

## MAHLE CCL-300H

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Operation Manual  
Hi-Rise Clutch Jack





**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

⚠ **To avoid serious injury or death**, read this manual carefully before operating this unit. 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.

⚠ **Before using this jack**, be sure you have read and understood all of the instructions and warnings on the on product labeling and in this owner's manual. See the section entitled "OWNER AND/OR OPERATOR RESPONSIBILITIES" on page 6 of this manual for more information.

⚠ **Inspect the jack before each use**. The jack must be removed from service if damage is detected or if the jack is subjected to an abnormal shock or load. See page 10 of this manual for proper "INSPECTION – BEFORE EACH USE."

⚠ **Inspect the work area before each use**. Make sure vehicle is appropriately supported before starting repairs. Use the jack only on hard, level surfaces capable of sustaining the load.

⚠ **Make sure air stage of lift is fully raised or fully lowered prior to transferring load**. If a load is transferred to the lift when the air cylinder is only partially raised, the lift will drop suddenly. Do not allow any part of your body under the load while jack is supporting a load.

⚠ **Make sure the load does not exceed the rated capacity of the jack**. The maximum lifting capacity of the CCL-300H is 300 lb. / 140 kg.

⚠ **Be sure vehicle is appropriately supported before starting repairs**.

⚠ **Use the jack only as a lift, not as a workstand**. Lift only by means of the head assembly; never use any other part of the jack as a lifting surface.

⚠ **Keep component in lowest position when rolling jack across floor**.

⚠ **Use only the factory supplied adapters**. Do not use any adapters that are not supplied by the manufacturer.

⚠ **Always use the jack as intended**. Never modify or alter the jack.

⚠ **This jack has a non-adjustable regulator**. Do not attempt to adjust regulator in any way.

⚠ Failure to understand and obey these warnings may result in personal injury and / or property damage.

## 2. Foreword

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### 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

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### 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.

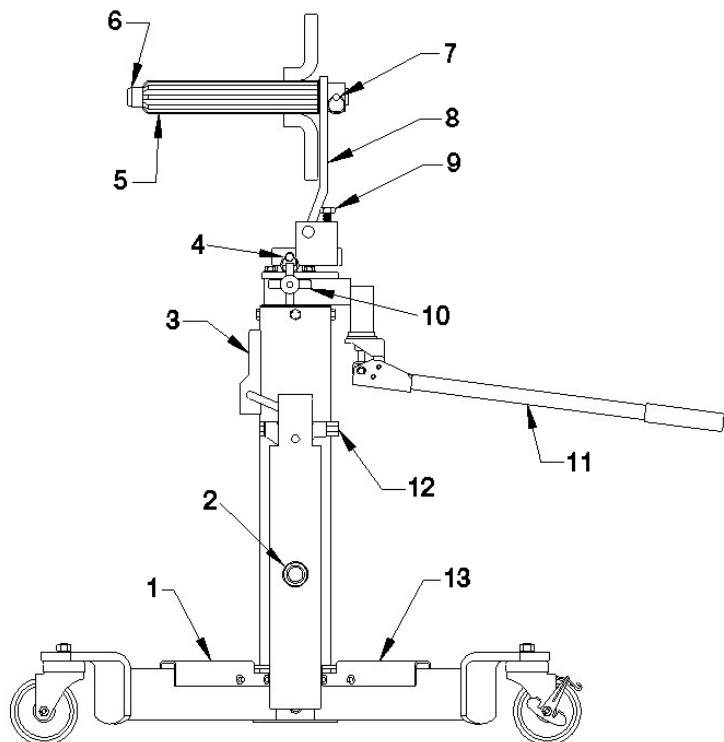
## 5. Specifications

### 5.1 CCL-300H

Model CCL-300H	US units	Metric units
Capacity	300 lb	140 kg
Start Height	40 in	101.6 cm
Lift Height	80.5 in	204.5 cm
Width	41 in	104.1 cm
Length	41 in	104.1 cm
4 Swivel Casters	4 in	10.2 cm
Air pressure	100-160 psi	6.9-11.0 bar
Weight	105 lb	47.6 kg
Head rotation	360°	360°

