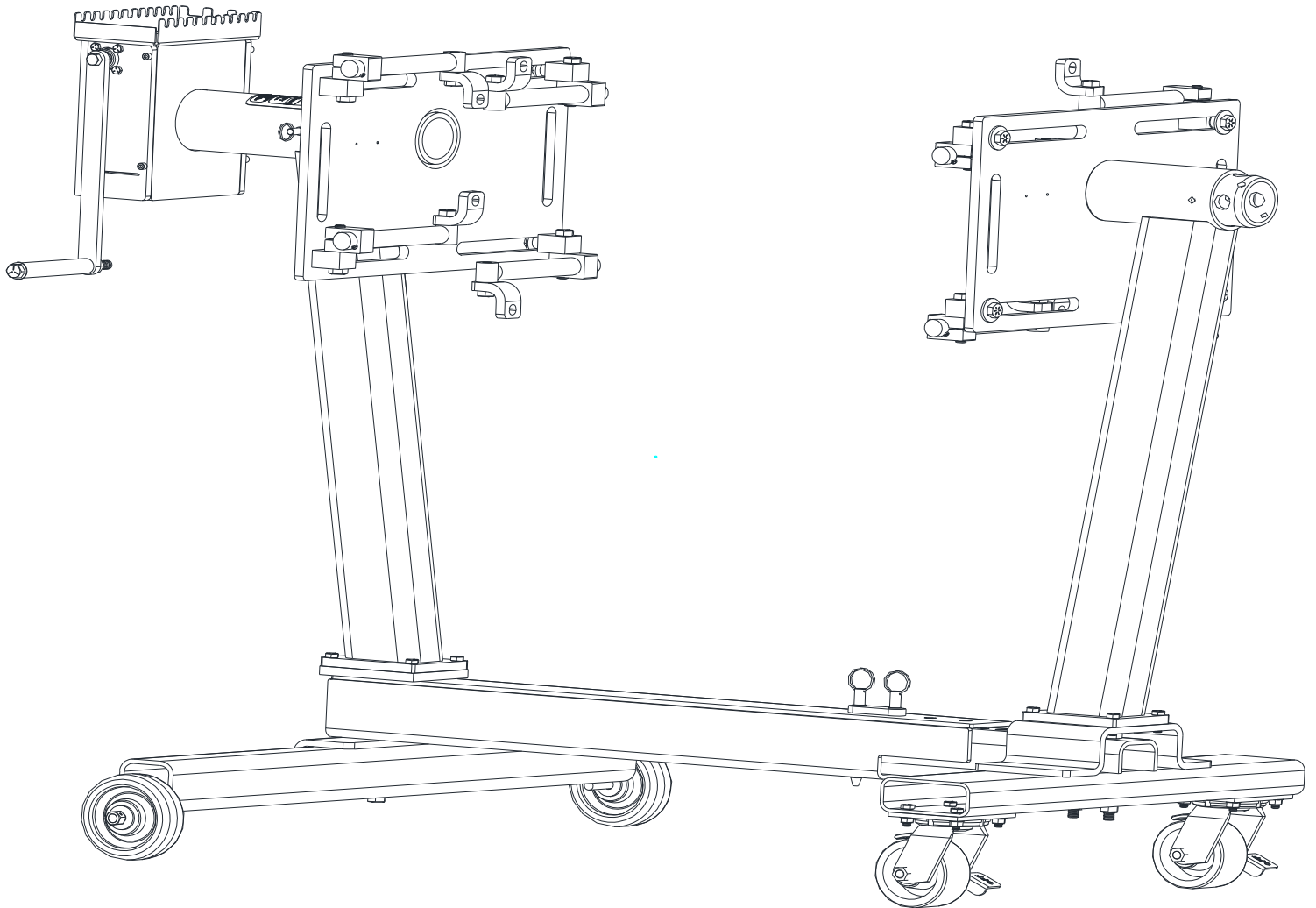


# **CL Challenger Lifts**

## **2000 lb Engine Stand (CLHMES-2000)**



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**IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE  
INSTALLING or OPERATING LIFT**

# IMPORTANT SAFETY INFORMATION

## WARNING

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 using the contact information printed on the back cover of this manual if you have any questions.

