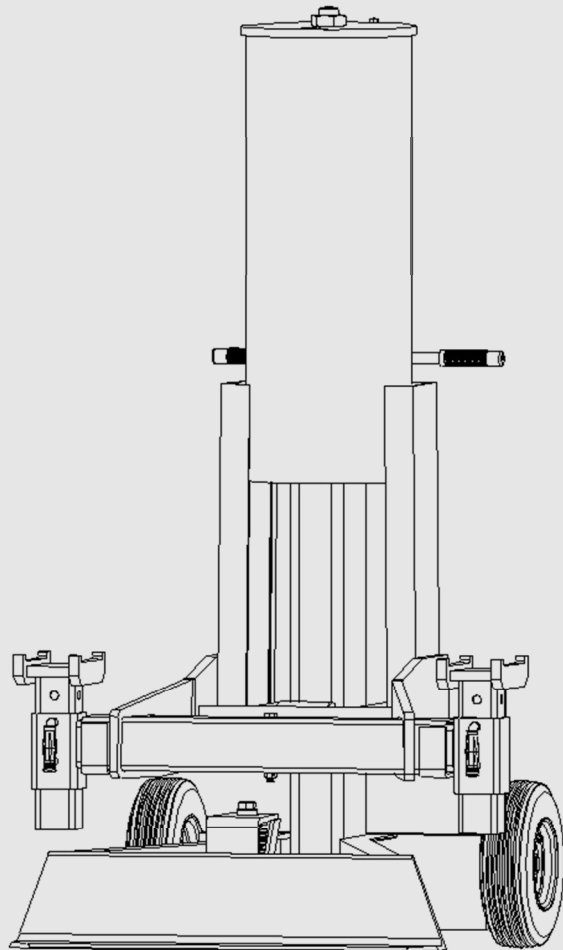


## MAHLE CAL-10

EN

Operation Manual  
Vehicle Air Lift





**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

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## 1.1 Warnings

⚠ Failure to follow all of these safety instructions can lead to severe injury or death from a sudden loss of the load. Contact the manufacturer at the numbers or address printed on the back cover of this manual if you have any questions.

⚠ **Anyone who operates this jack must read and understand all the instructions and warnings provided with this jack before being allowed to use it.** All operators must be careful, competent, trained, and qualified in the safe operation of the jack. The owner (or other responsible individual) must ensure that any operator observes the proper safety procedures for using this jack at all times. If the operator does not read well or is not fluent in English, the owner / manager must read and review the instructions and warnings in the manual with the operator in the operator's native language to be sure that the operator will use the jack properly.

⚠ **The owner / manager must keep this manual for future reference,** and make sure the warning labels on the jack are legible and intact at all times. Replacement labels and manuals are available from the manufacturer. Call the manufacturer using the contact information on the back cover of this manual if you have any questions.

⚠ **If there is any evidence of hydraulic oil leaking from underneath this lift,** the lift must be removed from service and returned to the manufacturer for servicing. Contact the manufacturer as soon as possible. If this warning is not heeded, it may result in possible serious injury and/or property damage or death.

⚠ **Use the jack to raise one end of a vehicle or trailer.** This jack is designed for lifting only one end of the vehicle or trailer, not supporting. Once the vehicle or trailer is lifted, place vehicle supports stands under the vehicle or trailer and remove the jack from the work area. Using this jack to raise loads other than at the end of the vehicle or trailer can result in serious injury or death. NEVER use the jack on a vehicle while the motor is running.

⚠ **NEVER use this jack in conjunction with any other jack or lift.** NEVER use a jack to raise one side of a vehicle.

⚠ **ONLY use the approved manufacturer's recommended lifting points** on vehicles and trailers.

⚠ **NEVER overload this jack.** The jack's maximum capacity is 20,000 lbs. / 9070 kg. If you need to lift more than this, use a jack that has a higher maximum capacity.

⚠ **NEVER modify the jack in any way.** Modifications may cause the jack to perform improperly, resulting in injury or death. NEVER use the jack with aftermarket accessories, lift pads, or adaptors, not supplied by the manufacturer.

⚠ **NEVER loosen the hex nut on top of this jack.** This nut, if loosened will cause the jack to leak air and not function properly.