## 6. Product Description

### 6.1 Component identification



**Fig. 1: Component identification**

- 1 Down pedal
- 2 Non-adjustable regulator\*
- 3 Locking pawl
- 4 Quick release pin
- 5 Spline sleeve
- 6 Adapter shaft
- 7 Quick release pin
- 8 Head plate
- 9 Tilt adjustment screw
- 10 Release knob
- 11 Pump handle
- 12 Air inlet
- 13 Up pedal

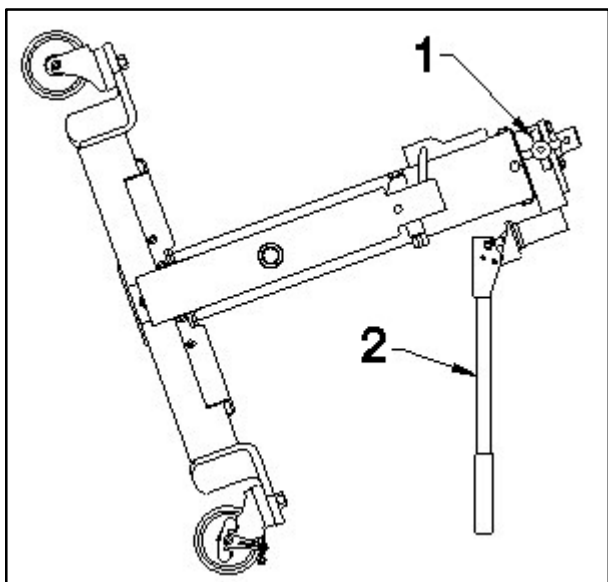
\* This is a non-adjustable regulator. Do not remove or attempt to adjust regulator in any way. Failure to heed this warning may result in personal injury and/or property damage.

## 7. Operation

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

### 7.1 Priming instructions

1. Tilt entire jack over on two casters with the pump handle down as show in Fig. 2.



**Fig. 2: Tilt jack to prime**

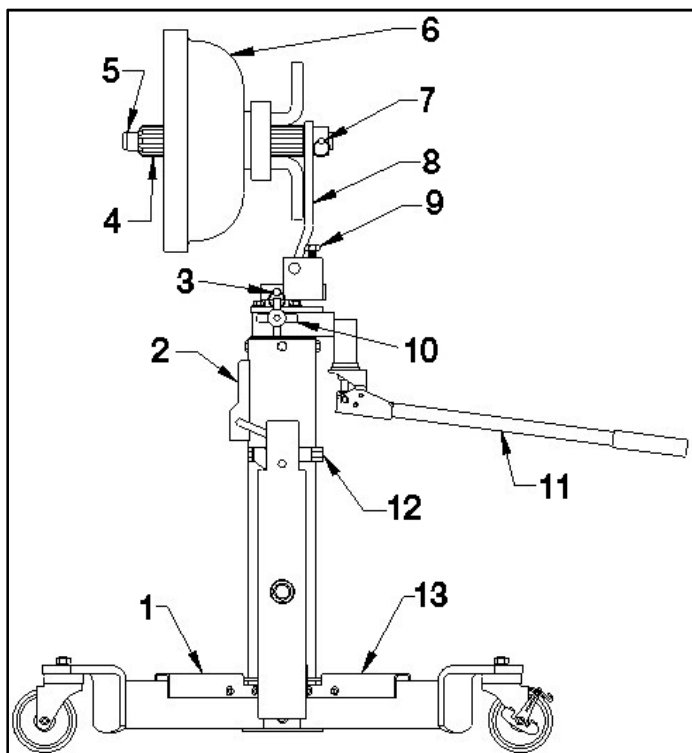
- 1 Release knob
- 2 Pump handle

2. Open hydraulic release valve by turning release knob and operate the pump handle until resistance is felt.
3. Close hydraulic release valve and continue pumping handle while restoring jack to upright position.

### 7.2 Removing a clutch

1. Attach air hose. Depress foot pedal marked "UP" and raise air stage to its fully extended and locked position. Air hose may be removed after cylinder reaches full line pressure.
2. Close the release knob fully. Operate the pump handle to raise the spline sleeve and align it with the clutch.
3. Tilt the head plate with the tilt adjustment screw to align it with the clutch bore. Slide the spline sleeve into the clutch.

4. Remove the clutch mounting bolts and back the jack and clutch away from the flywheel. Open the release knob slowly and lower the hydraulic stage slowly. Then lower the air stage by first depressing the pedal marked "UP" to lift the load off the locking pawl. Then press the pedal marked "DOWN".