- Wear eye protection that meets the requirements of ANSI Z87.1 and OSHA.
- Maximum capacity is 2000 lb. Do not exceed. Overloading can result in equipment failure.
- Never use parts, attachments, or accessories that have not been provided by the manufacturer. Do not use hardware with a lower grade than what is provided by the manufacturer.
- No alterations shall be made to this product.
- Always use caution while operating this device and remain mindful of how the device and load will react during operation of this device. Do not use anything other than the supplied handle to rotate the engine.
- Off-center loads may make the load and handle rotate in either direction when the rotational locking device is released.
- Never load stand abruptly. Load stand slowly and carefully.
- Always use Rotation Locking Pins and Main Tube Locking Pin while moving loaded engine stand.
- Always install Rotation Locking Pin and Main Tube Locking Pin before loading engine stand.
- Always Release Rotation Locking Pins slowly and carefully.
- Never allow the engine's center of gravity to be misaligned with the Mounting Plates' axis of rotation. Ensure engine is fully secured to Mounting Plates before placing on stand.
- Always maintain control of Rotation Handle and use caster brakes while loading and operating engine stand.
- Always use engine stand on a hard level surface. Be sure surface is clean and free of debris, cracks, and chips. Avoid any uneven or dirty surfaces when moving loaded engine stand.
- Never mount anything other than automotive engines without accessories or attachments supplied by the manufacturer.

## 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:

- » **DANGER:** Indicates a hazardous situation, which, if not avoided, will result in severe injury or death. This signal word is to be limited to the most extreme situations.
- » **WARNING:** Indicates a hazardous situation, which, if not avoided, could result in severe injury or death.
- » **CAUTION:** Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury. It may be used to alert against unsafe practices.
- » **NOTICE:** Indicates a property damage message.

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## **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.