⚠ **NEVER abuse or cause damage to the jack.** NEVER subject the jack to abnormal shocks or loads. Your safety and that of others depends on the proper operation of the jack.

⚠ **When raising the load, chock the wheels on the end opposite the jack.** Place the jack into position, put vehicle in neutral, and disengage the parking brake. These steps must be taken before connecting the air supply to the jack.

## 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](mailto: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
<b>DANGER</b>	<b>Immediate</b> impending <b>danger</b>	<b>Death</b> or <b>severe</b> injury.
<b>WARNING</b>	<b>Possible</b> impending <b>danger</b>	<b>Death</b> or <b>severe</b> injury
<b>CAUTION</b>	Possible <b>dangerous situation</b>	<b>Minor</b> injury
<b>NOTICE</b>	Possible <b>damage to property</b>	<b>Possible property damage</b>

## 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.

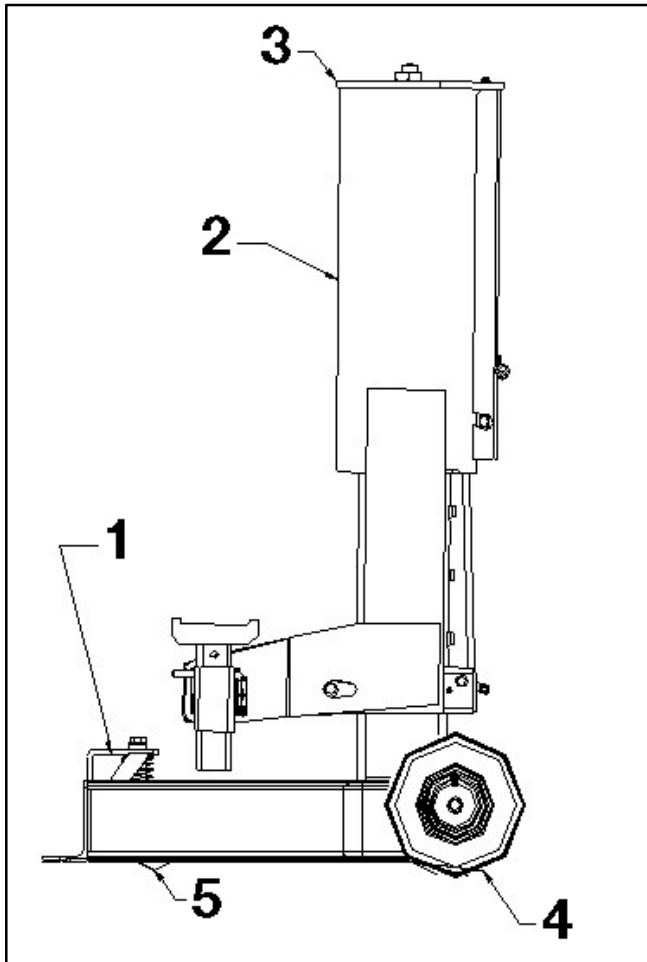
## 5. Specifications

### 5.1 CAL-10

Model CAL-10	US units	Metric units
Maximum capacity	20000 lbs	9070 kg
Maximum air pressure	200 PSI	13.8 Bar
Weight	748 lbs	339.3 kg
Width	37 in	94.0 cm
Depth	43 in	109.2 cm
Height (Lowered)	64 in	162.6 cm
Height (Raised)	94 in	238.8 cm
Saddle spread (Minimum)	37.25 in	94.6 cm
Saddle spread (Maximum)	48.625 in	123.5 cm
Saddle Starting Height (minimum)	14 in	35.6 cm
Saddle Starting Height (maximum)	20 in	50.8 cm
Powered Stroke	30 in	76.2 cm