**Fig. 3: Removing clutch**

- 1 Down pedal
- 2 Locking pawl
- 3 Quick release pin
- 4 Spline sleeve
- 5 Adapter shaft
- 6 Clutch
- 7 Quick release pin
- 8 Head plate
- 9 Tilt adjustment screw
- 10 Release knob
- 11 Pump handle
- 12 Air inlet
- 13 Up pedal

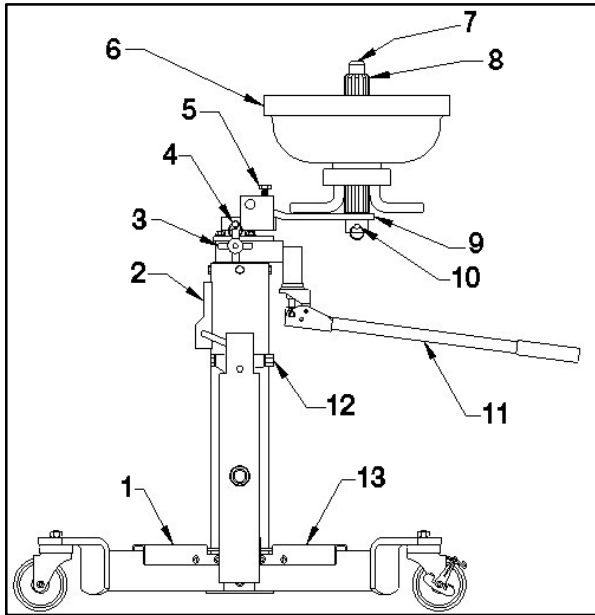


### 7.3 Transporting the jack

- ❶ Be sure the adapter shaft is in the vertical position and the jack is fully lowered before transporting, as shown in Fig. 4.

### 7.4 Loading and unloading clutch from jack

- 1. To load or unload a clutch from the jack, be sure the adapter shaft is in the vertical position, as shown in Fig. 4.



**Fig. 4: Loading/unloading clutch from jack**

- 1 Down pedal
- 2 Locking pawl
- 3 Release knob
- 4 Quick release pin
- 5 Tilt adjustment screw
- 6 Clutch
- 7 Adapter shaft
- 8 Spline sleeve
- 9 Head plate
- 10 Quick retention pin
- 11 Pump handle
- 12 Air inlet
- 13 Up pedal

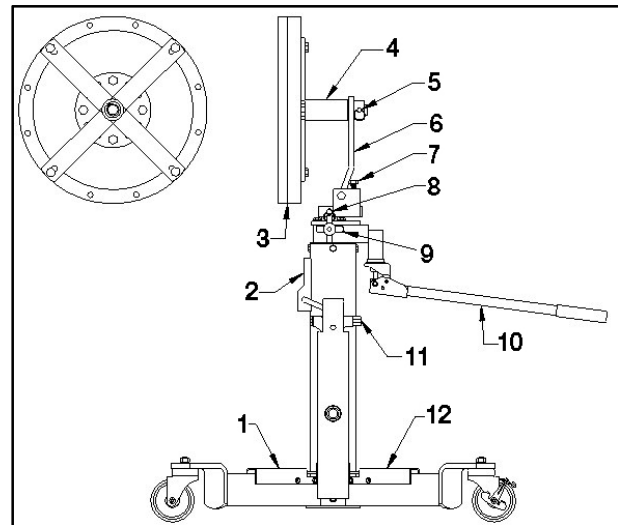
- 2. Add or remove one piece of the clutch at a time.

### 7.5 Installing a clutch

- 1. Raise the clutch into position for installation and tilt the clutch using the tilt adjustment to align with the flywheel.
- 2. Put the jack and clutch into position so that the spline shaft engages the pilot bearing in the flywheel. Install and tighten the clutch mounting bolts.

### 7.6 Removing/installing flywheel using optional flywheel adapter

- 1. Remove all flywheel to crankshaft retaining bolts except for the top bolt and two at 90° to the top bolt.
- 2. Install the flywheel adapter as shown in Fig. 5. Attach air hose. Depress foot pedal marked "UP" and raise air stage to its fully extended and locked position. Air hose may be removed after cylinder reaches full line pressure.