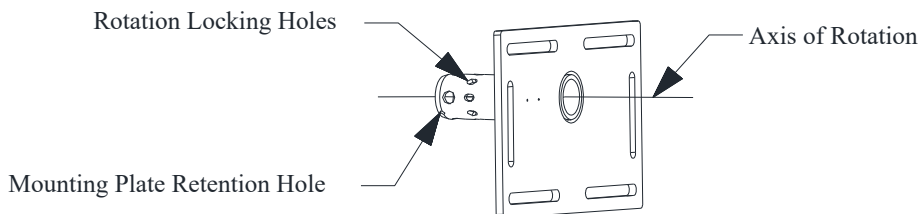
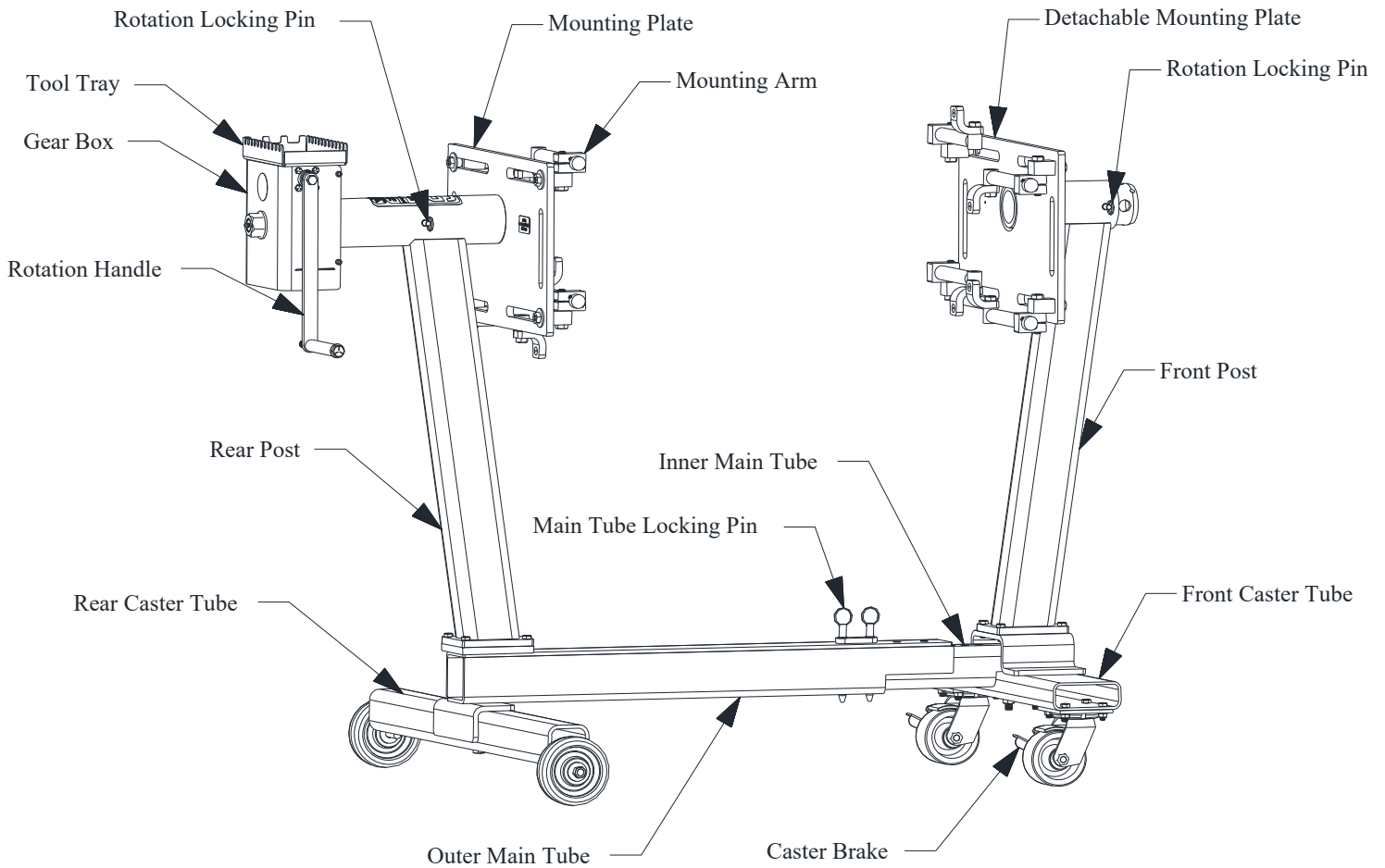
## **OWNER AND/OR OPERATOR RESPONSIBILITIES**

The owner and/or user of this equipment must read and maintain for future reference these instructions. The owner and/or user are responsible for keeping all warning labels and instruction manuals legible and intact. Replacement labels and literature are available from the manufacturer. 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.

# SPECIFICATIONS

Capacity .....	2000 lb. / 908 kg.
Overall Width.....	41 in.
Overall Length.....	84 in.
Overall Height.....	58.5 in.
Maximum Swing Radius .....	31 in.
Handle Length.....	12 in.
Weight .....	337 lb.