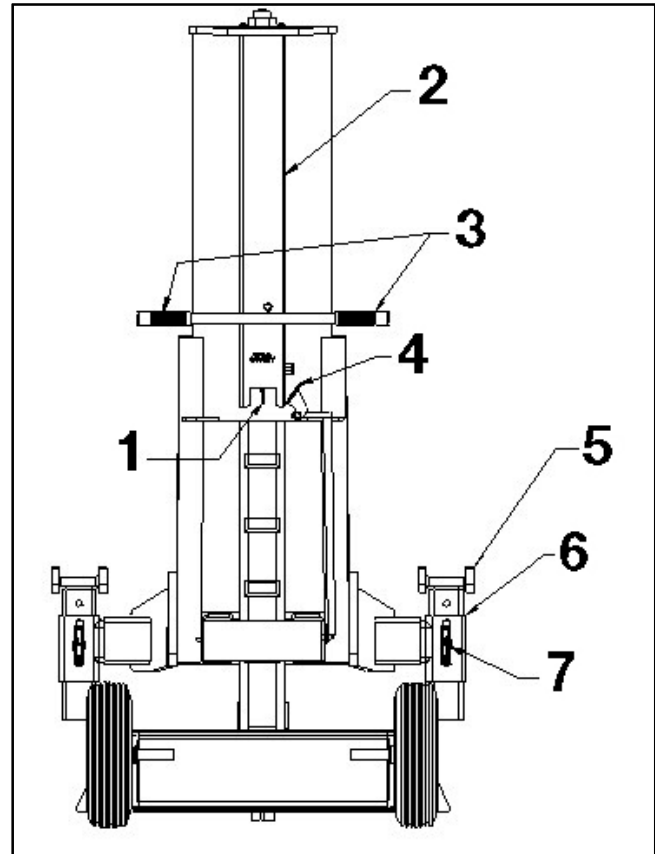
## 6. Product Description

### 6.1 Component identification



**Fig. 1: Side view**

- 1 Base
- 2 Air cylinder
- 3 Cylinder head plate
- 4 Pneumatic wheel
- 5 Swivel caster



**Fig. 2: Rear view**

- 1 Valve handle
- 2 Valve cover
- 3 Handle grip
- 4 Downstop release lever
- 5 Saddle
- 6 Table extension
- 7 Saddle pin

## 7. Operation

⚠ **WARNING** - This section discusses the appropriate and safe methods for using the jack to raise and lower a vehicle. Safe operation is not limited to simply raising and lowering a vehicle - it also includes adequate preparation before the vehicle is lifted. Failure to follow all of the steps outlined in this section could result in serious injury or death.

### 7.1 Preparing to lift

1. Make sure the load does not exceed the rated capacity of the jack (20,000 lbs. / 9,070 kg.)
2. Inspect the jack for signs of wear or damage (see "Inspection Instructions" in Section 8). The jack should be immediately removed from service if you detect any abnormal conditions or signs of damage that suggest the jack will not work properly or safely — When in doubt, don't use the jack!
- ⚠ If you see any signs of wear or damage, or if there is any indication that the jack is not performing normally, immediately take it out of service and contact customer service at the address and number shown on the back cover of this manual. NEVER use a jack that appears damaged in any way.
3. Transport the jack to the work area by wheeling it. You can push or pull the jack. Wheel the jack across smooth surfaces only.
- ⚠ Jolting caused by the wheels catching on uneven surfaces can cause physical strain and personal injury.
4. Select appropriate vehicle support stands and bring them to the immediate work area. Follow the instructions supplied with the vehicle stands. Use appropriate vehicle stands to support the load immediately after lifting. NEVER use the jack to support a load while working on a vehicle. Failure to follow all of these instructions can result in jack instability and loss of a load.
5. Examine the work area. Use the jack only on hard, level surfaces capable of safely supporting the load. The jack must ALWAYS remain in direct contact with the floor. Clear the surrounding area of personnel, tools, equipment, or any other objects that would interfere with the use of the jack. If these conditions cannot be met, move the vehicle and jack to an area where the lift can be performed safely.
6. Chock the vehicle's wheels. When raising a vehicle from one end, always chock the wheels that will remain on the ground. Make sure at least two wheels of the vehicle remain in contact with the floor at all times — NEVER use the jack to raise all four wheels of the vehicle from the floor.

### 7.2 Operating the air valve to raise a load

Once the lift has been positioned under the load to be lifted (according to the safety instructions on the lift), operate the air valve slowly to carefully raise the saddles to engage (capture) the lift points of the vehicle (Fig. 3). After the saddles make contact with the lift points, visually recheck their position to be sure the load is properly seated for lifting. Be careful not to put any part of your body (e.g., arms, hands, fingers, etc.) between the saddle and the lift point on the vehicle. When raising or lowering, the operator should check to make sure nobody else is in the immediate work area.