**Fig. 5: Using flywheel adapter**

- 1 Down pedal
- 2 Locking pawl
- 3 Flywheel
- 4 Flywheel adapter
- 5 Quick release pin
- 6 Head plate
- 7 Tilt adjustment screw
- 8 Quick release pin
- 9 Release knob
- 10 Pump handle
- 11 Air inlet
- 12 Up pedal

- 3. Close the release knob fully. Operate the pump handle to raise the flywheel adapter and align it with the flywheel using the tilt adjustment screw.
- 4. Center the flywheel adapter in the flywheel and bolt the adapter to the flywheel. Leave room to access the remaining three flywheel to crankshaft flange mounting bolts retaining the flywheel to the crankshaft flange. Make sure the release knob is closed and the locking pawl is engaged, and then remove the last three flywheel to crankshaft mounting bolts.
- 5. Back the jack and flywheel away from the engine. Open the release knob slowly and lower the hydraulic stage slowly. Then lower the air stage by first depressing the pedal marked "UP" to lift the load off the locking pawl. Then press the pedal marked "DOWN".

## 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

The jack owner (or a knowledgeable person appointed by the owner) must give the jack 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), the inspector should also operate and move the jack to assist in identifying any problems that might exist. The jack must be removed from service and repaired if the jack appears damaged, if it is badly worn, or if it operates abnormally.

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 the jack for signs of cracking, chipping, or excessive wear, including all welds.
- Visually inspect all four casters for cracking, chipping or excessive wear.
- Visually inspect the power unit for oil leaks.
- Any abnormal condition or sign of damage that suggests the jack will not work properly.

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

### 8.2 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.

⚠ Lower unit completely and exhaust all air from the air cylinder before servicing the air cylinder. Failure to exhaust all air from the air cylinder can cause rapid separation of the piston rod from the air cylinder. Failure to heed this warning may result in serious personal injury and / or property damage.

- Apply light machine oil at all portions of movement to the jack monthly.
- All warning and capacity labels should be readable and complete. Wash external surfaces of jack, labels, and decals with a mild soap solution.

### 8.3 Replenish oil supply

❶ With all four casters of the jack resting on the floor, lower the hydraulic stage fully and remove the head assembly by extracting the four head mounting bolts. See Fig. 6. Carefully clean the top of the jack to remove all dirt, especially in the vicinity of the fill plug. Remove the release knob by turning counterclockwise. Remove the fill plug and using a squirt-oil can, slowly add Mobil DTE #11 oil (or equivalent) until reservoir overflows. Note: The release knob opening serves as reservoir vent during filling. Be sure to reinstall release knob and reservoir plug, and then remount the pivot head.

❷ Note: The release knob opening serves as reservoir vent during filling. Be sure to reinstall release knob and fill plug, and then remount the head assembly.

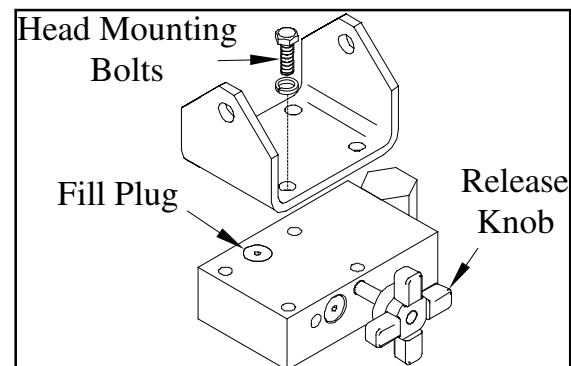


Fig. 6: Replenish oil

## 8.4 Air valve cleaning instructions

Occasionally pieces of scale or rust from the airline will become lodged under the rubber seats of the air valve causing air leakage. This leakage is easily detected since lift will rise slowly when you connect the airline to the quick coupler inlet even though the valve lever has not been touched. If this occurs, the Inlet Side of the valve needs cleaning. The lift may also lower slowly when you disconnect the airline from the quick coupler even though the valve lever has not been touched. If this occurs, either the Inlet Side or both sides of the valve needs cleaning. To clean, refer to Fig. 7 and follow these instructions: A. Remove the adapter (2) from the Inlet Side of the air control valve. Inspect screen (1) for foreign particles and clean as required. B. Remove the spool (7) from the body by pushing on spool (7) (from center toward the outside of valve) with a piece of stiff wire or nail. C. Carefully examine the valve seal (6) for any scale, dirt or foreign matter. If foreign matter is embedded in the valve seal (6), remove the screw (4) and cup (5) from the end of spool (7) and clean the seal (6), turn over the seal and reassemble. D. Lubricate the spool (7) with light chassis grease. E. Reassemble the valve in this order: First, insert the spool (7). Make sure that the spool with the O-Ring (8) is reassembled on the Inlet Side. Second, insert spring (3). Third, assemble adapter (2) into inlet side and plug (10) into exhaust side of body (9). The valve should now operate like new.