# COMPONENT IDENTIFICATION

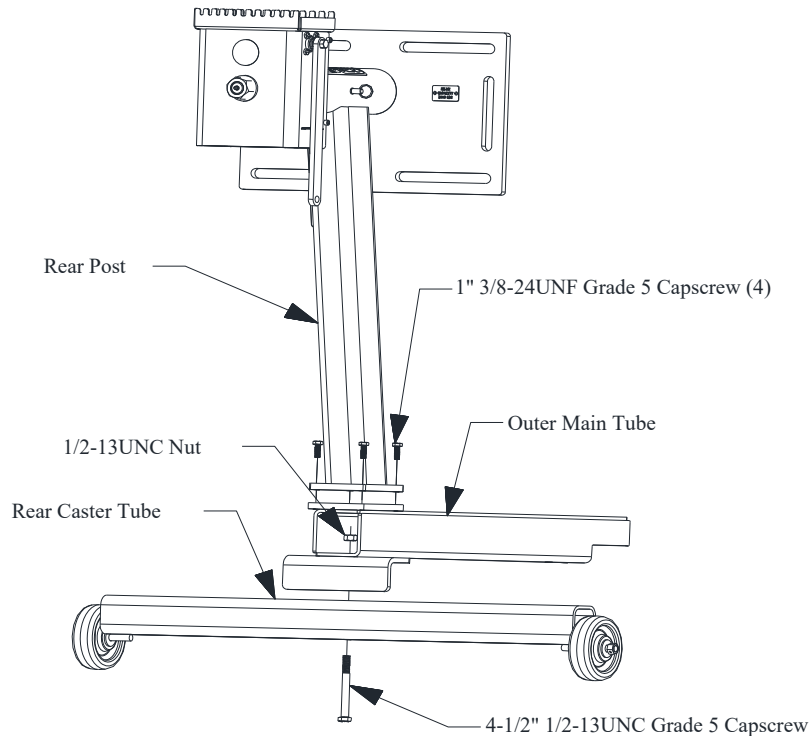


# 1. ASSEMBLY INSTRUCTIONS

## CAUTION

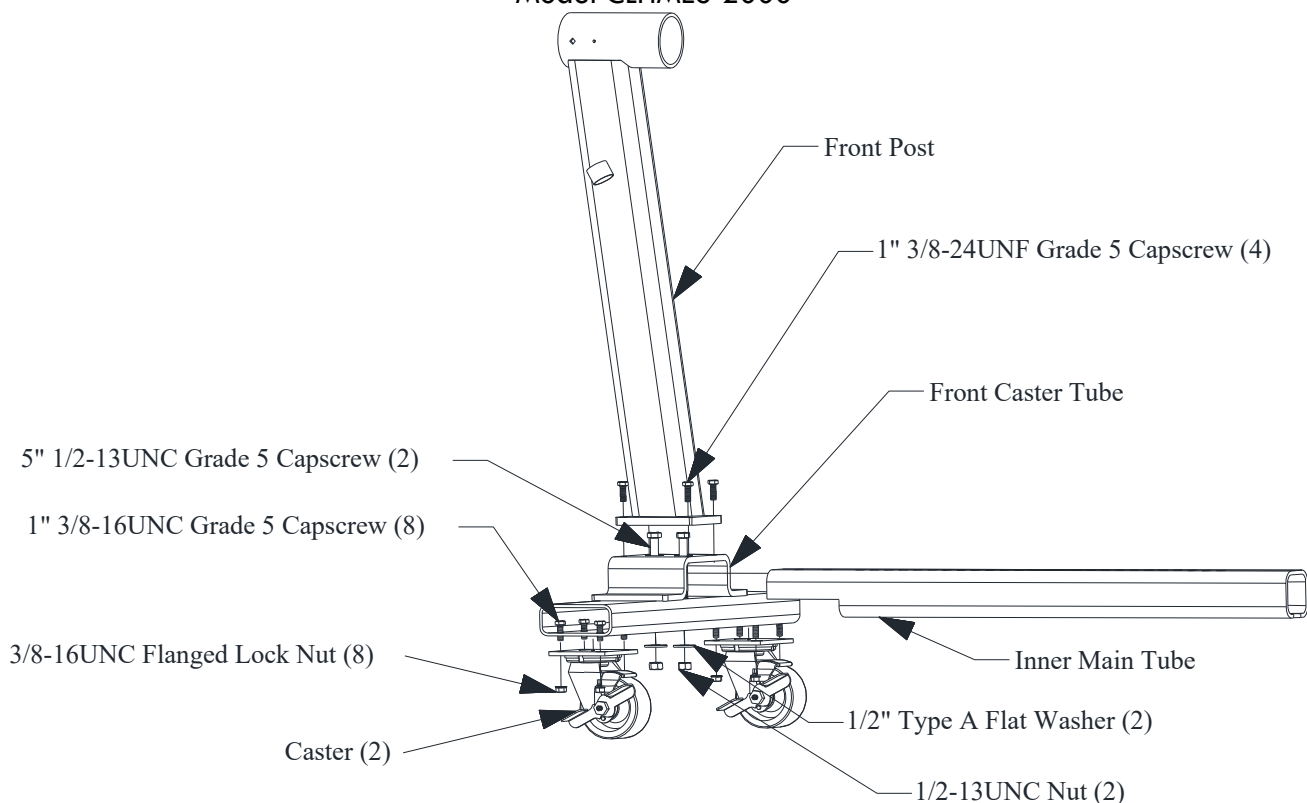
Use care while assembling engine stand. Parts are heavy and awkward to handle. Have another person assist with assembly where necessary.