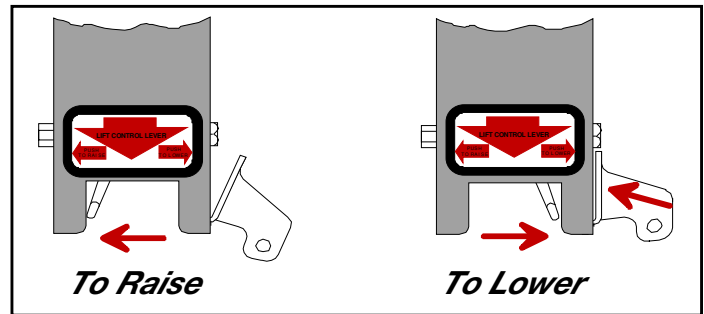


Fig. 3: Air valve operation

To lower the lift, it may be necessary to raise the lift slightly so the down stop pawl can be disengaged from the down stop lug. If lowering the vehicle on vehicle support stands, follow the instructions for positioning and supporting the load outlined in the stand instructions. If lowering the load to the ground, make sure that the work area underneath the vehicle is clear of obstructions before removing the vehicle support stands. Disengage the down stop pawl by holding the lever while pressing the air valve to the right (i.e., the lower position). Hold in the air valve and down stop lever until the lift can be removed from under the vehicle. Air must bleed off for a few seconds before the lift will start lowering.

To avoid a crushing injury, you must make sure that no objects or body parts are on the ground near the lift platform whenever the lift and/or the load are being lowered.

- ⓘ These operating instructions are designed to supplement, not replace, the information and safety instructions provided on the lift itself.



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### 7.3 Function and purpose of lift

- ❗ This lift is designed to lift loads—it is not designed to support loads once lifted. Thus, this lift must always be used in conjunction with appropriate and adequate vehicle support stands. Also, this lift is designed to lift certain loads (e.g., vehicles, trailers) in specific ways (one end and never on the side). NEVER attempt to use this lift in ways for which it was not designed. If you have lifting needs that cannot be met by this lift, do not attempt to modify the lift or use it for purposes other than those for which it was designed—always use a lifting device that is appropriate for the load. Do not use adapters and / or attachments from other units. Consult parts list for adapters and/or attachments that can be used on this product, not to exceed maximum lift height of 50". Contact the manufacturer if you have any questions about other lifts or the appropriateness of this lift for different types of jobs.

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### 7.4 Moving and positioning the lift

- ⚠ The operator should move this lift only on a hard level surface. When moving this lift around the shop floor, it must never be moved in the raised position. When moving the lift, the lift must always be in the lowest position.
- ⚠ Use only the handles provided as the means by which you grab the lift and move it. The lift should NEVER be tilted backwards for any reason (i.e., to clear an obstacle on the floor, to move under an elevated obstacle, etc.). Tilting the lift can cause the lift to fall backwards onto the operator or someone who might be nearby. If the lift ever does fall, for whatever reason, get out of the way immediately—NEVER try to catch the lift if it falls backwards.

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### 7.5 Adjusting saddle horn height

- ❗ On occasion, it may be necessary to adjust the height of the saddle horns in order to make good contact with the lift points of the load (i.e., if there is a distance between the saddle in the lowest position and the lift point on the load). The height of the saddle horns can be adjusted by removing the pin from the saddle, raising the saddle and reinserting the pin into the hole. The pin should always be placed all the way through the saddle arm support. Also, both saddles must be pinned at the same height when lifting a load. DO NOT make saddle height adjustments if these conditions cannot be met. Follow the safety instructions on the lift for positioning the saddles on the lift.