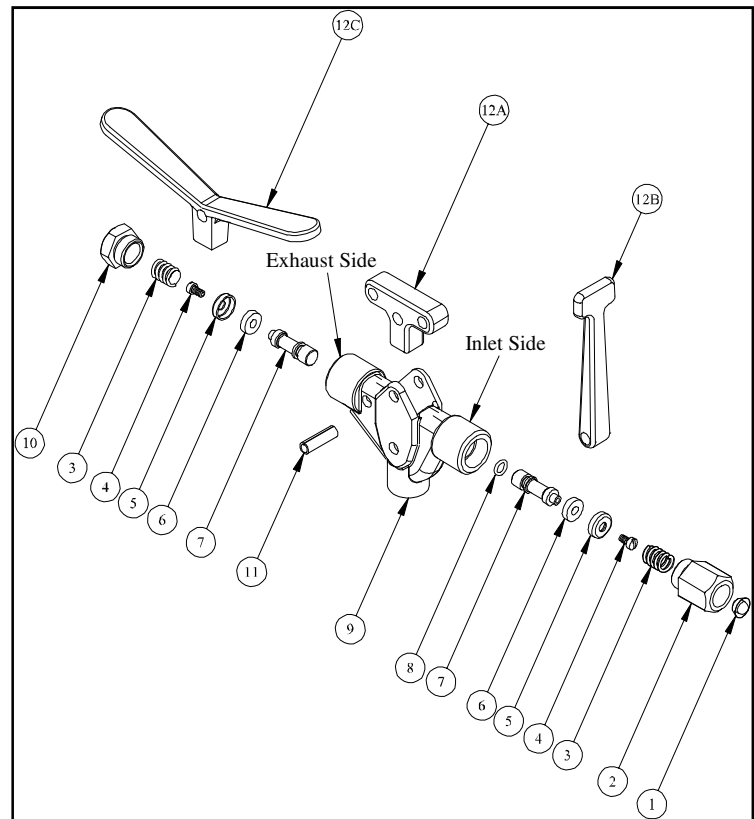


Fig. 7: Air valve exploded view

#	P/N	Description	Qty
1	1-312-91004	Screen	1
2	1-274-12001	Adapter	1
3	1-233-12001	Spring	2
4	0-202-10601	Screw	2
5	1-312-91003	Cup	2
6	1-390-10006	Seal	2
7	1-312-91002	Spool	2
8	0-390-00005	O-Ring	1
9	4-312-91001	Body	1
10	1-275-21004	Plug	1
11	0235-21009	Roll Pin	1
12	Note 2	Handle	1

### Notes:

- Complete Valve Assembly, with Handle:
  - 2-312-01005 Valve Assembly, Tee Handle
  - 2-312-01006 Valve Assembly, Long Handle
  - 2-312-01007 Valve Assembly, Winged Handle
- Handle part numbers:
  - 12A 1-232-20053 Tee Handle
  - 12B 1-232-20034 Long Handle
  - 12C 1-232-20052 Winged Handle

## 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 the left front caster bracket.

Problem	Cause/Solution
Hydraulic stage fails to lift load	<ul style="list-style-type: none"> <li>• Out of prime: See “Priming Instructions” on decal fastened to the jack and also found in the “Operating Instructions” section of this manual</li> <li>• Low oil level, see the “REPLENISH OIL SUPPLY” section of manual.</li> <li>• Release open, turn control knob clockwise until tight.</li> </ul>
Air stage fails to lift load	<ul style="list-style-type: none"> <li>• Inadequate air pressure; requires 100 – 160 psi required</li> </ul>
Hydraulic stage fails to hold load	<ul style="list-style-type: none"> <li>• Release open, turn control knob clockwise until tight.</li> </ul>
Air stage fails to hold load	<ul style="list-style-type: none"> <li>• Air leak. Remove jack from service and repair leak. Possible dirty air valve seals. Follow simple directions on cleaning the air valve located in the “Maintenance Instructions” section of this manual</li> </ul>
Locking pawl cannot be released with light foot pressure on the down foot pedal	<ul style="list-style-type: none"> <li>• Attach air hose and depress up foot pedal to pressurize air cylinder. The air stage will extend completely and now the down foot pedal will pull the locking pawl back so the air stage will lower. Do not attempt to pry the pawl loose.</li> </ul>