Use figures to assist in assembly of engine stand. If assembly instructions are not understood, contact the manufacturer using the contact information printed on the back cover of this manual for assistance.

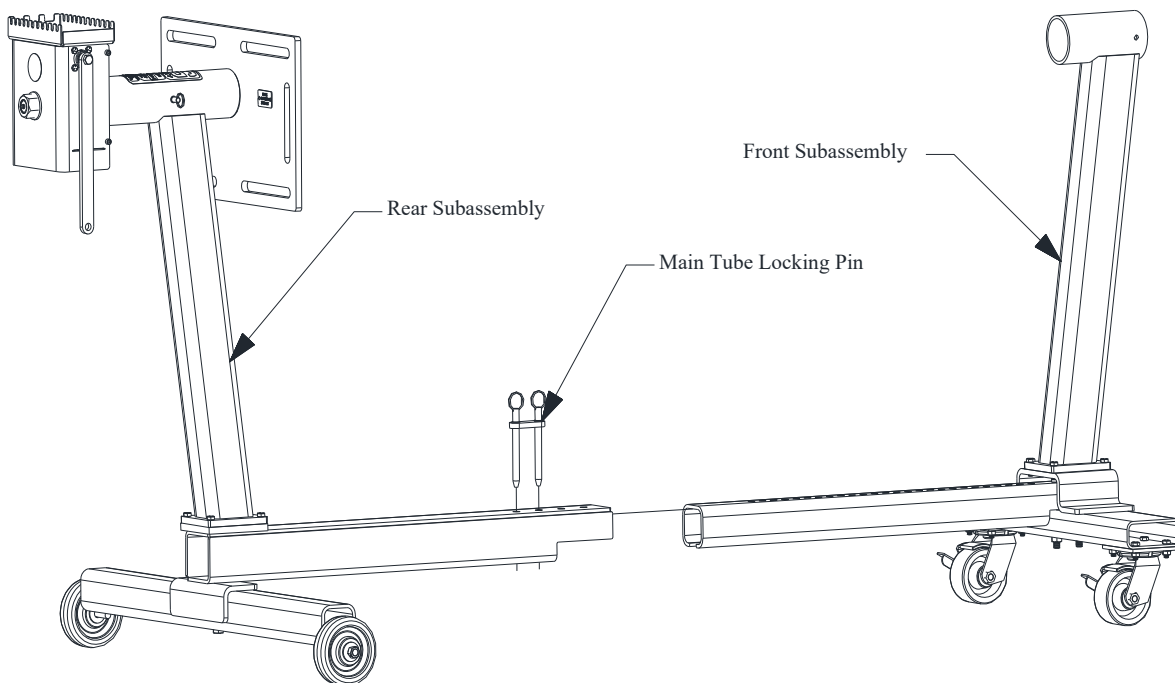


1. Use (1) 1/2-13UNC grade 5 capscrew 4-1/2" long to fasten the Rear Caster Tube to the Outer Main Tube. Torque hardware to 70 ft-lbs minimum.
2. Use (4) 3/8-24UNF grade 5 capscrews 1" long to fasten Rear Post to Outer Main Tube. Torque to 30-35 ft-lbs. **CAUTION! Be careful not to let this subassembly tip over backward. If it will not stay leaning forward, use an appropriate means to hold it from tipping backward.**