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### 7.6 Lowering the load

In lowering the load, follow steps one (1) through four (4) as indicated on the Warning Decal. Once the saddles of the lift have been positioned properly according to these steps, raise the lift slowly to lift the load off the vehicle support stands. Remove the vehicle support stands from underneath the vehicle. Visually inspect the area beneath the vehicle to ensure that it is free of any obstructions before preparing to lower the vehicle to the ground. Before operating the air valve (refer to the operating instructions – “Operating the Air Valve” & Fig. 3), make sure that no one else is in the immediate work area. Disengage the down stop pawl by holding the air valve and down stop lever until the lift can be removed from under the vehicle. Air must bleed off for a few seconds before the lift will start lowering. After lowering the load, put the vehicle in park and engage the brakes before removing the jack.

## 7.7 Lifting a trailer

- ⚠ In addition to lifting vehicles, this lift can be used to lift trailers. It is important that the box or flatbed trailers be EMPTY prior to lifting to ensure that any weight imbalance in the load does not cause a tip-over when the load is lifted. Also, box and flatbed trailers should be disconnected from their tractors and should be resting on their front supports.
- ⚠ Do not lift the trailer by the ICC bumper if the trailer manufacturer has not designated it as an approved lifting point. In preparing to lift an EMPTY box or flatbed trailer, you should inspect the rear ICC bumper to make sure it is not bent or damaged in any way. If this bumper is damaged, consult the manufacturer to determine if there is an alternate lifting location. Roll the lift into place; make sure it is centered in the trailer and bumper. Make sure that the lift saddles on the lift frame fully engage (cradle) the bottom of the bumper and that the saddle horns are positioned front to back to ensure that the bumper is resting on the face of the saddle and is captured between the saddle horns—this prevents the bumper from slipping off the saddles when lifted.
- ⚠ The proper lift points on an ICC bumper are directly beneath the vehicle structure members (Fig. 4), which connect with the frame and are approximately 34 inches apart in width. Slowly raise the lift frame to engage the bottom of the bumper. Raise the rear of the trailer to the desired height and then install vehicle stands of the proper capacity to support the trailer. Once the stands are in place, lower the trailer onto them and then remove the lift from the work area. Follow the instructions for lowering when work is completed.

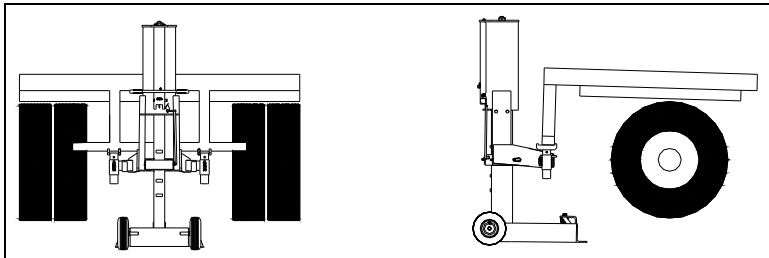


Fig. 4: Lifting trailer

## 8. Maintenance and Inspection

⚠ **WARNING** - The jack must be inspected according to the requirements of this section. Failure to properly inspect the jack could lead to severe injury or death. The jack must be removed from service and inspected immediately if it is subjected to an abnormal load or a shock load. If any irregularities or problems are detected during an inspection, the jack must be removed from service immediately and repaired. Contact the manufacturer at the numbers and address printed on the back cover of this manual.

### 8.1 Inspection – before each use

Visual inspection of the jack must be made before each use of the jack. The jack should be immediately removed from service if any of the following conditions are detected or observed:

- Visually inspect all components of the lift for signs of corrosion and/or excessive wear.
- Inspect the lift for any cracks, chips, or signs of excessive wear. Visually inspect the welds.
- Inspect the saddle support adjusting pins for signs of excessive wear or deformations. Also, inspect the holes on the saddle arm for elongation. If pins cannot be removed from the saddle arms or if there is elongation of the holes, then it is likely that the lift has been overloaded and should be taken out of service until it can be repaired.
- Verify that all warning and instructions decals) are in place and legible before the lift is put back in service. If any decals are missing or illegible, contact the manufacturer for replacements.
- If there is any evidence of hydraulic oil leaking from underneath this lift, the lift must be removed for service and returned to the manufacturer for servicing. This unit is equipped with a non-serviceable vertical restraint and must be returned to the factory for repair. Contact the manufacturer as soon as possible.