## 10. Optional Adapters

### 10.1 Flywheel adapter

- ❶ The flywheel adapter is rated at 250 lbs. DO NOT overload when using this adapter. Failure to heed this warning may result in personal and / or property damage.

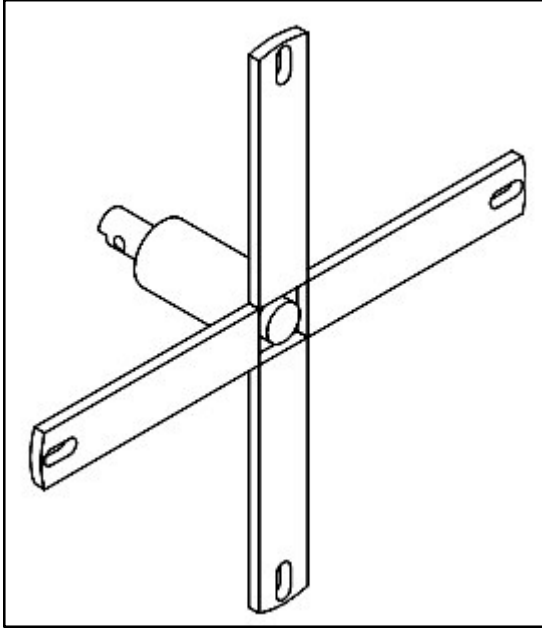


Fig. 8: Flywheel adapter – front view

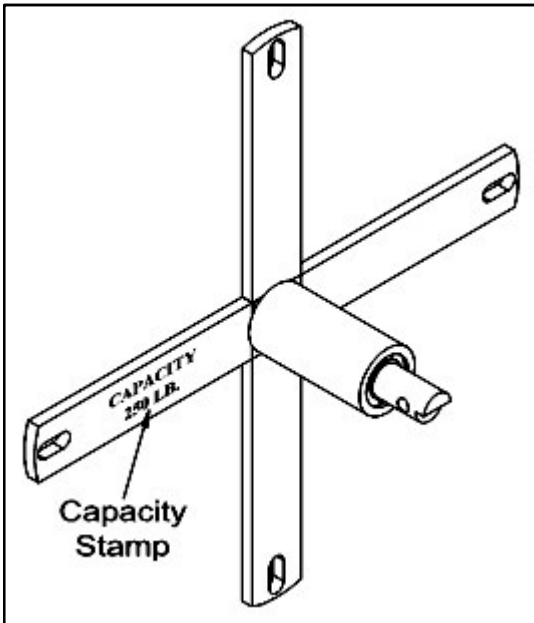


Fig. 9: Flywheel adapter – rear view

### 10.2 1.75" spline adapter

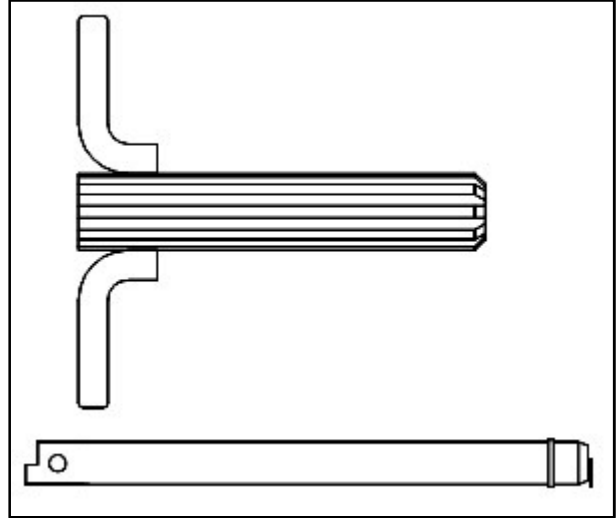


Fig. 10: 1.75" diameter spline adapter





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