Model CLHMES-2000



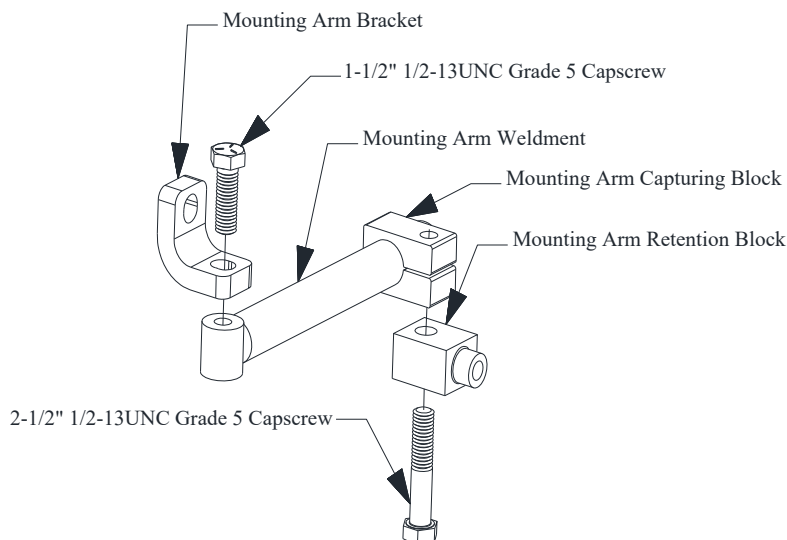
3. Use (4) 3/8-16UNC grade 5 capscrews 1" long and (4) 3/8-16 UNC flanged lock nuts to fasten each of (2) casters to Front Caster Tube.
4. Use (2) 1/2-13UNC grade 5 capscrews 5" long with (2) 1/2" Type A flat washers and (2) 1/2-13 UNC nuts to fasten the Front Caster Tube to the Inner Main Tube. Torque to 70 ft-lbs minimum ensuring the Inner Main Tube is perpendicular to the Front Caster Tube.
5. Use (4) 3/8-24UNF grade 5 capscrews 1" long to fasten Front Post to Front Caster Tube. Torque to 30-35 ft-lbs.



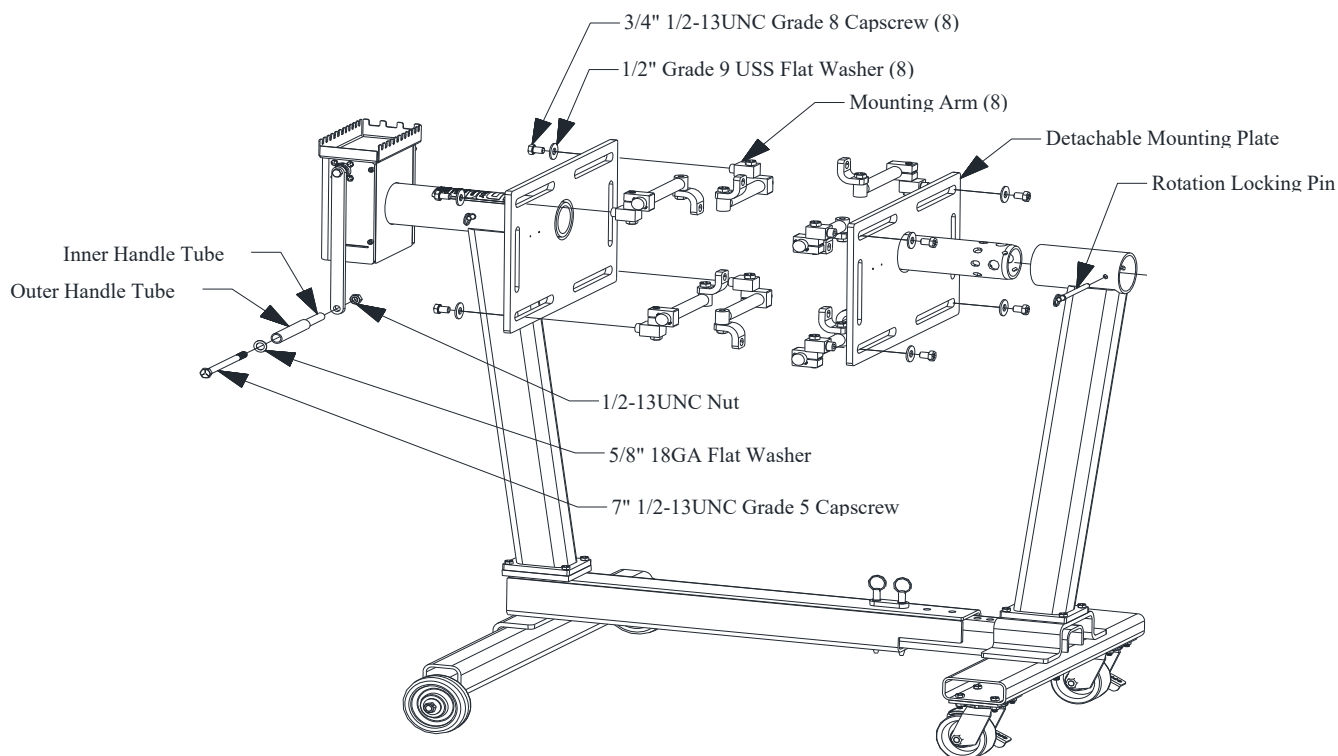
6. Slide the Rear and Front Subassemblies together by inserting the Inner Main Tube into the Outer Main Tube.