### 8.2 Inspection – structural

The owner must inspect, or appoint a knowledgeable person to inspect the jack for signs of corrosion and / or excessive wear. Visual inspection should be made before each use of jack, checking for abnormal conditions. Regular inspections should be made weekly for daily use and monthly for intermittent use. Each jack must be inspected immediately if subjected to an abnormal load or shock. Any jack 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.

- ⚠ The jack must be removed from service and inspected for damage immediately if the jack is subjected to an abnormal shock or load. Never return the jack to service until all damaged components have been properly repaired or replaced. Always test the lift and verify proper operation before returning the jack to service. Failure to heed this warning may result in personal and / or property damage.
- ⚠ To prevent serious injury or death from a falling vehicle, all inspection and maintenance procedures must be performed after the jack has been removed from service. Position the lift so you have clear access to all sides of the lift for inspection and service
  - Inspect the lift for any cracks, chips, or signs of excessive wear. Visually inspect the welds.
  - If any irregularities or problems are detected during an inspection, the jack must be removed from service immediately and repaired. Contact the manufacturer using the contact information on the back cover of this manual.

### 8.3 Maintenance instructions

- ⚠ **WARNING** - All inspection and maintenance procedures must be performed after the jack has been removed from service. Failure to do this may result in personal injury and/or property damage.
- All warning and capacity labels should be readable and complete. Wash external surfaces of jack, labels, and decals with a mild soap solution.
- Lubricate all rotating and sliding portions of the jack monthly.

### 8.4 Air valve cleaning instruction

1. Remove the valve cover.
2. Remove the valve form the 1/4" pipe nipple.
3. Remove the brass handle in the valve body.
4. Use a stiff wire or pin punch to push the spools out of the valve body.
5. Carefully examine the seal on the end of the spool for any dirt or foreign material. If foreign material is embedded in the seal, remove the screw and cup from the end of the spool, then remove and clean the seal. Turn the seal over and reassemble it into the cup. Secure the cup back onto the end of the spool with the screw.
6. Lubricate the spool with light chassis grease. Insert the spool with O-ring into the air inlet spool port.
7. Insert the spool without O-ring into the air exhaust port.
8. Insert the spring(s).
9. Apply thread sealant to the plug(s) and install the plugs into the valve body. Do not over tighten the plug(s), as the threads can very easily be damaged.
10. Install the valve back onto the pipe nipple using pipe thread sealant on the threads of the nipple.

## 9. Troubleshooting

This section is a list of potential problems and solutions. If the solution listed fails to correct the problem, call the manufacturer at the numbers and address printed on the back cover of this manual. Please have the model number, and serial number of your jack available. The serial number is permanently stamped on a metal tag attached to the top of the frame.

Problem	Cause/Solution
Fails to lift load	<ul style="list-style-type: none"> <li>• Inadequate air pressure; requires 200-psi to lift 20,000 pounds.</li> <li>• Lift is overloaded. Rated capacity is for the jack is 20,000 lbs. per lift. Use other lifting means.</li> <li>• Air valve is dirty or damaged. See the "Air Valve Cleaning Instructions" section of this manual.</li> </ul>
Lift will not lower or lowers erratically	<ul style="list-style-type: none"> <li>• Vehicle parking brake is set and/or transmission is in gear.</li> <li>• If lifting on front of vehicle and rear wheels are chocked, place chocks at least 6" behind wheels so vehicle can roll backwards</li> </ul>
Lift raises slowly	<ul style="list-style-type: none"> <li>• Low air pressure. Raise air pressure to 200 psi.</li> <li>• Air valve is dirty or damaged. See the "Air Valve Cleaning Instructions" section of this manual.</li> <li>• Lifts overloaded. Rated capacity is for the jack is 20,000 lbs. Use other lifting means.</li> </ul>
Lift is erratic when lifting or lowering	<ul style="list-style-type: none"> <li>• Make sure vehicle is in neutral and baking brake is disengaged. Always chock wheels on opposite end prior to lifting.</li> </ul>

## 10. Air Pressure Requirements

- To lift 5,000 pounds requires 70 psi.
- To lift 10,000 pounds requires 107 psi.
- To lift 15,000 pounds requires 152 psi.
- To lift 20, 000 pounds requires 205 psi.





## 12. Notes

# MAHLE

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