## Model CLHMES-2000

- Secure them by aligning the holes in the Outer and Inner Main Tubes and fully inserting the Main Tube Locking Pin into the rearmost pair of holes in the Outer Main Tube that is aligned with holes in the Inner Main Tube.



- Use (1) 1/2-13UNC grade 5 capscrew 1-1/2" long to fasten the Mounting Arm Bracket to the Mounting Arm Weldment. Use (1) 1/2-13UNC grade 5 capscrew 2-1/2" long to fasten the Mounting Arm Retention Block to the Mounting Arm Capturing Block. Ensure the unthreaded hole in the Mounting Arm Capturing Block is against the Mounting Arm Retention Block. This hardware can be left loose when not in use. Repeat this step for all (8) Mounting Arms.



- Use (1) 1/2-13UNC grade 5 capscrew 7" long capscrew with (1) 5/8" 18GA flat washer and (1) 1/2-13 UNC nut to fasten the Inner and Outer Handle Tubes to the Rotation Handle.
- Insert Detachable Mounting Plate into Front Post and insert Rotation Locking Pin through Post and Mounting Plate Rotation Locking Holes to hold Detachable Mounting Plate in place.
- Insert the Mounting Bracket Retention Blocks into the slots in the Mounting Plates and use (8) 1/2-13UNC grade 8 capscrews 3/4" long and (8) 1/2" grade 9 USS flat washers to fasten them to the Mounting Plate.



## 2. OPERATING INSTRUCTIONS

The engine stand is designed to hold and rotate automotive engines weighing no more than 2000 pounds.

### 2.1. Mounting an Engine

1. Prepare the engine to be mounted to the stand. Remove all components that will be in the way of attaching the Mounting Plates to the engine.
2. Adjust the length of the engine stand so that the Mounting Plates are as close as possible while still accommodating the engine to be worked on and lock the Main Tubes by fully inserting the Main Tube Locking Pin into the rearmost pair of holes in the Outer Main Tube that are aligned with holes in the Inner Main Tube.
3. Ensure Rotational Locking Pin is fully inserted into Rotation Locking Hole of Mounting Plate.
4. Using a shop crane or other suitable means, move the engine into position for attaching to the stand. Follow instructions provided with equipment used to move engine. Have the stand located so that the need to move the stand after the engine has been mounted is minimized.
5. Align the engine's center of gravity with the Mounting Plates' axis of rotation and loosely attach, at minimum, 3 Mounting Arms per Mounting Plate to adequate mounting holes on the engine using appropriately sized, grade 8 capscrews and washers. Capscrews should have, at minimum, 1 inch of thread engagement with the engine and the Mounting Arm Brackets should fully contact the engine. The locations at which the Mounting Arms will be attached to the engine should be as far apart as possible.
6. Insert the Rotation Locking Pin into the Mounting Plate Retention Hole on the Detachable Mounting Plate. If the Mounting Plate Retention Hole is not protruding from the rear of the tube on the Front Post, shorten the stand according to step 2. **WARNING! If the equipment being used to hold the engine is not rated for overhead use, the engine must be moved while adjusting the length of the stand so that no body parts are allowed under the engine while the stand is being adjusted.**
7. Tighten all capscrews in the Mounting Arms to at least 75 ft-lbs of torque while maintaining alignment of Mounting Plates' axis of rotation and engine's center of gravity.
8. Slowly transfer engine's weight to engine stand. **CAUTION! If the engine or stand shifts, moves, or rotates check that the engine's center of gravity is in line with the Mounting Plates' axis of rotation and that all hardware is properly tightened. If something seems wrong, remove the engine stand from service and inspect it according to the Inspection Instructions in this manual.**
9. Rotate engine by holding engine in place, slowly removing Rotation Locking Pin from Mounting Plate, and carefully rotating engine to locking position closest to desired position.
10. Insert Rotation Locking Pin into Rotation Locking Hole of Mounting Plate before releasing handle.
11. Slowly and cautiously move the stand to the desired work location. Once the stand is in location, use the brakes on the Casters to prevent movement.

### 2.2. Dismounting an Engine

1. Prepare engine for moving and engine's destination for accepting engine.
2. Check that both Rotation Locking Pins are inserted in the stand.
3. Using a shop crane or other suitable means, capture engine and transfer engine's weight to equipment being used to move engine. Follow instructions provided with equipment being used to move engine.
4. Carefully detach engine from Mounting Arms.

## 3. MAINTENANCE INSTRUCTIONS

### **⚠ WARNING**

All inspection and maintenance procedures must be performed after the engine stand 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 stand, labels, and decals with a mild soap solution.
- » Lightly oil or grease any places where the paint has worn off to prevent corrosion and lubricate movement.
- » Lubricate the tubes on the Mounting Plates before each use. There are grease zerks located on the Post tubes to aid in lubrication of the Mounting Plates.
- » Grease the Gear regularly during use. The gear teeth can be greased from the bottom of the gear box and the inside of the Gear can be greased using the grease zerk on the back of the gear box.
- » Grease wheel axles.
- » Periodically grease the Worm, Gear Pin, Worm Sleeve and any other unpainted parts inside the gear box. This can be done during periodic inspection.

## 4. INSPECTION INSTRUCTIONS

### **⚠ WARNING**

The engine stand must be inspected according to the requirements of this section. Failure to properly inspect the engine stand could lead to severe injury or death. The engine stand 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 engine stand must be removed from service immediately and repaired. Contact the manufacturer using the contact information printed on the back cover of this manual.

### 4.1. Before Each Use of the Engine Stand

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

- » Any part is cracked, chipped, bent, or shows signs of excessive wear or any other type of damage.
- » Either Post or either Caster Tube is loose on the Main Tube.
- » The wheels and/or casters do not roll freely or the axles appear bent or otherwise damaged.
- » Any abnormal condition or sign of damage that suggests the engine stand will not work properly.

### 4.2. Periodic Inspection

The engine stand owner (or a knowledgeable person appointed by the owner) must give the engine stand a more thorough inspection weekly (if it is used on a daily basis) or monthly (if used less frequently). In addition to a visual inspection (as described above in Section 4.1), the inspector should also operate the engine stand to assist in identifying any problems that might exist. The engine stand must be removed from service and repaired if the engine stand appears damaged, if it is badly worn, or if it operates abnormally.

- » Check that all hardware is properly tightened and in good condition.
- » Ensure that the axis of rotation of each of the Posts is level.
- » Check that the Mounting Plates, Mounting Brackets, and mounting hardware are not bent or stretched.
- » Check that the Gear teeth and Worm are in good condition and are not cracked, bent, excessively worn, or otherwise damaged.
- » Check that the Rotation Locking Pins are not damaged in any way and can be easily installed and removed.



# Notes

